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Global Imbalances: Globalization, Demography, and Sustainability

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The current account deficit of the United States has been large in recent years, both in absolute size and relative to GDP. In 2006, it reached $811 billion, 6.1 percent of GDP. It has become a dominant feature of the world economy; if you sum up the current account deficits of all nations that are running deficits in the world economy, the U.S. deficit accounts for about 70 percent of the total.

In any country's national accounts, it will hold true as an identity that the current account deficit—the excess of payments (M) to the rest of the world for goods, services, investment income, and unilateral transfers over receipts (X) from the rest of the world for similar items—exactly equals (apart from measurement errors, which may be substantial) the excess of aggregate expenditure (E) for goods and services over national output (Y), which in turn equals the excess of investment (I) over savings, both public (T – G) and private (S). In symbols:

$$M - X = E - Y = I - S - (T - G)$$

Thus, a current account deficit implies an excess of expenditure over output and by the same token an excess of investment over savings. A current account deficit also measures net foreign investment in the country running the deficit, and net foreign investment abroad by a country running a surplus. The "net international investment position" of a country is the accumulation of current account positions over the years, plus sometimes substantial valuation adjustments (more on this below).

The growth in the U.S. current account deficit reflects, then, a growing excess of expenditure over output and of investment over savings. As shown in Table 1, gross investment increased (as a share of GDP) in the late 1990s, and private saving

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Table 1
U.S. Current Account, Investment, and Saving

	Current account		Investment	Saving		Statistical discrepancy
				Private	Public	
	(billions of dollars)	(percent of GNP)	(percent of GNP)			
1993	−72	−1.1	17.5	16.2	−1.8	−2.1
1994	−107	−1.5	18.5	15.7	−0.6	−2.0
1995	−92	−1.2	18.5	16.2	−0.3	−1.4
1996	−101	−1.3	18.9	15.8	0.7	−1.2
1997	−111	−1.3	19.7	15.6	1.9	−0.8
1998	−188	−2.1	20.2	15.2	3.1	0.2
1999	−279	−3.0	20.6	14.3	3.7	0.4
2000	−397	−4.0	20.7	13.5	4.4	1.3
2001	−371	−3.7	19.1	13.8	2.5	0.9
2002	−460	−4.4	18.3	14.9	−0.7	0.2
2003	−515	−4.7	18.3	14.8	−1.6	−0.4
2004	−626	−5.3	19.2	14.9	−1.2	−0.2
2005	−739	−5.9	19.8	14.3	−0.4	0.0
2006	−798	−6.0	19.9	13.5	0.5	0.1
2007[P]	−739	−5.3				

Source: Bureau of Economic Analysis.
Note: Measured on a national accounts basis, which differs from balance-of-payments basis in coverage and timing. Current account deficit in 2006 was $811 billion in the balance of payments. Numbers for 2007 are preliminary and incomplete at press time.

declined irregularly throughout the last two decades, but neither movement was large. Net public saving (by all levels of government) increased sharply in the late 1990s and then declined sharply in the early 2000s by an extraordinary 6 percent of GDP 2000–2003 before rising 2 percent by 2006. These statistics are measured with error, resulting in a statistical discrepancy that swung by over 3 percentage points of GDP between 1994 and 2000 (suggesting that perhaps the investment boom was underestimated) and then swung by over 1 percentage point in the opposite direction to 2005.

Looking at the U.S. national accounts alone neglects the rest of the world, whose trade surpluses are inextricably symmetric with the U.S. trade deficit. The trade surpluses of the world in 2006 were mainly found in oil-exporting countries (members of OPEC, but also Russia and Norway), in China, in Japan, in several smaller Asian economies (notably Singapore, Malaysia, Taiwan, and Hong Kong), in Germany, and in several smaller European countries (notably Switzerland, Netherlands, and Sweden). Some countries had large trade deficits, mainly countries in central Europe and, among the rich countries, Spain, Britain, Italy, and Australia. Table 2 reports the current account positions of selected countries and groups of countries for selected recent years.

