6

Impact of the US External Imbalance on the Rest of the World

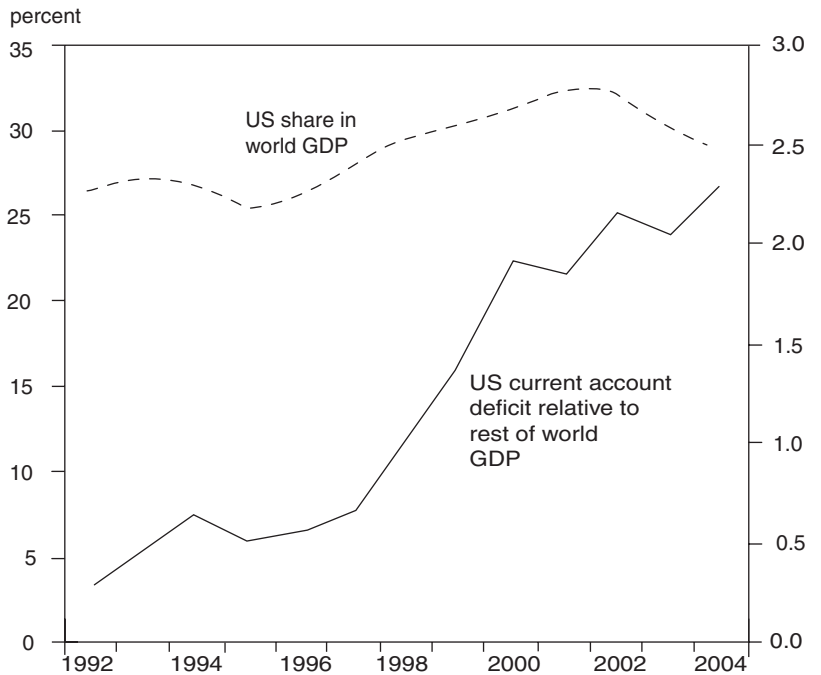
From the mid-1990s through 2004, the US economy served as the main source of demand growth among industrial countries, and hence as the locomotive for the global economy. This would have been true even if the United States had not experienced a rising trade deficit. The widening trade deficit has, however, amplified the role of the United States in leading world demand growth. At the same time, the rising US call on global capital flows to finance its external deficit means that there were potentially adverse effects on the rest of the world through higher interest rates. On balance, however, it would appear that the favorable output demand effects have greatly exceeded any adverse interest rate effects.

Impact on Global Demand

Figure 6.1 shows the share of the US economy in world GDP, which rose from 26.5 percent in 1992 to a peak of 32.5 percent in 2001 before easing to 28.9 percent in 2004.[1] The rise through 2002 reflected not only more rapid real growth in the US economy than in the rest of the world, particularly Europe and Japan, but also the valuation effect of a strengthening dollar and hence larger value of US GDP when compared with foreign currency GDPs translated into dollars. The downturn of the dollar in 2003 and 2004 was the main reason for the partial reversal of the rising share in world nominal GDP.

1. World dollar GDP data are from the International Monetary Fund (IMF 2005b). The US current account deficit is from the Bureau of Economic Analysis (BEA 2005c).

Figure 6.1 US share in world GDP (left) **and US current account deficit relative to rest-of-world GDP** (right)**, 1992–2004** (percent)



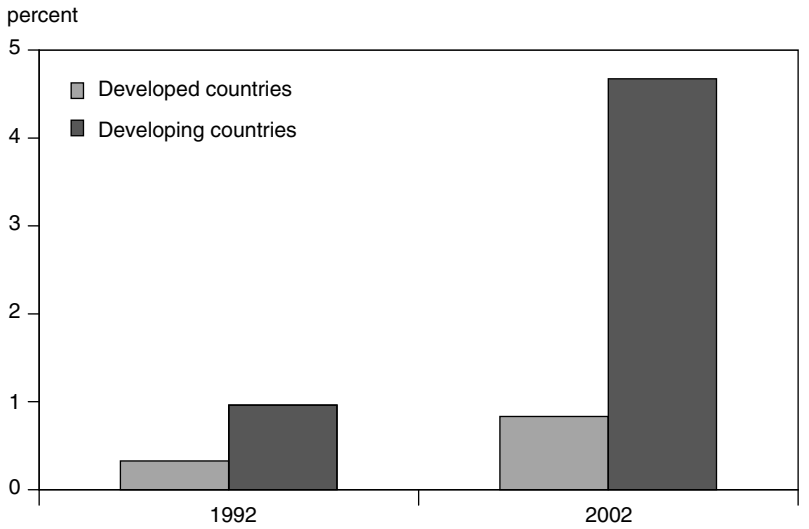
Sources: IMF (2005b); BEA (2005c).

The figure also shows (on the right-hand scale) the US current account deficit expressed as a percentage of the dollar-equivalent GDP of the rest of the world. This rose from 0.28 percent in 1992 to 1.92 percent in 2000 and 2.31 percent in 2004. On this basis, it can be said that *the widening of the US current account deficit after 1992 contributed to an increase in demand for the rest of the world that reached the equivalent of about 2 percent of rest-of-world GDP annually by 2004.*

This positive demand shock for the rest of the world turns out to have been much more powerful for developing countries than for developed countries (figure 6.2). Based on merchandise trade data (IMF 2004d), the trade surplus of the industrial countries with the United States rose from about 0.3 percent of their aggregate GDP in 1992 to about 0.8 percent in 2002. The corresponding trade surplus of developing countries with the United States rose much more, relatively, from 1 percent of their GDP in 1992 to 4.7 percent in 2002.[2]

2. The dollar GDP magnitudes are from the World Bank (2004a). For compatibility with the World Bank GDP data, the IMF country categories for trade data are adjusted by shifting

Figure 6.2 Developed and developing countries' aggregate trade balances with the United States, 1992 and 2002 (percent of their aggregate GDP)



Sources: IMF (2004d); World Bank (2004a).

For some key US trading partners, the increase in demand from a rising trade balance with the United States was especially large. As shown in figure 6.3, Canada's trade surplus with the United States rose from about 1.5 percent of Canadian GDP in 1992 to about 6.5 percent in 2003.[3] For Mexico, the increase was even larger, from −1.5 percent of GDP in 1992 to +6.5 percent in 2003, with most of the increase occurring in a surge in 1995 following the Mexican peso crisis. China's trade surplus with the United States reached the highest share of GDP among the top five trading partners of the United States, at 8.8 percent of China's GDP in 2003 (up from 3.9 percent in 1992).

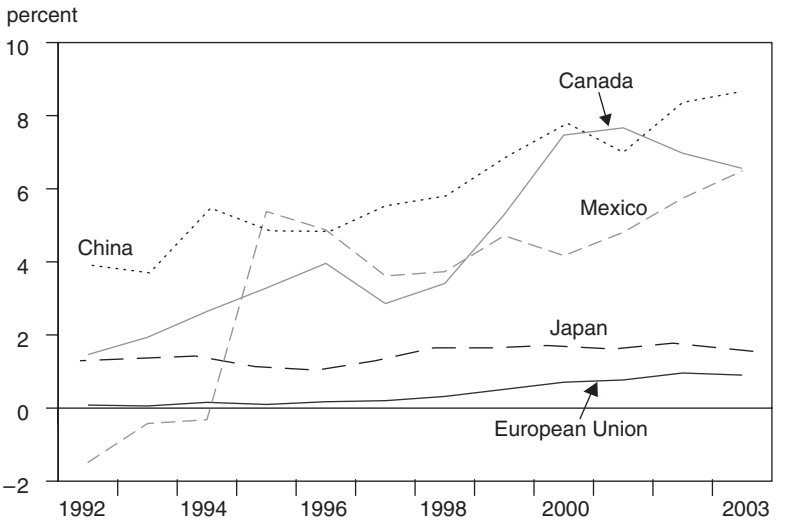
In contrast, the size of the trade surplus with the United States relative to partner GDP remained much more modest for the European Union, rising from near zero in 1992 to 0.9 percent in 2003; and in Japan, where the level was somewhat higher but the increase was smaller (from 1.3 percent of GDP in 1992 to a peak of 1.7 percent in 2000 before easing to 1.5 percent in 2003).

Figure 6.4 shows further detail within the broad pattern of more dramatic increases in the bilateral trade balance with the United States for

Hong Kong, Singapore, and Israel from developing (IMF) to developed (the World Bank's ''high-income'' countries).

3. For figures 6.3 and 6.4, bilateral trade balances are from US International Trade Commission (2005), and dollar GDP data are calculated from the IMF (2004b).

Figure 6.3 Trade balances with the United States relative to partner-country GDP: Five largest US trading partners, 1992–2003 (percent)



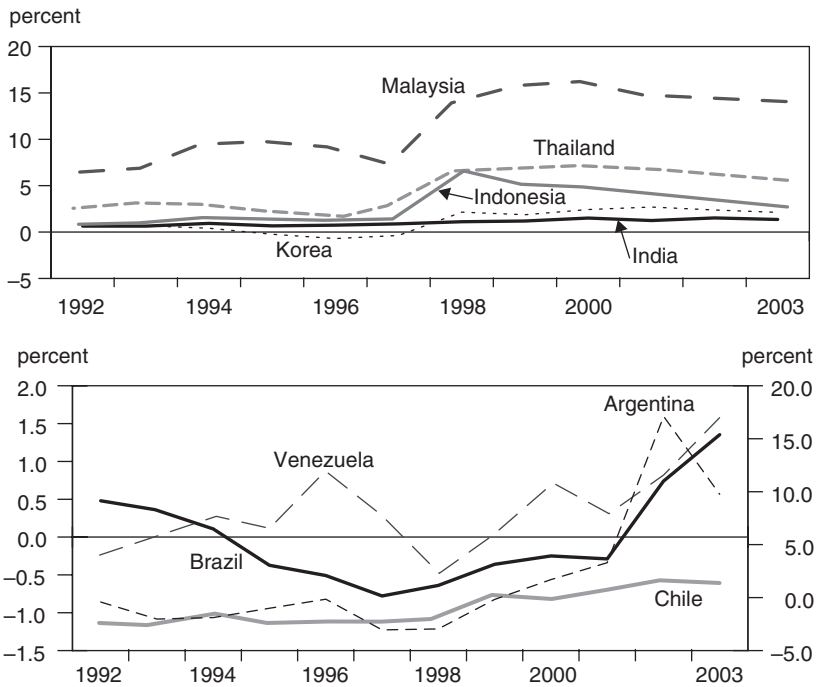
Sources: IMF (2004b); USITC (2005).

developing than for developed countries. The figure also shows a pattern of larger increases for Asian than for Latin American economies.[4] The timing of the Asian increases, moreover, shows the strong influence of external adjustment following the 1997–98 East Asian currency crises.

An obvious question raised by the pattern of large increases in trade balances with the United States is whether the adjustment of the US external imbalance will not only halt but at least partially reverse a strong source of demand contributing to growth in many trading partner countries over the past 12 years. In some cases, the magnitudes of the increases may be misleading for purposes of assessing total demand impact, because the countries in question may have experienced falling trade balances with other countries such that their overall trade balances did not rise by as much as their balances with the United States. Nonetheless, for the developing countries as a whole, the balance on goods and services swung from −1.8 percent of GDP in 1992 to +1.3 percent in 2002 (IMF 2000, 2002). This increase by 3.1 percentage points of GDP is broadly consistent with the 3.7 percentage point increase in their aggregate bilateral trade balances with the United States (figure 6.2).

4. With the remarkable exception of Venezuela, where the bilateral surplus with the United States reached 16 percent of GDP in 2003 and the overall trade surplus reached 20 percent of GDP.

Figure 6.4 Trade balances with the United States relative to partner-country GDP: Selected emerging-market economies, 1992–2003 (percent)



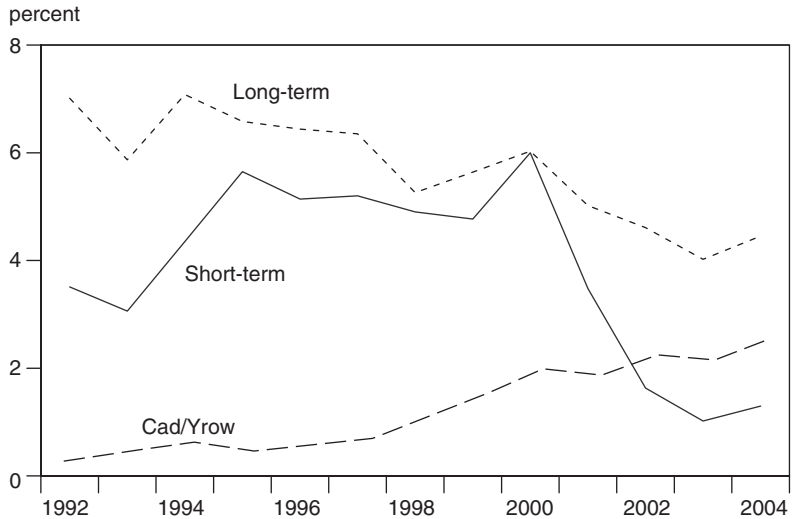
Note: Argentina and Brazil are on the left axis; Chile and Venezuela are on the right axis.
Sources: IMF (2004b); USITC (2005b).

The contribution of the rising US current account deficit to demand in other countries is of course related to the phenomenon of a decline in domestic investment demand in East Asia (excluding China) and Latin America examined in the previous chapter in connection with the ''global saving glut'' hypothesis. Even though the analysis there concluded that the widening of the US current account deficit was mainly the consequence of domestic US economic and policy developments (in particular, falling private saving and the swing from fiscal surplus to large deficit), it is nonetheless true that East Asia and Latin America in particular obtained an important source of demand stimulus from the rising US external deficit at a time when their domestic investment was weakening.

Impact on Interest Rates

Although the widening US current account deficit played an important role in the past decade in stimulating demand for net exports from the

Figure 6.5 Short- and long-term US interest rates and US current account deficit relative to rest-of-world GDP, 1992–2004 (percent)



Cad/Yrow = US current account deficit relative to rest-of-world GDP

Sources: International Monetary Fund (2004b); see figure 6.1.

rest of the world, especially from developing countries, it is conceivable that this effect was offset by a contractionary influence of induced higher world interest rates. In the world capital markets, the rising US demand for financing its external deficit must have exercised some upward pressure on interest rates.

As it turned out, although rising interest rates might have been anticipated if all else had remained equal, all else did *not* remain equal, and instead this period was marked by falling rates. As shown in figure 6.5, the only subperiod when the US current account deficit (relative to rest-of-world GDP) and US interest rates moved notably in the same direction was 1998–2000.[5] This was the height of the domestic US economic boom and stock market bubble, and the modest uptick in interest rates (from about 5 to 6 percent for both short- and long-term rates) reflected more the response of US monetary authorities to domestic economic conditions than any tightening in world capital markets forcing the US government and firms to pay higher rates on borrowing abroad. The plunge in interest rates through 2003, in turn, reflected aggressive monetary and fiscal policy designed to ensure what the International Monetary Fund (IMF) Chief

5. Long-term rates are for the 10-year bond; short-term rates are for three-month treasury bills (IMF 2004b).

Economist Kenneth Rogoff called ''the best recovery that money can buy'' (IMF 2003b).

In short, it would be difficult to make the case that, in the past decade, the call of the United States upon the world capital markets to finance its external deficits has exerted a major contractionary influence abroad, operating through the induced effect on world interest rates. The net effect of the widening US external deficit on foreign demand and growth has thus almost certainly been positive.

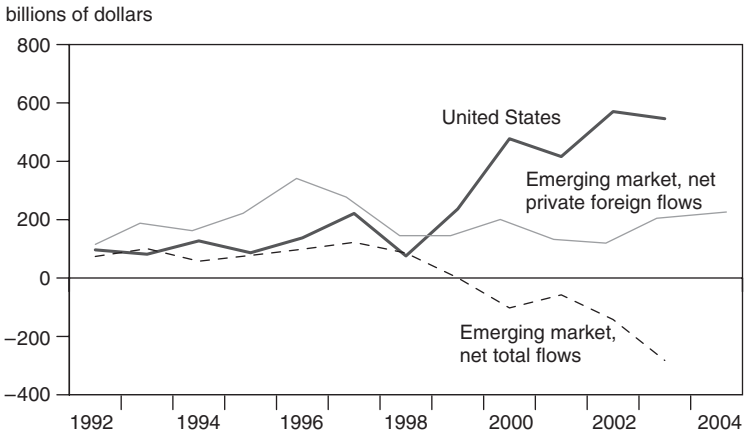
This evaluation does not mean, however, that the net effect would necessarily continue to be benign into the indefinite future if the United States were to not adjust its external deficit. On the contrary, failure of the United States to adjust its external imbalance would progressively raise the probability of a financial crisis involving a sharp rise in the interest rate and a US recession, and hence reduction in demand for imports. The chances of a net adverse effect of continuation of the large US current account deficit on the rest-of-world economy would thus seem much higher in the future than revealed by the favorable (from this standpoint) experience of the past decade.

Emerging-Market Capital Supply and Current Account Performance

The US current account deficit remained in the vicinity of about 1.5 percent of GDP from 1993–97. It was only at the start of 1998 that the period of explosive widening of the deficit arrived, with the deficit rising to about 2½ percent of GDP in 1998 and 4½ percent by 2000 (see figure 3.2 in chapter 3). Undoubtedly, the driving force in the period of rapid increase in the deficit was the strong entry of foreign private capital in response to the economic and stock market boom. However, a contributing factor was the large swing in the external accounts of a number of emerging-market economies adopting sharp external adjustment following crises. These included the East Asian economies after their crises in 1997–98, and Russia, Brazil, and eventually, Argentina. Figures 6.3 and 6.4 above showed in particular the large rise in East Asian trade surpluses with the United States, a reflection of these external adjustments.

Two questions arise about these trends. First, did the surge in the US current account deficit in some way deprive emerging-market economies of capital that otherwise would have flowed to them instead of to the United States? Second, did the enormous increase in reserves of developing countries in this period constitute a heavy economic burden for these countries, somehow imposed on them by an unstable international financial system? The answer here to the first question is no, and to the second, largely no.

Figure 6.6 Net capital flows to the United States and emerging-market economies (total and private foreign), 1992–2004



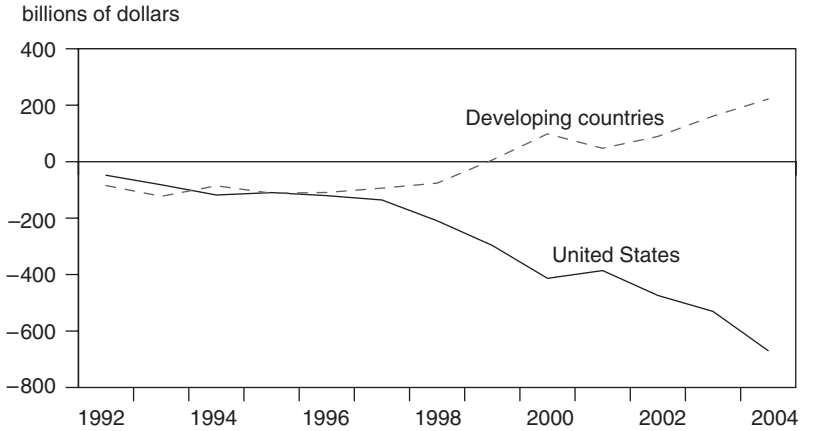
Sources: IMF (2004e); IIF (2004); Cline (2001).

As for the first question, it is certainly true that there was a sharp increase in capital flows to the United States that coincided with a period of weak capital flows to developing countries. As shown in figure 6.6, net capital inflows to the United States were in the range of $100 billion to $200 billion annually over 1994–99, but surged to the range of $400 billion to $600 billion annually over 2000–03 (IMF 2004e, 184–85). In contrast, total net capital inflows to emerging-market countries (defined broadly to include Hong Kong, Israel, Korea, Singapore, and Taiwan) fell from an earlier plateau of about $100 billion annually to about −$300 billion by 2003. If instead the focus is on net private *foreign* capital flows to major emerging-market economies, the bulk of the decline had already occurred by 1998, and flows were relatively flat, in a range of $150 billion to $200 billion during 1999–2004 (Institute of International Finance 2004, Cline 2001). The concept of foreign capital flows excludes capital flows of residents of these countries, and hence does not deduct resident outflows, which in some circumstances (as in the case of Russia) amounted to large capital flight.[6]

Whichever definition of capital flows to developing countries is used, it is evident that there was a substantial scaling back after their peak in 1996–97, just as the phase of much higher capital inflows to the United States began. Yet it would be incorrect to attribute the cutback in flows to emerging markets to a diversion into the United States. The principal cause of the cutback for emerging markets was the reaction to the series

6. Note also that the Institute of International Finance data on flows to major emerging-market economies exclude Hong Kong, Israel, Singapore, and Taiwan.

Figure 6.7 Current account balance, United States and developing countries, 1992–2004 (billions of dollars)



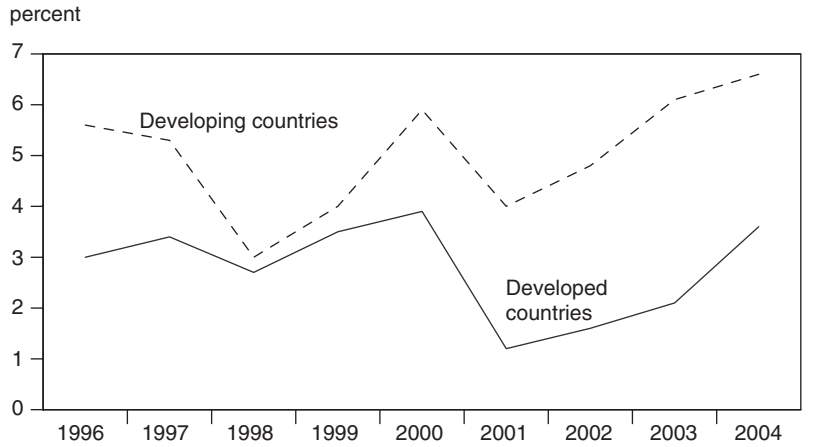
Source: IMF (2004c).

of financial crises beginning with that of East Asia. This reaction included an initial phase of capital market confidence shock and rising risk premiums, followed by a phase of cutbacks in country demand for capital as trade balances surged in response to a sharp depreciation of exchange rates. The true test of whether a siphoning off of global capital by the United States was also a cause of shrinking flows to emerging markets is whether the period was characterized by rising or falling world interest rates. That is, the interest rate is the price of capital. If the dominant influence had been a surge in demand on global capital markets from the rising US trade deficits, the price of capital—the interest rate—would have risen. But as just seen (figure 6.5), at least after 2000, interest rates fell sharply rather than rising. As noted above, if the US deficits were to continue to worsen in the future, the claim on global capital markets could begin to push up interest rates and become a source of displacement of capital flows to developing countries. So far, however, that has not happened.