It is sometimes claimed that the worsening U.S. current account position was caused mainly by a decline in U.S. national saving, especially a fall in private saving

Table 2
Current Account Balances
(billions of dollars)

	1997	*2000*	*2005*	*2006*
United States	−141	−417	−755	−811
Japan	97	120	166	170
Germany, Netherlands, Switzerland	41	5	230	263
Hong Kong, Korea, Singapore, Taiwan	39	80	88	91
Other advanced economies	29	−58	−166	−230
China	34	21	161	250
Other Developing Asia	−27	18	−4	28
Central and Eastern Europe	−21	−32	−62	−88
Commonwealth of Independent States	−9	48	88	98
Middle East	11	72	197	234
Western Hemisphere	−67	−48	35	45
Africa	−6	8	16	29
Discrepancy	14	−179	7	87
Note: fuel exporters	16	151	348	423

Source: IMF *World Economic Outlook,* October 2007 and September 2005.
Note: The current account measures used in Tables 1, 2, and 5 differ slightly. The current account measure in Table 1 is drawn from the national accounts. The measure in Table 2 is drawn from the balance of payments accounts, which differ from the national accounts in timing and coverage. The measure in Table 5 is also drawn from the balance of payments, but reports only measured net capital flows—that is, it excludes the statistical discrepancy and the small capital account.

in the 1990s and in public saving in the first half of the 2000s. But the U.S. economy and the world economy are complex, interdependent mechanisms, and one cannot infer causality about trade deficits from looking at U.S.-based national accounting relationships.[1] (Furthermore, total measured U.S. saving fell less than half a percentage point from 1993–2006, while the current account deficit rose by nearly five percentage points.) Similarly, one cannot draw inferences about the causes of

[1] Much concern has been expressed also about the decline in personal savings in the United States, which became negative in 2005 and 2006. This paper is not the place for an extended discussion of how national savings is measured, but it is worth noting that national accounts view saving in physical terms appropriate for the industrial age: structures, equipment, and inventories. Software production was counted as investment only a few years ago. A measure of saving designed for the knowledge economy would include educational expenditures and purchases of consumer durables, all of which are currently reckoned as "consumption" in the year in which the expenditure takes place. Moreover, American corporations have made extensive investments in intangible assets not counted as investment in the national accounts, including research and development, on-the-job training of personnel, and building brand value, which together in recent years have exceeded investment in plant and equipment (Corrado, Hulten, and Sichel, 2006). Properly measured, and allowing for the ultimate ownership of corporate saving, Americans save nearly 40 percent of GDP. Given the respectable returns to investment in the United States, broadly defined, this does not suggest Americans are undersaving. However, such revised calculations of U.S. saving and investment do not affect the discrepancy between them, since saving and investment are raised by the same amount.

the U.S. trade deficit by looking at the national accounting relationships for countries with trade surpluses like China or Germany. Moreover, one cannot draw inferences about the cause of U.S. trade deficits by noting that the price of oil has risen; a higher price of oil increases the cost of imported oil, but the net effect on the U.S. trade balance depends also on the extent to which the receipts from the higher U.S. oil imports are spent directly or indirectly on U.S. exports.

This paper looks beyond the national income accounting relationships to offer a more complex view of the U.S. imbalance. The first two sections argue that the generally rising U.S. trade deficit over the last 10–15 years is a natural outcome of two important forces in the world economy—globalization of financial markets and demographic change—and therefore that the U.S. current account deficit is likely to remain large for at least a decade. It is only true in an accounting sense that, as is often said, foreigners need to "finance" the U.S. current account deficit. It would be more nearly correct to say that the desire of foreigners to invest in the U.S. economy results in the U.S. current account deficit. Of course, these factors are jointly determined, but much of the pressure comes from the desired capital flows of foreign investors.

While the forces of globalization and demographic change help to explain why the U.S. deficit has increased, they do not fully address the question of whether this change is sustainable or beneficial over time. Will foreign investors continue to have a motivation to invest in the United States? Will foreign saving be adequate to finance a continuing and even rising U.S. deficit? Will U.S. financial claims be sufficient to satisfy potential foreign demand for them? I will address each of these questions. Moreover, I will argue that serious efforts to reduce the U.S. deficit, even collaborative efforts with other countries, may well precipitate a financial crisis and an economic downturn every bit as severe as the one that many fear could result from a disorderly market adjustment to the trade deficit.

Globalization of Financial Markets

Globalization of financial markets means that investors will have a greater desire to diversify outside their home markets. To what extent might this effect contribute to the U.S. trade deficit? One way to define "full globalization" would be to mean the absence of home bias in the portfolio choices of savers around the world. In the interests of diversification, savings everywhere would be allocated according to shares of GDP in gross world product. This perspective is of course is a vast oversimplification; allowance would also need to be made for differences in national market characteristics (like liquidity and risk) and for yields. But it is a useful starting point. Thus, savings in the rest of the world would be invested in the United States according to the share of the U.S. economy in the world economy, and by the same assumption, U.S. savings would be invested in the rest of the world in a parallel way.