The counterpart of the trend toward higher net capital inflows into the United States and lower net inflows to developing countries has been a widening US current account deficit accompanied by a shift from deficit into surplus for developing country current account balances in the aggregate. From 1992 through 1997, both the US deficit and the developing country deficit amounted to about $100 billion annually (figure 6.7). But beginning in 1998, the two paths diverged sharply, as the US deficit rose to about $670 billion by 2004 and the developing countries continued a new pattern of a rising current account surplus (which reached about $200 billion).[7]

7. This time, the developing-country aggregate used is from the IMF's (2004c) *World Economic Outlook* grouping, except that Korea has been added back into the developing-country total.

Figure 6.8 GDP growth in developed and developing countries, 1996–2004 (percent)



Source: IMF (2005b).

In principle, the swing of developing countries into current account surplus could be a cause for concern. The current account deficit represents a net inflow of real resources that can contribute to development. A current account surplus indicates instead that the country is transferring real resources abroad. The result could be less availability of imported inputs for production and imported capital equipment for investment. But it turns out that far from undermining growth in developing countries, the shift into current account surplus in recent years has instead been associated with a return to rapid economic growth. As indicated in figure 6.8, after a severe drop with the East Asian crisis in 1998 (which was before the rising current account balance really began), growth in developing countries returned to high levels in 2000–04 (despite a moderate drop in the global recession year of 2001).[8]

The explanation of what otherwise might be a paradox is that, to a major extent, developing-country growth in recent years has been led by exports. Rising exports buoyant enough to bring a swing from current account deficit to surplus have been a leading force in overall GDP growth. So once again, although it might have been possible that a widening US trade deficit would curb developing-country growth by siphoning off global capital, increasing interest rates, and thereby pushing these countries into recession, which would have been a story consistent with rising

The *World Economic Outlook* excludes Hong Kong, Korea, Singapore, and Taiwan from developing countries and places them in the developed country category.

8. Once again, the growth figures are from the IMF's *World Economic Outlook* and hence place Hong Kong, Korea, Singapore, and Taiwan in the developed country category.

current account surpluses because of falling developing-country imports, the outcome was much more favorable. Not only did the larger US claims on global capital not impose high global interest rates, but in addition, the widening US trade deficit became a major source of stimulus for higher growth in developing countries through an export boom, so that the rising current account balances of these countries were a sign of economic strength rather than weakness. Indeed, the principal question has become whether this ''co-dependency'' (as so termed by Mann 2004), in which developing countries (and Japan and Europe) depend heavily on US demand for growth, can continue in light of the need for the United States to adjust its external imbalance.

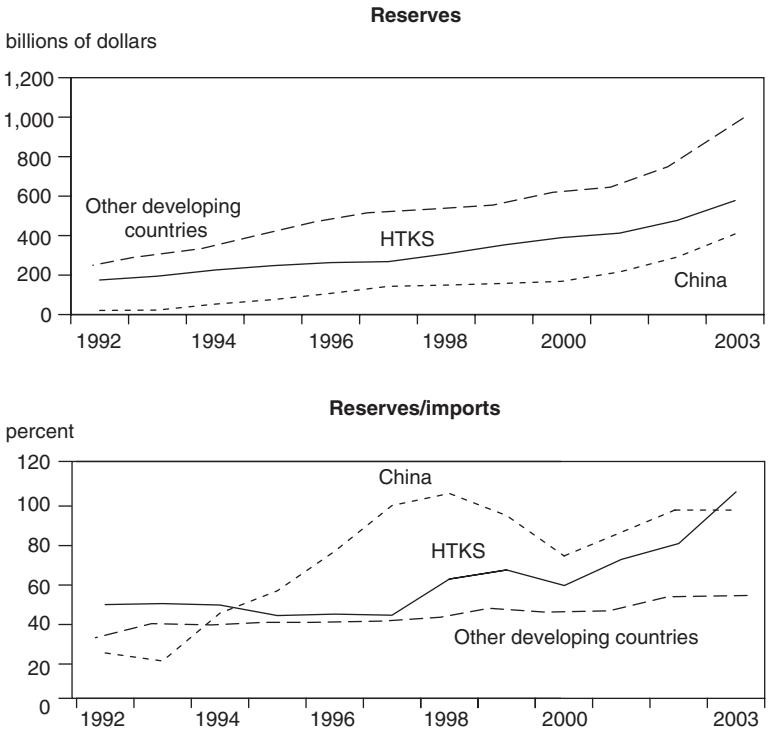
Developing-Country Reserves: Burden or Bonanza?

The pattern of global growth associated with rising trade deficits in the United States and rising trade surpluses (or falling deficits) in emerging-market economies has resulted in a rapid run-up in the reserves of East Asian economies in recent years. As shown in figure 6.9, the reserves of the four newly industrialized economies (NIEs) of Hong Kong, Taiwan, Korea, and Singapore more than doubled from about $270 billion in 1997 to $580 billion in 2003. China's reserves nearly tripled to more than $400 billion during the same period. For all other developing countries as a group, reserves nearly doubled, from about $500 billion to about $1 trillion. Moreover, these increases sharply outpaced the corresponding increases in imports, boosting the ratio of reserves to imports to about 100 percent or more in the four NIEs and China by 2003, and from 41 percent in 1997 to 54 percent by 2003 for all other developing countries.

Stiglitz (2003) has argued that the rise in developing-country reserves is a serious burden for these countries that is imposed by flaws in the international financial system. Focusing on the aftermath of the East Asian financial crisis in 1997–98, he emphasizes that when a developing country adds another $100 million to reserves, and receives perhaps 1.5 percent interest on US treasury bills but must pay perhaps 8 percent in issuing domestic bonds to purchase the dollars, the country experiences a loss ($6.5 million annually, in this example) that could be avoided if the international system had some form of readily available special drawing rights or other financing to provide liquidity in a squeeze.[9] The Stiglitz critique raises the possibility that part of the overall pattern of global development in recent years associated with the widening US trade deficit has been a

9. His examples are more extreme—such as domestic interest rates at 16 percent—but also less representative.

Figure 6.9 Developing-country reserves: Total and relative to imports, 1992–2003



HTKS = Hong Kong, Taiwan, Korea, and Singapore

Source: IMF (2004b).

burden placed on developing countries as a consequence of their associated rise in reserves.

The notion of involuntary recourse to building costly reserves may have been of some relevance at the peak of the East Asian financial crisis. However, by now, the buildup of reserves has far surpassed any magnitude that might be attributed to such externally imposed shocks, and is instead almost certainly a manifestation of a preferred policy of export-led growth. Certainly for East Asia, the ballooning of reserves by now has all of the characteristics of a bonanza rather than a burden.

Perhaps the simplest test of this proposition is whether the rise in reserves is well beyond what might be needed for security against a crisis. As noted, the ratio of reserves to imports has surged. Indeed, for the four NIEs, the nominal dollar value of imports was actually modestly lower by 2003 (at $540 billion) than in 1997 ($600 billion) (IMF 2004b). Surely by now, if the holding of reserves were such a burden, these countries would have begun to spend some of their reserve cache on more imports.

Nor is prudence against the risk of short-term debt runoff the explanation, at least not any more. For example, Korea's short-term external debt in 1997 reached a precariously high level of 315 percent of reserves (Institute of International Finance 1999, 25). But by 2003, much of Korea's short-term debt had been run down, and with higher reserves, the ratio of short-term debt to reserves was only 29.9 percent. Indeed, with rapid repayment of short-term debt after the end-1997 crisis, the ratio had already fallen sharply to 57 percent by end-1999 (Deutsche Bank 2004). So the continued buildup in reserves has reflected an export-led growth strategy and the desire to keep the currency from appreciating too rapidly, not an outwardly imposed need to hold costly reserves.

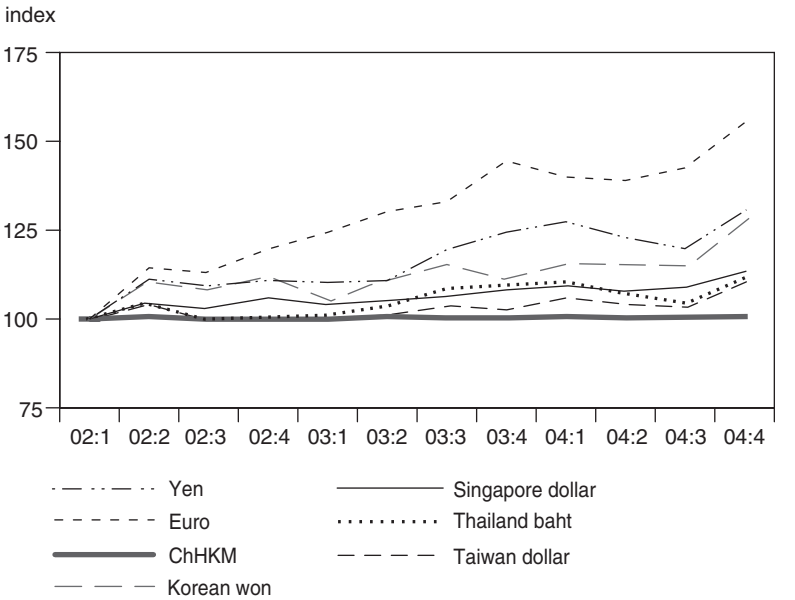
East Asian Exchange Rate Rigidity

Indeed, by now, far from being the victims of international financial imbalances, the East Asian economies are arguably an important part of the cause of these imbalances. The reason is that their exchange rates have remained relatively rigidly fixed against the US dollar at a time when major currencies of industrial countries have appreciated against the dollar in the beginning of a much-needed process of adjustment in the US external imbalance. China, Hong Kong, and Malaysia have all maintained unchanged fixed exchange rates against the dollar for the past several years. Figure 6.10 shows the paths of East Asian currencies against the dollar, along with those of the yen and the euro, against the base period of March 31, 2002 (essentially at the dollar's peak). Whereas the euro rose 55 percent and the yen 30 percent against the dollar (through end-2004), there was no rise for China, Hong Kong, and Malaysia (''ChHKM'' in the figure), and the rise was only about 10 percent for Singapore, Thailand, and Taiwan. Although the Korean won finally rose to close to the yen's total appreciation by end-2004, its rise was substantially delayed.

Kamin (2005) convincingly argues that East Asian governments (excluding China) intervened to keep their exchange rates attractive for export expansion in the years after the 1997–98 East Asian financial crisis in order to maintain demand in the face of a collapse in domestic investment. Investment fell because it had been excessive and misallocated before the crisis, firms sought to correct excessive precrisis debt levels, and domestic banking systems nearly collapsed. Kamin draws the corresponding inference that once domestic investment demand returns to more normal levels, the monetary authorities will desist from intervention to keep exchange rates highly competitive, and indeed will need to do so in order to prevent the development of inflationary pressures.

On July 21, 2005, China announced that it was shifting to a managed floating exchange rate regime, and Malaysia also announced it had ended

Figure 6.10 Value of selected currencies against the dollar, 2002:1–2004:4 (end-period, 2002:1 = 100)



ChHKM = Chinese yuan, Hong Kong dollar, and Malaysian ringgit

Source: IMF (2005a).

its fixed rate against the dollar (although Hong Kong maintained its fixed peg to the dollar). China revalued the yuan 2.1 percent against the dollar and stated that it would henceforth manage the currency against a basket of other currencies, with weights not announced. It also indicated the maximum fluctuation against the dollar would be limited to $+/-0.3$ percent daily. Although the end of the long-standing fixed rate regime for the Chinese currency was potentially extremely important, most observers doubted that the float would be managed in a manner that would permit the yuan to rise by more than a few percentage points against the dollar within the next several months.[10]

Despite the new shift to a managed float, China's exchange rate policy may continue to be a serious obstacle to a return to less intervention (and hence currency appreciation) in the rest of East Asia. Goldstein (2004) had called for an appreciation of the Chinese currency against the dollar by 15 to 25 percent (far above the revaluation adopted), and a new peg set not just against the dollar but against a basket of currencies (as China decided to do). It is highly likely that without a much larger appreciation

10. "China Revalues the Renminbi," *Financial Times*, July 21, 2005, 1.

of the Chinese renminbi, the other main fixed or quasi-fixed exchange rates in the region (the Hong Kong dollar, Taiwan dollar, and possibly still the Malaysian ringgit) will remain essentially unchanged against the dollar, and that even the somewhat more flexible exchange rates of several other countries in the region (such as the Thai baht and Singapore dollar) will change little against the dollar because of concerns over loss of competitiveness against China. More exchange rate flexibility and significant appreciation of the East Asian currencies against the dollar will almost certainly have to be part of the solution to the problem of achieving a smooth US adjustment of its external imbalance.

It is a fair question to ask, however, whether an abrupt end to Chinese and East Asian currency intervention might not be a cure that at least temporarily aggravates rather than heals the disease. The vulnerability of US interest rates to a sudden cessation of foreign official purchases of US Treasury obligations is discussed in chapter 5. The basic answer to this question is that the size of any such shock would likely be limited. The appropriate adjustment would involve a parallel shift toward fiscal adjustment in the United States, which would tend to reduce interest rates and ameliorate or more than offset any upward pressure from an end to foreign official purchases of US government bonds. In any event, it would seem misguided to seek to perpetuate undervalued East Asian currencies, and hence prolong US external imbalances, for fear of interest rate pressures resulting from the correction of those currencies.

Achieving Global Adjustment

Lessons from the 1980s

The analysis above suggests that the widening of the US current account deficit over the past dozen years has provided an ongoing stimulus to demand for the rest of the world. Looking forward, a central question is whether and how the United States can achieve external adjustment without causing contractionary pressure on the world economy by shifting from creating to reducing demand for goods and services from the rest of the world. A useful place to start is to review what happened to the world economy the last time the United States went through a major balance of payments adjustment cycle, in the late 1980s.[11]

The United States swung into large current account deficit in the mid-1980s as a consequence of a strong dollar, high domestic growth, and a move into large fiscal deficits. The Reagan tax cuts stimulated the economy but left fiscal accounts much eroded. The federal budget deficit widened

11. For an analysis of that episode, see Cline (1994, chapter 2).

from 2.6 percent of GDP in 1981 to 5.1 percent in 1985 (Council of Economic Advisers 2004). The Treasury bill rate had peaked at 14.4 percent in 1981 as the Federal Reserve Board under Paul Volcker applied tight monetary policy to combat the inflation rate that reached nearly 14 percent in 1980. Monetary policy eased in response to the deep recession of 1982, but after falling to 8.6 percent by 1983, the interest rate rose to 9.4 percent in 1984 (when inflation edged up to 4.3 percent from its 3.2 percent pace in 1983) (IMF 2004b). The high US interest rate attracted capital from abroad, boosting demand for the dollar and raising the real exchange rate by 41 percent from its 1978 annual average to its 1985 average.[12] Real growth surged to 7 percent in 1984. With a strong income effect on imports, a strong price effect from the exchange rate, and a wide underlying fiscal gap, the external current account deficit widened rapidly. The deficit reached a peak of 3.4 percent of GDP in 1987, up from nearly zero in 1981–82.

The adjustment process in the 1980s episode included a coordinated effort by the Group of Seven (G-7) governments to correct the overvaluation of the dollar, notably through the September 1985 Plaza Agreement of G-7 finance ministers. Joint intervention in the exchange market helped ensure continuation of the nascent reduction in the value of the dollar begun earlier that year. The dollar fell in real terms by about 13 percent in 1986, another 8 percent in 1987, and another 7 percent in 1988. Concern that the dollar was overshooting downward led to the G-7 Louvre Accord in February 1987 calling for intervention to support the dollar, but the dollar continued to decline (for example, by 36 percent against the deutsche mark from end-1985 to end-1987).

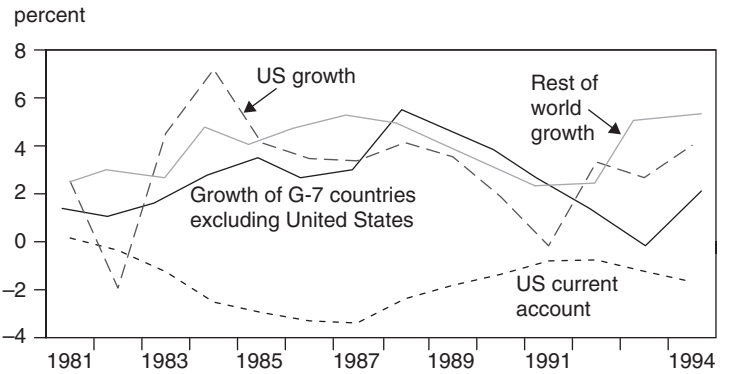
The major reversal of the dollar was not accompanied by forceful US fiscal adjustment, as the 1986 fiscal reform was broadly revenue-neutral. Nonetheless, the US fiscal deficit narrowed to 3.2 percent of GDP by 1987 and 2.8 percent by 1989 (Council of Economic Advisers 2004). After the usual two-year lag from exchange rate signal to trade performance, the US current account deficit peaked in 1987 and then significantly narrowed by 1989, reflecting a response to the correction in the dollar and the improving fiscal accounts. Even so, it was not until the US economy slowed in 1990 and went into recession in 1991 that the current account deficit largely disappeared, suggesting that although the external adjustment process ''worked'' for the United States in the 1980s episode, it was less than fully satisfactory.

Figure 6.11 shows the course of the US current account deficit during this episode.[13] The cycle lasted a decade, with the initial period of wider

12. Or from 86.7 to 122.4 on the Federal Reserve's broad real exchange rate index (March 1973 = 100). See Federal Reserve (2005b).

13. The data for 1991 have been adjusted to place the current account at a deficit of $48 billion instead of the recorded surplus of $3.7 billion, to remove the aberrational influence of the large payments received from the Gulf states in support of the 1990 Gulf War. (US

Figure 6.11 US current account (percent of GDP) **and growth in the United States, other G-7 nations, and the rest of the world** (percent)**, 1981–94**



Source: See text.

deficits spread over six years and the reversal accomplished during the subsequent four years. The initial sharp decline in the current account coincided with extraordinary domestic growth (1984) and the endpoint of return to near balance coincided with recession (1991).

Figure 6.11 also reports growth in the major industrial countries (excluding the United States) as well as the rest of the world.[14] Although one should be extremely cautious in applying ''ocular econometrics,'' there is an uncanny mirror image between the growth rate for the rest-of-world category and the size of the US current account deficit in this period. As the US current account deficit narrowed from 3.4 percent of GDP in 1987 to 0.8 percent in 1991–92, rest-of-world growth (excluding the G-7) eased from 5.2 to 2.5 percent. Average growth in the G-7 nations excluding the United States fell from 5.3 percent in 1988 to 2.2 percent in 1991. As reunification in Germany spurred higher interest rates and spillover recession in Europe, and as Japan entered the postbubble period of the early 1990s, growth in those six other G-7 nations fell to zero by 1993 before recovering moderately.

At the most aggregate level, then, the 1980s episode of US external adjustment showed successful correction of the dollar and external deficit, and this process avoided the severe ''hard landing'' feared by some at the time (Marris 1985). Even so, the extent of the correction was ''helped'' by a mild US recession, and the evidence at best shows a mixed perfor-

government grants reported in the balance of payments swung from net outflows of $10.4 billion in 1990 to net inflows of $29 billion in 1991 before returning to −$16.3 billion in 1992; BEA 2004c.)

14. G-7 growth (excluding the United States) and rest-of-world growth rates are calculated from the IMF (2004f).

mance in terms of the impact of the US adjustment on the rest of the world. Of course, many other influences played a role. These notably included an increase in average oil prices by about 30 percent in 1990 when Iraq invaded Kuwait, German reunification, the European exchange rate mechanism crisis that saw forced devaluations by Italy and the United Kingdom, and the collapse of the bubble economy in Japan.[15] Nonetheless, the growth record abroad during the correction of the US external imbalance in the late 1980s suggests, at the least, that policymakers will need to be alert to adverse growth effects internationally in the next few years as the United States experiences the corrective phase of the present balance of payments cycle.

A Blueprint for International Adjustment

Chapter 3 suggests that it would require a real appreciation of trade-weighted foreign currencies against the dollar by 21 percent from the January–May 2005 level, combined with an acceleration of foreign growth by 0.75 of a percentage point annually for three years, to reduce the baseline current account deficit from about 7½ percent of GDP by 2010 to about 3 percent.[16] Each 10 percent in real foreign appreciation cuts about 1.6 percent of GDP off the external deficit by the fifth year (see table 3.5 in chapter 3). Because the rest of the world will have to sustain growth in the face of lower US demand, it is probably unrealistic to count on much help for US adjustment from greater growth abroad than in the baseline. At the same time, it may prove unrealistic to assume that the United States can fully maintain potential growth (set at 3.5 percent in chapter 3) and at the same time achieve the desired external adjustment. The 21 percent real foreign appreciation against the dollar from the recent level thus remains a useful benchmark for examining the extent of further currency realignments required for US external adjustment.

The Federal Reserve's broad real exchange rate index for the dollar stood at an average of 96.6 for January through May 15, 2005.[17] Table 6.1 shows the weight of key individual currencies in the index (Federal Reserve Board 2005a), along with the real appreciation of each country in the index against the dollar from the year-average for 2002 to the average for March 2005, the midpoint of the base period for the projections

15. There are grounds for arguing that Japan's experience was in part attributable to the US adjustment process, as the large monetary expansion in Japan that contributed to the asset price bubble reflected the effort to prop up the dollar against the yen by 1987 and after.

16. The foreign appreciation in the adjustment scenario is from two annual tranches of 10 percent, for a total of 21 percent.

17. The base used in chapter 3. For the full first five months of 2005, the average was 96.88. See Federal Reserve Board (2005b).