The U.S. share of the world economy (calculated at the market exchange rates relevant for this calculation) was 30 percent in 2000, rising slightly in 2001–2002

and then declining to 27.5 percent in 2006. Thus with no "home bias," the rest of the world would have invested those percentages of its saving in the United States in those years. The total foreign investment in the United States rises from $1.6 trillion in 2001 to $2.5 trillion in 2006, where data on world saving are drawn from the IMF's *World Economic Outlook*. In this exercise, Americans would have invested a corresponding percentage of their savings in the rest of the world, rising from 70 percent in 2000 to 72.5 percent in 2006. The dollar amounts rise from $1.1 trillion in 2001 to $1.3 trillion in 2006. The difference between foreign investment in the United States and U.S. investment abroad would be net foreign investment in the United States, essentially equal to the current account deficit. This would have been nearly $500 billion in 2001, rising to $1,200 billion in 2006. These numbers are substantially above the actual current account deficits observed for those years. By this simple standard, the world economy is not yet completely globalized, but it is moving gradually in that direction. This calculation suggests larger U.S. trade deficits in the future as home bias continues to decline.[2] Indeed, much larger trade deficits could be temporarily possible if existing portfolios around the world were rebalanced so that approximately 30 percent would be in claims on the U.S. economy.

Clearly, what is driving the result in this exercise is that the rate of saving is higher in the rest of the world than it is in the United States, as it has been for decades. This calculation takes gross saving as given and ignores actual investment opportunities, including the returns to investment.

This argument shows that an increase in financial globalization and a reduction in home bias, given the existing levels of saving round the world, will produce larger trade deficits in the United States.[3] However, this argument about the effects of financial globalization is not sufficient by itself to show that these rising U.S. trade deficits are sustainable or on net beneficial (although presumably greater diversification of investments across national borders is beneficial to the investors making this choice).

Demography and the Savings–Investment Balance

Current account surpluses imply an excess of national saving over domestic investment. Why does this occur, especially in view of the budget deficits run by many countries that absorb much of their excess private saving? The reasons for

[2] A reasonable question here is whether "gross saving" (used in this exercise) is the relevant magnitude, because gross saving includes saving that is used to replace worn-out and depreciated structures. No doubt one important reason for the presence of home bias is that much saving represents reinvested depreciation allowances by firms around the world, often mechanically replacing worn-out structures and equipment. But in a technologically dynamic world economy, with new opportunities for investment being created continuously, the well-managed firm will evaluate afresh all large capital investments, including those from depreciation allowances.

[3] Greenspan (2004, 2007) has also emphasized a worldwide reduction in home bias.

high levels of saving in a certain country can include the extent of uncertainty and even insecurity about the future; imperfect arrangements for consumer credit for large purchases; corporate management incentives for retaining rather than distributing earnings; the prospect of lower earnings after retirement; memories of past periods of adversity; and so on. But one factor that has received too little attention, or indeed even misleading attention, is the dramatic demographic transformation that many countries are experiencing. Societies are aging, as has been widely noted, but for two quite different reasons: increasing longevity and declining natality.

It may be expected that increasing average life expectancy—a rise of 8.2 years in the United States over the past half century, from 70 to 78 years, and nearly twice that gain in Japan[4]—without a corresponding increase in working years, will increase household savings for retirement. Precautionary savings should increase as well, since lives are not only longer but considerable uncertainty exists over how much longer, given the prospects for continual advances in medical technology. In addition, many countries are experiencing uncertainty about the future financial viability of their public pension schemes, which should also tend to raise precautionary saving.

Lower birth rates, on the other hand, tend to reduce investment. Low natality implies, over time, lower demand for schools and housing. Less new capital is also required to equip the new members of the labor force. To be sure, scarcer labor will induce some capital–labor substitution, but that will drive down the domestic returns to capital, enhancing the attractions of investment abroad.