Table 6.1 Real appreciation from 2002 average to March 2005
(percent)

Country	Weight for United States		Real appreciation against	
	Fed	SSB	Dollar	All countries
Argentina	0.44	0.35	23.1	3.2
Australia	1.25	1.17	44.6	25.5
Brazil	1.79	1.69	29.3	11.2
Canada	16.43	18.54	27.5	21.8
Chile	0.49	0.38	15.3	−1.0
China	11.35	11.09	0.7	−10.4
Colombia	0.41	0.56	16.8	5.3
Czech Republic	—	0.14	41.4	6.0
Denmark	—	0.34	37.3	6.2
Egypt	—	0.20	−12.2	−27.9
Euro area	18.80	17.57	37.5	15.4
Hong Kong	2.33	1.04	−8.8	−16.4
Hungary	—	0.22	49.2	14.3
India	1.14	1.01	15.6	−1.6
Indonesia	0.95	0.75	10.7	−2.6
Israel	1.00	1.00	2.7	−12.9
Japan	10.58	9.80	10.7	−1.0
Korea	3.86	3.46	27.3	15.4
Malaysia	2.24	1.87	−2.3	−12.0
Mexico	10.04	12.13	−8.3	−13.0
New Zealand	—	0.27	56.1	29.9
Norway	—	0.44	24.9	−3.6
Philippines	1.06	0.82	2.3	−6.8
Poland	—	0.18	33.0	−0.3
Russia	0.74	0.71	46.1	15.7
Saudi Arabia	0.61	1.20	−5.1	−18.9
Singapore	2.12	1.45	4.9	−5.2
South Africa	—	0.46	82.0	50.4
Sweden	1.16	0.85	35.4	5.8
Switzerland	1.44	0.98	27.4	−0.3
Taiwan	2.87	2.15	7.3	−2.3
Thailand	1.43	1.21	10.8	−0.9
Turkey	—	0.43	40.4	9.5
United Kingdom	5.17	4.26	28.5	2.0
Venezuela	0.30	1.31	−0.6	−7.3
Total	100.00	100.00		
Fed			16.3	
SSB			16.4	

— = not included

Sources: Federal Reserve Board (Fed) (2005a); Salomon Smith Barney (SSB) and Citigroup (2001); IMF (2005a).

in chapter 3. The (geometrically) weighted sum indicates a real appreciation of foreign currencies against the dollar by 16.3 percent over this period.[18] The table also shows US weights for a larger set of countries, based on estimates by Salomon Smith Barney (2001) and Citigroup. The two weighting schemes show virtually the same weighted foreign appreciation against the dollar.

Table 6.1 also reports the overall trade-weighted real effective appreciation of each of the currencies in question, based on the Salomon Smith Barney weights for the 36 countries listed in the table. These weights are based on both bilateral trade and multilateral trade, with the latter incorporated to capture the influence of competition in third-country markets.[19]

An important pattern evident in the table is that for most countries, the extent of overall real appreciation was far smaller than that of real appreciation against the dollar. For example, Sweden appreciated in real terms by 35.4 percent against the dollar, but because of its high proportion of trade with European countries that also appreciated sharply against the dollar, its currency rose only 5.8 percent on an overall real trade-weighted basis. Even so, for the euro area, the overall real appreciation was sizable, at 15.4 percent. This indicates that the real appreciation of the euro to date cannot be dismissed lightly on grounds that the euro area's trade with the United States alone is relatively small. Indeed, it turns out that in the Salomon Smith Barney weights, the US weight for the euro area is almost identical to the euro area weight for the United States.[20] On this basis, it can be said that changes in the dollar-euro rate are just as important for the United States as for the euro area, and represent about one-sixth of total exchange rate influences for both sides.

A key pattern is that most of the East Asian countries actually experienced real depreciations of their currencies on a trade-weighted basis, as they ''rode the dollar downward'' because of their pegs to it. China depreciated by 10.4 percent in real effective terms and Hong Kong by

18. The corresponding foreign appreciation in the Federal Reserve's broad index itself is 15.6 percent. The difference likely reflects different procedures for projecting consumer price index inflation for recent months with official data not yet available, as well as the fact that the estimates of table 6.1 apply the 2005 weights (essentially a Paasche index with end-period weights), whereas the Federal Reserve uses different weights for each year.

19. The underlying Salomon Smith Barney weights are for 49 countries. The analysis here normalizes by expanding proportionately the weights of each of the 36 countries considered so that they add up to 100 percent. The 36 countries constitute a median of 98 percent of the total trade weights for the 49 countries, and the coverage is 96 percent at the lowest quartile, so normalization to a 36-country set should be relatively reliable.

20. All trade shares for the euro area exclude intratrade among euro-area countries. The weight of the United States in euro-area trade, according to the normalized Salomon Smith Barney data, is 17.2 percent. The weight of the euro area in the trade weights for the United States is 17.57 percent (table 6.1).

16.4 percent. Malaysia and the Philippines depreciated in real effective terms by about 12 and 7 percent respectively. For its part, Japan experienced a slight overall real depreciation (−1 percent change), and even its appreciation against the dollar was modest (10.7 percent). Korea is a somewhat surprising exception to the East Asian pattern, as its real effective exchange rate appreciated by about 15 percent. Greater real appreciation of Korea's currency than that of Japan, despite a comparable nominal appreciation against the dollar, reflects the lower rate of inflation in Japan than in Korea.

Appendix 6A develops a method for identifying a set of ''optimal'' exchange rate realignments for the purposes of bringing the US current account deficit into a range about 3 percent of GDP by 2010. As set forth in chapter 5, this range would seem to be a reasonable benchmark for a sustainable current account deficit for the United States. In the analysis in the appendix, the idea is to specify the target overall trade-weighted rise in foreign currencies against the dollar needed for this purpose, and then to calculate the composition of currency changes on the basis of economically sensible criteria. The first criterion is that the resulting set of changes in individual-country current account balances should conform as closely as possible to a specified pattern. For purposes of the estimation here, this pattern is determined as a uniform proportionate reduction in the current account surpluses of countries with current account surpluses of 1 percent of GDP or larger. Modest reductions in current account balances are also specified for countries with smaller surpluses or with deficits.[21] It turns out that the proportion required for this approach to generate foreign reductions in current account balances compatible with the target rise in the US balance is a 40 percent cut in the surpluses of countries with current account surpluses of 1 percent of GDP or more.

There are two exceptions. First, the target for Australia is set at zero change, because its current account is already in large deficit. Second, following Williamson (2004), the target for the euro area is also set differently. Williamson called for cutting the euro-area current account surplus to zero, representing a reduction of about $70 billion against the 2004 outcome predicted by the IMF at the time. The actual outcome for 2004 was a surplus only about half as large (table 6A.1). Because of the large economic size of the euro area, its substantial participation in the foreign counterpart of US external adjustment will be especially important. The analysis here maintains the same absolute adjustment as suggested by Williamson, and hence sets the target change in the euro-area current account at −0.7 percent of GDP, or from +0.4 percent to −0.3 percent.

21. A fixed 0.35 percent of GDP reduction in the current account balance is specified for these countries.

Appendix 6A sets forth a simple method relating expected change in current account balance for each country to the overall (trade-weighted) real appreciation of the country's currency.

As discussed in appendix 6B, Williamson suggests current account adjustment targets of −1.5 percent of GDP for several key countries and regions (China, Japan, the four NIEs, other Asian developing countries, and the Middle East). The approach used here yields about the same adjustments as a percent of GDP for China (−1.7 percent), Japan (−1.5 percent), Korea (−1.6 percent), and the Philippines (−1.8 percent). However, the target adjustments of this study are considerably larger for Singapore (about −10 percent of GDP), Malaysia (−5 percent), and Hong Kong (−4 percent), and for the oil economies (−8 percent of GDP for Saudi Arabia, −5 percent for Venezuela, and −4 percent for Russia). The issue is whether countries with extraordinarily high current account surpluses (such as Singapore's 26 percent of GDP) should be expected to pursue larger adjustments; the judgment here is that they should.[22]

Except for the super-surplus countries, the current account adjustments assumed here are broadly comparable to those assumed by Williamson. Correspondingly, they should also generally conform to his diagnosis that the resulting magnitudes of demand change should be manageable. Even so, as discussed in appendix 6B, if the terms-of-trade effect is taken into account, the real demand changes could be about 1.5 times as high as the nominal changes. At the upper end of Williamson's range of adjustments (1.5 percent of GDP nominal), real demand contraction would be about 2.25 percent of GDP. If spread over three years, this implies that the adjustment process could trim real demand growth by approximately 0.7 percent of GDP per year from rates otherwise attained by Japan, the NIEs, China, and other Asian nations. The impact would be much larger for some of the super-surplus countries if instead their nominal adjustments were on the scale suggested in this study (e.g., a range of 4 to 5 percent of GDP).

The second criterion for the optimal realignment exercise is that although the final set of exchange rate changes can deviate from the amounts that would generate the target set of current account changes, a weighted function of the deviations should be minimized subject to achieving the target real depreciation of the dollar.[23]

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22. This is also the judgment for oil economies if one expects the price of a barrel of oil to remain in the vicinity of $50, as assumed in chapter 3, so that the high recent surpluses are seen as persistent rather than transitory in the absence of special adjustment measures.

23. Specifically, the sum of GDP-weighted squared deviations of change in the current account as a percent of GDP from the target list of changes as a percent of GDP is chosen as the ''objective function'' to be minimized. Note further that the real exchange rate for Hong Kong against the US dollar is constrained to rise by no more than 10 percentage points above the increase for China, given the integration of the two economies. As a result,

Table 6.2 reports the results of this optimization exercise. The target overall real appreciation against the dollar on a trade-weighted basis is set at 39 percent from the 2002 average real level. This total appreciation is based on the amount that actually occurred from the 2002 annual average to the January–May 15, 2005 base used in chapter 3, plus another 21 percent for the effect of the favorable adjustment scenario in table 3.4 in chapter 3 (i.e., $1.151 \times 1.21 = 1.39$).

The table also reports the change in the trade-weighted real exchange rate of each country in the optimal solution. Once again it is evident that these appreciations are far smaller than the bilateral appreciations against the dollar. For the euro area, the optimal real appreciation against the dollar is 44.4 percent from the 2002 level, but the optimal trade-weighted real appreciation is only 7.3 percent.[24] For Japan, the bilateral real appreciation is about 53 percent and the trade-weighted appreciation is about 17 percent. The relatively high overall real appreciation found optimal for Japan reflects the relatively high ratio of its current account surplus to GDP (3.7 percent of GDP surplus in 2004) combined with its relatively low parameter relating change in the current account as a percent of GDP to change in the real exchange rate. As discussed in appendix 6A, this parameter is smaller for more closed economies.

Table 6.2 also shows the extent of real appreciation of each currency against the dollar that occurred from the average for 2002 to the average for March 2005, the midpoint of the base used for the adjustment scenarios of chapter 3. Correspondingly, the table also indicates the additional amount of real appreciation still to be completed to reach the optimal amount. The result is particularly informative for the euro. The euro is found to need an additional real appreciation of only 5 percent against the dollar from the March 2005 level to reach the level indicated in the optimal realignment calculation.[25] Moreover, with general realignment of other currencies, there would be a 7 percent trade-weighted real depreciation rather than appreciation of the euro from the March 2005 level, as the currency once again would become more competitive against those that have lagged behind in the correction against the dollar. The findings

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Hong Kong is omitted from the objective function. The minimization problem is resolved using the SOLVER function in an Excel spreadsheet.

24. Note, moreover, that the optimal realignment exercise probably overstates somewhat the real effective appreciation for the euro area, because the analysis is implemented using the 26 countries in the Federal Reserve broad index plus the United States, rather than the 36 countries in the Salomon Smith Barney weights of table 6.1. Several omitted Eastern European countries are likely to keep their exchange rates moving closely with the euro, suggesting a somewhat smaller real effective appreciation for the euro area if those partners were included.

25. Note, however, that the March exchange rate of 1.315 $/€ was considerably stronger than the level of 1.206 on July 15, 2005 as this study went to press. Against the latter level, the optimal rise of the euro would be 14.5 percent.

Table 6.2 Optimal exchange rate realignments for US external adjustment[a] (percent)

Country	Real appreciation from 2002 average: Optimal — Versus dollar	Optimal — Overall[b]	Actual to March 2005 — Versus dollar	Actual to March 2005 — Overall[b]	Remaining real appreciation to reach optimal amount — Versus dollar	Remaining real appreciation to reach optimal amount — Overall[b]
Argentina	40.7	5.2	23.1	3.2	14.3	1.9
Australia	44.2	2.6	44.6	25.5	−0.3	−18.3
Brazil	39.0	7.2	29.3	11.2	7.5	−3.7
Canada	16.9	4.6	27.5	21.8	−8.4	−14.1
Chile	38.3	3.4	15.3	−1.0	19.9	4.5
China	45.9	8.1	0.7	−10.4	44.8	20.6
Colombia	25.7	3.4	16.8	5.3	7.6	−1.8
Euro area	44.4	7.3	37.5	15.4	5.0	−7.0
Hong Kong	55.9	11.1	−8.8	−16.4	70.9	33.0
India	44.5	4.9	15.6	−1.6	24.9	6.6
Indonesia	49.8	5.8	10.7	−2.6	35.4	8.6
Israel	32.9	2.5	2.7	−12.9	29.5	17.7
Japan	53.3	16.7	10.7	−1.0	38.5	17.9
Korea	45.6	6.4	27.3	15.4	14.4	−7.8
Malaysia	55.7	13.3	−2.3	−12.0	59.4	28.8
Mexico	13.6	2.1	−8.3	−13.0	23.9	17.3
Philippines	47.3	6.3	2.3	−6.8	44.0	14.1
Russia	55.6	14.5	46.1	15.7	6.5	−1.0
Saudi Arabia	60.7	22.2	−5.1	−18.9	69.4	50.6
Singapore	87.5	46.2	4.9	−5.2	78.7	54.2
Sweden	49.9	10.2	35.4	5.8	10.7	4.1
Switzerland	55.7	14.9	27.4	−0.3	22.2	15.2
Taiwan	47.7	7.1	7.3	−2.3	37.7	9.6
Thailand	47.2	5.2	10.8	−0.9	32.8	6.2
United Kingdom	42.2	3.1	28.5	2.0	10.7	1.1
Venezuela	31.0	17.7	−0.6	−7.3	31.7	27.0

a. For weighted average real appreciation against dollar by 39 percent.
b. Trade weighted.

are qualitatively quite different for Japan, where real bilateral appreciation against the dollar amounted to only about 11 percent from 2002 to March 2005. This leaves a large additional 38 percent real appreciation of the yen to be completed to reach the optimal realignment. This would mean a further 18 percent real appreciation of the yen on a trade-weighted basis.

The broad pattern in table 6.2 is that the East Asian economies in particular have a long way to go in real appreciation of their currencies against the dollar to reach optimal realignment, but that once again the extent of their corresponding trade-weighted appreciations would be much smaller. For China, the optimal realignment calls for a 46 percent real appreciation against the dollar from the 2002 base, and almost none has occurred so far. Even so, after optimal realignment, the Chinese currency would rise by less than half as much (21 percent) from its March 2005 level on a trade-weighted basis. Korea, in contrast, has gone much further, and with the same target real appreciation against the 2002 base (46 percent) had already carried out well more than half by March 2005. This would leave an additional 14 percent real appreciation against the dollar to be completed, but there would actually be a real depreciation of the Korean won on a trade-weighted basis (by 8 percent) because the size of the remaining correction to be made is much larger for China and most of the other currencies in the region.

The results indicate a sizable real appreciation of the Mexican peso against the dollar, because even though its target total from 2002 is moderate (at 13.6 percent), the currency has depreciated significantly in the interim, meaning that the rise would be a substantial 24 percent against the March 2005 level against the dollar and 17 percent on a trade-weighted basis.[26]

The results for Canada also warrant special mention. The optimal realignment exercise finds that the Canadian currency has already moved by more than enough to contribute the target change in Canada's current account. The Canadian dollar appreciated in real terms by about 28 percent from 2002 to March 2005, which meant a real effective (trade-weighted) appreciation of about 22 percent. If the parameter relating current account change to real exchange rate change is correct, however, the size of the exchange rate change needed to reduce the current account from the 2.6 percent of GDP surplus in 2004 to 1.6 percent (40 percent cut) would be

26. Although this diagnosis contradicts the Bénassy-Quéré et al. (2004) result discussed in appendix 6B, it simply involves compatibility with an overall optimization that widens the current account deficit by a modest 0.35 percent of GDP. Even so, this result for Mexico does warrant caution. Note further that for the special case of Mexico, the outcome is constrained to limit the ratio of the calculated change in the current account to the target change to no more than 1.5. In the optimal solution, this constraint is binding, and Mexico's current account deficit rises from 1.3 percent of GDP to 1.82 percent rather than to just 1.65 percent.

smaller (about 17 percent bilateral, 5 percent trade-weighted), allowing some reversal of the Canadian appreciation (by about 8 percent bilateral, 14 percent trade-weighted) rather than requiring further appreciation.

As discussed in appendix 6B, Bénassy-Quéré et al. (2004) find a surprisingly similar profile of desired currency realignments against the dollar for many of the main economies, even though they use an extremely different methodology. Thus, when updated to end-2004, their results indicate needed realignments that are especially close to the estimates reported in table 6.2 for China (46 percent currency rise against the dollar versus 45 percent), Korea (19 versus 14 percent), the euro (-1 versus $+5$ percent), Brazil (5 versus 7 percent), and India (24 versus 25 percent). Their estimates are also broadly similar to those here for Australia (-9 versus -0.3 percent) and Canada (0.5 versus -8.4 percent). Their results are in the same direction but considerably more moderate in magnitude for Japan (22 versus 38 percent) and Indonesia (21 versus 35 percent).[27]

The optimization exercise sets as an absolute constraint that the various currency realignments must add up to a 39 percent real foreign *appreciation* against the dollar on a US trade-weighted basis (28 percent *depreciation* of the dollar) from the annual 2002 level. The resulting deviation of changes in current account balances for other countries from the set of targets is then minimized, but these deviations nonetheless remain significant. The median ratio of the optimal change of the current account balance (as a percent of GDP) to the target change is 1.3. This means that the optimization exercise generates larger reductions in foreign current account positions in the aggregate than would be required to offset the target increase in the US current account balance. This divergence implies either that the parameters chosen to state the responsiveness of the current account to the real exchange rate are too high for the 26 countries in the exercise excluding the United States, or that the responsiveness of the US current account to real depreciation of the dollar should be greater than estimated in the model of chapter 3. The likelihood is that the foreign response parameters tend to be overstated. However, for purposes of obtaining the optimal pattern of currency realignments, all that is needed is for this overstatement to be approximately the same for all of the countries in question. Even so, the optimal realignment results found here should be interpreted as being more robust in terms of overall patterns than for individual countries.

The Stakes for Developing Countries

Achieving a smooth external adjustment instead of a hard landing for the US economy is of great importance for developing countries. Their

27. The divergence between their estimates and those here is considerably larger for the United Kingdom (-7 versus $+11$ percent) and especially Mexico (-12 versus $+24$ percent) and Argentina (80 versus 14 percent).

export growth will of course tend to be curbed by deceleration in the growth of US imports and acceleration in growth of US exports. But their cumulative export growth over the medium term would likely be even lower if an additional few years of unsustainably high growth of exports to the US market were to be followed by a sharp fall in these exports because of a plunge in the dollar and recession in the US economy.

US external adjustment does imply some shift in developing-country demand from exports toward domestic investment and consumption. Such a shift would be desirable in terms of global development patterns. As shown in table 6A.1, at present, there is a distorted pattern of global trade and payments in which many developing countries are running current account surpluses rather than deficits. These include the oil-exporting developing countries, the East Asian developing countries, India, and the major Latin American countries (excluding Colombia and Mexico). This is a pattern of perverse resource flows from developing countries to the largest rich country in the world.

The developing countries will also stand to gain from a smooth US external adjustment because it is more likely to keep global interest rates moderate than would be the case with a hard landing. A severe break in confidence in the dollar, after additional years of ever-widening external deficits, would exert upward pressure on US interest rates as foreign capital inflows began to decline, and interest rates could also rise from a decision by the Federal Reserve that tighter monetary policy was required to weigh against the inflationary impact of a sharp decline in the dollar. Inflationary pressure would arise from the pass-through of the exchange rate change to imports, which account for 15 percent of GDP (goods and services), even with incomplete pass-through. Thus, suppose that as a consequence of delay in adjustment, the eventual exchange rate correction required a 60 percent rise in the price of foreign exchange (37.5 percent depreciation of the dollar). Such an exchange rate change, combined with a pass-through ratio of 0.5, would raise import prices by 30 percent, contributing a 4.5 percentage point (30×0.15) increase to the consumer price index. This would be a substantial inflationary shock if concentrated within a year or two. Inflationary pressure would be further aggravated as US supply began to be channeled toward exports and as the supply of foreign goods began to decline in response to the exchange rate change.

Delayed adjustment and an eventual hard landing would mean that a US recession would be part of the adjustment process. A recession would cause an even more severe reduction in developing-country exports to the United States than would a smoother, earlier US adjustment. As for interest rate effects, many developing countries have large outstanding debt that is sensitive to dollar interest rates. A scenario in which interest rates were to soar would increase the cash-flow burden of their external debt and make it more costly for them to issue new debt.

Whereas a hard landing for the US economy would thus tend to cause spillover damage for developing countries, a smooth landing involving some upward exchange rate realignment for these economies against the dollar would provide some benefit to them in the form of a reduction in the real burden of their existing dollar-denominated debt. Ratios of external debt to GDP for countries such as Brazil would ease substantially as the Brazilian currency appreciated relative to the dollar—but very little on a trade-weighted basis—as part of an overall adjustment process.

Policy Coordination Versus Laissez-Faire

For all of these reasons, it is in the broad interests of developing countries for the United States to achieve a smooth external adjustment, even taking into account that such an adjustment will almost certainly require substantial real appreciation of the currencies of many developing countries against the dollar. There is a major question about the feasibility of a general exchange realignment, however, and it turns on the phenomenon called the ''new Bretton Woods'' payments system by Dooley, Folkerts-Landau, and Garber (2004) (see chapter 5). Despite the doubtful policy conclusion these authors infer about the indefinite sustainability of large US deficits because of this system, they are right in diagnosing the similarity of the current arrangements to the regime of fixed exchange rates against the dollar that existed under Bretton Woods for a wide range of developing countries. The reason is that most of these countries tend to manage their exchange rates rather than allowing a free float—the ''fear of floating'' phenomenon emphasized by Calvo and Reinhart (2000). For the important cases of China, Hong Kong, and Malaysia, moreover, the fixed rate has been even more rigid, and there is no guarantee that the recent end to the fixed rates in China and Malaysia will mean major appreciations against the dollar.

In the final stages of the Bretton Woods exchange rate regime, it was recognized that achieving a general realignment of fixed exchange rates required coordination. The Smithsonian Agreement in December 1971 involved a devaluation of the dollar against gold, continuation of existing parities against gold for the French franc and British pound sterling, and appreciation against gold for the deutsche mark, yen, and Swiss franc (Cline 1976, 3). Something very much like the Smithsonian Agreement (without the gold) could well be necessary if the large number of countries otherwise essentially pegging to the dollar are to carry out a broad real appreciation against the dollar.

Game theory helps explain why some form of coordination is needed. The classic game of ''prisoners' dilemma'' shows that an inferior outcome for all parties can arise when they fail to coordinate. In this game, two thieves are arrested and questioned separately. Each is told he will receive

a moderate sentence if he confesses but a harsh sentence if he does not confess and the other thief does. Because the thieves cannot communicate to arrive at a joint statement of innocence, there is an incentive for both thieves separately to confess, so that both wind up with a moderate sentence rather than going free.

In the same way, any individual developing country considering whether to allow its exchange rate to rise against the dollar is likely to be concerned about its general loss of competitiveness, and the risk that its currency will be appreciating not only against the dollar but also against all other currencies. In isolation, the country faces a strong incentive to keep its rate against the dollar unchanged. But if a large number of countries enter into a coordination process in which they all agree to appreciate against the dollar, then they can carry out their end of the action needed for US external adjustment while not facing the penalty of making their exports uncompetitive against those of other developing countries. This dynamic is the reason that most analysts consider substantial appreciation of the Chinese renminbi against the dollar to be the key to unlocking a broader set of currency appreciations by most of the East Asian economies against the dollar.

So far, neither the United States nor the other nations of the G-7 have formally called for a Smithsonian-type of general agreement on coordinated appreciation of exchange rates against the dollar. On the contrary, the US position appears to be to ''let the market do it.'' For its part, the IMF has called for US external adjustment, including dollar adjustment, but it has not broached the possibility of a coordinated international initiative for exchange rate realignments. It is time for the United States, the other nations of the G-7, and the IMF to press for such a coordinated international effort. This effort would at the least set ground rules prohibiting further intervention in exchange markets to keep currencies from rising against the dollar for a set of countries diagnosed to be undervalued against the dollar in terms of the need for an overall adjustment of the US external accounts. A more aggressive agreement could call for intervention in the opposite direction (i.e., the selling off of reserves by such countries as China and Korea), as occurred in the Plaza Agreement among major industrial economies in 1987.

Appendix 6A
Optimal Exchange Rate Realignment

Given a target real effective exchange rate appreciation of all currencies against the dollar, what is the optimal country composition of exchange rate changes? Let i refer to countries other than the United States, and let z_i be the proportionate appreciation of country i's currency against the dollar. Let c_i be the desired change of country i's current account balance as a fraction of GDP, determined by some approach that arrives at consistency with the US current account adjustment and some allocational principle for counterpart adjustments by other countries. Let v_i be the actual (as opposed to desired) predicted change in the country's current account as a fraction of GDP; let y_i be the real effective overall appreciation of country i's currency; let γ_i be a parameter stating the change in country i's current account balance as a percent of GDP to be expected from a 1 percent appreciation in the country's real effective exchange rate; let φ_{ij} be the weight of partner j in the trade of country i; and let subscript u refer to the United States.

The objective is to obtain an optimal set of exchange rate appreciations against the dollar, z_i, such that the resulting set of current account changes is as close as possible to the desired set while meeting the condition that for the United States, the real effective appreciation of other currencies against the dollar equals the target amount Z^*. The real effective appreciation of country i will be

$$y_i = \varphi_{iu} z_{iu} + \sum_{j \neq u} \varphi_{ij} z_{ij} \tag{6A.1}$$

where z_{ij} is the real appreciation of the country's currency against the currency of trading partner j. However, whereas the country appreciates against the United States by $z_{iu} \equiv z_i$, it appreciates against another trading partner j by only $z_{ij} = z_{iu} - z_{ju} \equiv z_i - z_j$. So the equation for the effective real appreciation of country i's currency can be rewritten as

$$y_i = \varphi_{iu} z_{iu} + \sum_{j \neq u} \varphi_{ij}(z_i - z_j) = z_i - \sum_{j \neq u} \varphi_{ij} z_j \tag{6A.2}$$

(The final right-hand side follows from the fact that the sum of the US trade weight and all other trade weights must equal unity.) Overall, the country's effective real exchange rate change will depend on the share of the United States and each of the other countries in its trade, in combination with the respective real appreciation rates against the dollar.[28]

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28. The actual implementation of the analysis uses geometric rather than arithmetic weights. If we redefine y and z as index levels rather than percent changes, it can be shown that the

The expected change in the country's current account as a fraction of GDP will be

$$v_i = y_i \gamma_i \tag{6A.3}$$

The deviation of the predicted change in the current account from the desired change (both as a fraction of GDP) will then be

$$d_i = v_i - c_i = \gamma_i [z_i - \sum_{j \neq u} \varphi_{ij} z_j] - c_i \tag{6A.4}$$

We then choose some form of a penalty function for deviation from the desired current account changes. A reasonable penalty function is the square of the deviation, but it is also reasonable to weight by country economic size (GDP). The optimization problem is then to select the set of currency appreciations so as to minimize the penalty function subject to the constraint that the resulting overall real appreciation of US trading partners against the dollar (using US trade weights) equals the target amount. The problem is thus

$$MIN\ W = \sum_i \theta_i d_i^2 \tag{6A.5}$$

where θ_i is the share of country i in aggregate GDP of US trading partners, subject to

$$Z = \sum_i \alpha_i z_i = Z^* \tag{6A.6}$$

where α_i is the weight of country i in the broad real exchange rate index of the Federal Reserve Board.

Table 6A.1 reports IMF (2005b) estimates of the 2004 current account balances and GDP values in dollar terms for the 26 trading partners included in the Federal Reserve's broad real exchange rate index for the dollar. A striking feature of this compilation is that several economies, including some oil exporters and also some of the East Asian economies, had exceptionally high current account surpluses of 10 percent of GDP or higher. These and several other countries with surpluses of, say, 3 percent of GDP and more would seem to be excellent candidates for surplus reduction as the counterpart of reduction in the US current account deficit.

More specifically, the table also indicates suggested values for the ''desired'' reduction in current account positions. The magnitudes indi-

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geometric analogue to equation 6A.1 is: $y_i = z_i / (\Pi\ z_j\ \varphi_{ij})$, where Π is the product operator and j refers to $j \neq u$.

Table 6A.1 Current account balances, target changes, export ratios, and response parameters for major US trading partners (in billions of dollars, in percent, and in ratios)

Country	Current account[a]	GDP[a]	Current account as percent of GDP	Target change		Exports/ GDP[b, c]	Gamma[e]
				Percent of GDP	Amount		
Argentina	3.1	151.9	2.0	−0.8	−1.2	0.250	−0.23
Australia	−39.4	617.6	−6.4	0.0	0.0	0.181	−0.17
Brazil	11.7	599.7	1.9	−0.8	−4.7	0.169	−0.16
Canada	26.0	995.8	2.6	−1.0	−10.4	0.378	−0.32
Chile	1.4	93.7	1.5	−0.6	−0.6	0.364	−0.31
China	70.0	1,649.4	4.2	−1.7	−28.0	0.344	−0.30
Colombia	−1.0	95.2	−1.1	−0.4	−0.3	0.214	−0.20
Euro area	35.6	9,397.7	0.4	−0.7	−63.8	0.147	−0.14
Hong Kong	15.9	164.6	9.6	−3.9	−6.3	1.722	−0.16
India	2.1	661.0	0.3	−0.4	−2.3	0.146	−0.14
Indonesia	7.3	257.9	2.8	−1.1	−2.9	0.312	−0.27
Israel	0.1	116.3	0.1	−0.4	−0.4	0.384	−0.32
Japan	171.8	4,668.4	3.7	−1.5	−68.7	0.118	−0.12
Korea	26.8	681.5	3.9	−1.6	−10.7	0.382	−0.32
Malaysia	15.7	117.8	13.3	−5.3	−6.3	1.149	−0.47
Mexico	−8.7	676.5	−1.3	−0.4	−2.4	0.284	−0.25
Philippines	3.9	85.1	4.6	−1.8	−1.6	0.491	−0.38
Russia	59.6	582.7	10.2	−4.1	−23.8	0.350	−0.30
Saudi Arabia	49.3	248.8	19.8	−7.9	−19.7	0.470	−0.37
Singapore	27.9	106.8	26.1	−10.4	−11.2	1.580[d]	−0.27
Sweden	28.0	346.5	8.1	−3.2	−11.2	0.439	−0.36
Switzerland	42.9	358.0	12.0	−4.8	−17.1	0.437	−0.35
Taiwan	19.0	305.2	6.2	−2.5	−7.6	0.584	−0.43
Thailand	7.3	163.5	4.5	−1.8	−2.9	0.656	−0.45
United Kingdom	−47.0	2,125.5	−2.2	−0.4	−7.4	0.251	−0.23
United States	−668.1	11,735.0	−5.7	2.7	313.9	0.095	−0.10
Venezuela	14.5	107.5	13.5	−5.4	−5.8	0.370[d]	−0.31
Total	−124.5	37,109.7			−3.5		

a. 2004; b. 2003; c. Goods and services; d. Goods only; e. Change in current account as percent of GDP for 1 percent rise in real exchange rate.

Sources: IMF (2005b); author's calculations.

cated are simply set at a uniform 40 percent reduction in the current account surplus for all countries with surpluses of 1 percent of GDP or more. For other countries (including those in deficit), the adjustment is set at a fixed −0.35 percent of GDP. For Australia, which is already in large deficit, the target is no change in the current account. For euro-area countries, the target change in the current account surplus is set to shift the current account from a surplus of 0.4 percent of GDP to a deficit of 0.3 percent, as discussed in the main text. These targets are set such that the overall reduction in the surplus of these countries is approximately equal to the size of a targeted reduction in the US deficit. The US current account adjustment is set here at a target of $314 billion, which amounts to 2.7 percent of GDP and would cut the deficit to 3 percent of GDP (against the 2004 outcome). As indicated in table 6A.1, the sum of reductions in current account balances for the other countries falls only slightly short of the targeted reduction in the US deficit, which is easily compatible with global consistency when some allowance is made for countries not specifically covered as well as the likely shrinkage of the global current account discrepancy if the large US deficit declines.

The table also reports the ratio of exports of goods and services to GDP. This ratio can serve as the basis for estimating the parameter relating the change in the current account to the change in the real exchange rate. The approach here assumes that trade price elasticities of demand are unity for both exports and imports. This means that the entire adjustment takes place on the export side, because on the import side, the change in the price of foreign exchange offsets the change in the volume of imports, if the pass-through ratio is unity (and lesser pass-through means lesser change in volume).

When the export price elasticity is unity and the export pass-through is complete, then the percent change in exports will equal the negative of the percent real appreciation of the country's exchange rate. This change in exports, expressed as a fraction of GDP, will simply be the percent change in exports multiplied by the ratio of exports (goods and services) to GDP. For countries with relatively low ratios of trade to GDP, this approach should broadly hold. However, for countries with high ratios of trade to GDP, it is increasingly necessary to take into account the responsiveness of supply, as the change in exports can become large enough relative to GDP to invalidate the assumption that export supply elasticities are infinite. In the absence of specific econometric estimates by country, it is assumed here that the effective elasticity of export volume with respect to price facing the foreign market, which is meant to incorporate both supply and demand effects, is unity for a country with an export/GDP ratio of 10 percent (the case of the United States), and that this elasticity steadily falls to 0.5 for a country with exports as high as 100 percent of GDP (such as Malaysia). This set of assumptions yields

the following simple linear equation for the effective elasticity of exports with respect to the real exchange rate: $e = -1.056 + 0.56x$, where x is the ratio of exports of goods and services to GDP. (The elasticity is negative and so falls in absolute value as the share of exports in GDP rises.)

With an estimate of the effective export elasticity in hand, the estimate for the change in the current account as a percent of GDP becomes this elasticity multiplied by the ratio of exports of goods and services to GDP. Thus, in equations 6A.3 and 6A.4, the parameter γ is: $\gamma = ex = -1.056x + 0.56x^2$. The term γ is reported in the final column of table 6A.1. For example, this term is -0.32 for Korea. With a target current account change equal to -1.56 percent of GDP for Korea, the implied appreciation of the real exchange rate is 4.88 percent ($= [-1.56]/[-0.32]$). (The actual optimal appreciation can differ because the deviation from the optimal target is being minimized but not eliminated.) Of course, the bilateral real appreciation against the dollar would be much larger.

Appendix 6B
Recent Alternative Profiles Proposed for Global Adjustment

Williamson (2004) set forth a proposed set of target current account adjustments by major country or region as the counterpart of a targeted correction in the US external deficit. He placed the goal for the US current account deficit at $250 billion, which amounted to 2.1 percent of 2004 GDP. This is a level he considers compatible with avoiding a further increase in the ratio of net international liabilities to GDP. Table 6B.1 shows the 2004 current account outcomes predicted in April 2004 by the IMF and used by Williamson, along with his proposed targets, and also reports the change from the predicted level to the target as a percent of each region's GDP.

Williamson's central point was that the reductions in demand coming from the counterpart of US external adjustment did not need to be punitively large for the rest of the world. For the euro area, for which he saw a near-zero balance as a reasonable target, the demand shift would amount to only 0.7 percent of GDP. For Japan, Williamson judged that a reduction of the current account surplus to 1.5 percent of GDP would be manageable. Given the expected surplus at the time of his study, this involved a reduction of demand amounting to 1.5 percent of GDP. For other industrial countries (including Canada), cutting the surplus to close to zero would have involved a reduction in demand somewhat smaller than that for the euro area, relative to GDP. For the NIEs (Hong Kong, Taiwan, Korea, and Singapore) he suggested a cut in the surplus of 1.5 percent of GDP, which would still leave their surplus at 4.7 percent of GDP. For China and other developing Asian countries, the cut would also have amounted to 1.5 percent of GDP. Williamson suggested current account reductions of 0.3 percent of GDP for transition economies, and set targeted adjustment at zero for both Africa and Latin America.

With even the maximum reductions in current account balances at only 1.5 percent of GDP, and with adjustment spread over three years or more, Williamson concluded that the foreign counterpart of US external correction would amount to only a mild impact on demand.

Williamson's estimates do not specifically address the translation of nominal changes to real changes for the current account relative to GDP. Because the rest of the world would be appreciating against the dollar, there would be a favorable terms of trade change from lower import prices expressed in domestic currencies. This means, however, that real imports would have to rise even more (and real exports fall more) in order to accomplish the same nominal change in the trade balances. Assuming pass-through ratios of 50 percent from exchange rate change to price change (see chapter 3), the ratio of the real trade balance change

Table 6B.1 Current account balances: 2004 expected and Williamson target (in billions of dollars and in percent of GDP)

	Expected[a]	Target[b]	Change	Change as percent of GDP
Advanced countries				
United States	−496	−250	246	2.1
Euro area	68	0	−68	−0.7
Japan	144	71	−73	−1.5
NIEs	77	58	−19	−1.5
Other	23	0	−23	−0.4
Subtotal	−184	−121	63	
Developing countries				
Africa	−8	−8	0	0.0
China	25	1	−24	−1.5
Other Asia	26	4	−22	−1.5
Middle East	44	33	−11	−1.5
Western Hemisphere	−7	−7	0	0.0
Subtotal	80	23	−57	
Economies in transition	6	0	−6	−0.3
Discrepancy	−98	−98	0	

NIEs = newly industrialized economies (Korea, Hong Kong, Singapore, and Taiwan)

a. In early 2004. IMF, *World Economic Outlook* (April 2004).
b. Williamson (2004).

to the nominal change would be about 1.25 (Cline 1989, 360).[29] If pass-through ratios were as high as 80 percent, this ratio would be about 1.9. Using a ratio of 1.5 for the real relative to nominal adjustment, Williamson's 1.5 percent of GDP ceiling for nominal adjustment would imply 2.25 percent of GDP in real terms, or 0.75 percent of GDP annually—not extremely severe but not trivial either.

At the same Institute for International Economics conference at which Williamson presented his estimates, Bénassy-Quéré et al. (2004) presented a paper calculating the extent of undervaluation of individual major currencies against the dollar, and by implication, indicating which currencies should bear the bulk of the appreciation against the dollar required for international adjustment. Their approach was rather different from the traditional fundamental equilibrium exchange rate (FEER) method of Williamson (1983), which identifies the exchange rate at which internal equilibrium (unemployment at the non–inflation accelerating level) and external equilibrium (some target appropriate or sustainable current account balance) are achieved. In essentially a more positive rather than normative approach, they estimate empirically the relationship of the real exchange rate to two explanatory variables: the ratio of net foreign assets to GDP

29. Assuming the underlying price elasticities are unity.

and the ratio of domestic consumer prices to producer prices. The idea is that a country with high levels of foreign assets will tend to enjoy a higher (stronger) real exchange rate (if only because it can pay for some of its imports with earnings on capital assets rather than exports). As for the internal price ratio, the approach invokes the Balassa-Samuelson effect, in which a secular rise in productivity of export goods at a pace faster than in domestic nontradables will yield a secular rise in the real exchange rate (as observed historically, most notably in the case of Japan). The consumer/producer price ratio is a gauge of the price of nontradables relative to tradables (as the consumer price index includes nontraded services) and is hence interpreted as a measure of relative productivity in tradables. The higher the internal price ratio, the higher the expected real exchange rate.

The merit of the Bénassy-Quéré et al. approach is unclear. It would seem highly subject to unstable multiple equilibria for the estimated equilibrium real exchange rate (ERE). The reason is that both variables in the equation for the ERE are highly likely to respond positively to a depreciation of the actual exchange rate, making the equilibrium rate endogenous rather than exogenous. That is, the ratio of external debt, which is typically in dollars, to GDP will balloon when the dollar equivalent of local currency GDP shrinks because of a depreciation of the currency. Similarly, the ratio of the consumer price index to the producer price index is likely to fall sharply when the exchange rate depreciates sharply, because the weight of traded goods is much higher in the denominator (producer price index) than in the numerator (consumer price index). Suppose that there is a collapse in the exchange rate because of a transitory loss of confidence. The measure of the ERE will also show a large drop, because the debt-to-GDP ratio will have risen and the ratio of the consumer price to the producer price index will have fallen.

The Bénassy-Quéré et al. estimates are for 15 countries during 1980–2001. They generate time paths of ''equilibrium'' real exchange rates predicted from the model as applied to the net foreign asset and consumer/producer price ratios. These are compared with actual real exchange rates to determine whether each country is overvalued or undervalued. These comparisons are then translated into overvaluation or undervaluation against the dollar. The method generates large gyrations in the predicted real exchange rate, in contrast to what might be expected for more meaningful equilibrium rates.[30] (The essence of a fundamental

30. For example, Brazil's estimated equilibrium real exchange rate over 1983–88 is about 30 percent higher than the 22-year average, about 20 percent below the average in 1996, and about 25 percent above the average in 2001. Australia's ERE rises (depreciates, as the definition is real home currency per foreign currency) steadily from 15 percent below the actual 1990 level in 1980 to 27 percent above the 1990 actual level in 2001. Note that the close adherence of the equilibrium rate index to the actual index for Brazil, and the wide fluctuation of both, is highly suggestive of the problem of positive feedback from the actual to the supposed equilibrium rate as discussed in the text.

equilibrium exchange rate is that it tends toward a central value that changes only slowly, and the whole objective is to compare the actual exchange rate—which can move much more rapidly—against the fundamental equilibrium level to judge exchange rate overvaluation or undervaluation.) This outcome is consistent with the diagnosis here that the method likely is subject to positive feedback from the actual rate to the supposed equilibrium rate, generating unstable multiple equilibria in the ERE.

The seeming susceptibility of the measured real equilibrium rate to endogeneity with respect to the actual rate suggests that the Bénassy-Quéré et al. estimates should be taken with a grain of salt. Nonetheless, because they provide one perspective on the extent of currency misalignment, and in part because, at least for several countries, they appear to generate plausible values, the estimates are reported in table 6B.2. In the table, ''misalignment'' indicates the percent by which the actual number of currency units per dollar exceeds the desired rate (i.e., undervaluation). The table further updates the estimates to end-2004, taking account of actual exchange rates and the excess of national inflation over cumulative US inflation from mid-2003 to end-2004.

Based on the Bénassy-Quéré et al. estimates as updated, at the end of 2004, the euro was approximately at an equilibrium value against the dollar (1.2 percent overvalued), but the yen remained significantly undervalued (by about 22 percent) and had an equilibrium rate of 85 to the dollar. The UK and Australian currencies had already overshot, according to these estimates, and were overvalued by about 8 to 9 percent against the dollar. The Mexican peso was overvalued by about 12 percent and the Turkish lira by about 20 percent.[31]

The authors' estimate of undervaluation of the Chinese renminbi, at 46 percent, was about twice as large as the correction called for by Goldstein (2004). Major undervaluation against the dollar, at about 20 percent, also persisted for other key Asian economies (Korea, India, and Indonesia). As discussed in the main text, the Bénassy-Quéré results are broadly similar to those in this study (except for Argentina, Mexico, and the United Kingdom), despite the completely different methodology.

31. Considering that Mexico's current account deficit in 2003 was only 1.5 percent of GDP, it is unclear that the diagnosis of overvaluation of the peso by 12 percent is warranted.

Table 6B.2 Equilibrium exchange rates and misalignment as estimated by Bénassy-Quéré et al. (in currency per dollar, in percent, and in percentage points)

Country	Exchange rate, 2003	Misalignment (percent)	Equilibrium rate, 2003	Exchange rate, end-2004	Differential inflation[a] (percentage points)	Equilibrium rate, end-2004	Misalignment, end-2004
Argentina	2.96	92.5	1.54	2.98	7.5	1.65	80.2
Australia	1.36	−3.5	1.41	1.28	0.2	1.41	−9.2
Brazil	2.93	27.4	2.30	2.66	10.0	2.53	5.3
Canada	1.30	7.8	1.21	1.20	−0.8	1.20	0.5
China	8.29	47.3	5.63	8.29	0.6	5.66	46.4
Euro area	0.81	7.6	0.75	0.73	−0.9	0.74	−1.2
India	45.34	32	34.35	43.73	2.6	35.24	24.1
Indonesia	8,945.82	22.9	7,278.94	9,319.80	5.9	7,708.40	20.9
Japan	108.17	22.1	88.60	103.10	−4.3	84.79	21.6
Korea	1,194.54	37.5	868.76	1,047.50	1.6	882.22	18.7
Mexico	10.81	−13.1	12.43	11.19	2.7	12.76	−12.3
South Africa	7.57	32	5.74	5.67	1.5	5.82	−2.6
Turkey	1.45	0.7	1.44	1.34	20.1	1.73	−22.2
United Kingdom	0.55	−4.4	0.57	0.52	−1.7	0.56	−7.5

a. 18 months.

Sources: Bénassy-Quéré et al. (2004); IMF (2005a).