Table 3 presents national savings and investment (all relative to GDP) for Japan, Germany, the newly rich Asian economies of Hong Kong, South Korea, Singapore, and Taiwan, and "developing Asia," which is dominated quantitatively by China. These countries are the non–oil-exporting countries with the largest trade surpluses. Saving has dropped in Japan (as life-cycle devotees have expected for some time because of Japan's aging population) but investment has dropped even more. Saving in Germany has remained unchanged (private saving rose, since the public deficit rose by four percentage points between 2000 and 2005), but investment fell sharply. A roughly similar pattern occurred in the newly rich Asian economies. In contrast, investment rose in developing Asia, exceeding 40 percent of GDP in China by 2005; but saving rose even more in these rapidly growing economies.

The U.S. Census Bureau projections for population in these countries and others (at ⟨http://www.census.gov/ipc/www/idb⟩) are striking. In most high-income countries as well as in China, populations are not reproducing themselves. The average number of children per woman of child-bearing age is 1.4 in Germany and Japan, and 1.0 in Hong Kong and Singapore (whereas 2.1 children per woman is required to sustain the same size population in the long run). The total popu-

[4] According to the World Development Indicators of the World Bank.

Table 3
Savings and Investment
(percent of GDP)

	Saving/Investment	*1992–1999*	*2000*	*2005*	*2006*
Japan	S	30.6	27.8	27.2	27.8
	I	28.1	25.2	23.6	24.0
Germany	S	21.0	20.1	21.7	22.8
	I	21.9	21.8	17.1	17.8
Hong Kong, South Korea, Singapore, Taiwan	S	33.8	31.9	31.3	31.4
	I	31.1	28.4	25.9	26.0
Developing Asia	S	31.8	30.3	41.3	43.8
	I	32.3	28.2	37.2	37.9

Source: IMF *World Economic Outlook,* April 2007, table 43; April 2008, table A16.

lations of Germany and Japan have already peaked, as the decline in births has more than counterbalanced increasing longevity. The number of young adults has been declining for some time in these countries. In fact, according to Census Bureau projections, the number of young adults ages 15–29 will fall between 2005 and 2025 by 19 percent in China, 21 percent in Japan, 16 percent in Germany, and 24 percent in the newly rich Asian countries. (These figures perhaps understate the decline, since the Census Bureau assumes a future rise in birth rates.)

In contrast, among the high-income countries, the United States stands out as a strong exception: while the birth rate has declined, it remains above two per woman. In addition, the U.S. population is augmented by over one million immigrants a year, who in general are young and who will integrate over time into the U.S. labor force. In the United States, in contrast to other rich countries, the number of young adults is expected to rise by about 7 percent from 2005 to 2025, according to Census Bureau projections. (These figures may understate the likely U.S. increase because of conservative assumptions regarding immigration.)

China of course is in different circumstances from Germany, Japan, and other high-income countries. According to various editions of the *China Statistical Yearbook,* China's rural population, while down 20 percentage points over the past two decades, remains large, so much further rural–urban migration can be expected. The rapid growth of the urban labor force can be expected to increase demand for housing, schools, and productive capital stock. Moreover, the incomes of Chinese have grown rapidly and can be expected to continue to grow, with a consequential housing boom as people not only change location but also upgrade the amount and quality of their living space. China's investment rates are high. But with per capita incomes growing at over 7 percent a year in the presence of desires for lumpy expenditures and a poor capital market, Chinese savings rates have increased even while consumption has grown rapidly. Moreover, many Chinese state-owned enterprises have substantial saving in their own retained earnings, some because they

have modernized and downsized, improving their earnings, while others enjoy quasimonopoly profits.

Not all rapidly aging countries run current account surpluses. Italy and Spain, in particular, have very low birth rates, but nonetheless run significant trade deficits; Italy runs a substantial budget deficit; and Spain has experienced a construction boom, partly due to northern Europeans buying vacation condominiums. The United Kingdom also runs a trade deficit, though its low birth rate is not nearly so low as those in Italy and Spain. The countries that have the largest trade surpluses in the world—China, Japan, Germany, and the newly rich Asian countries—are also countries that are quite far advanced in the demographic transition of low birthrates and advancing life expectancy. Together with the globalization of finance and the reduction in home bias, demography helps to explain why a greater share of savings is flowing out of these economies. However, this argument does not explain why these funds are flowing to the U.S. economy. The U.S. economy is not nearly as far down the road of its own demographic transition, but there are many other countries around the world where the demographic transition is even less advanced.

Why Invest in the United States?

Given that a number of high-income countries have excess savings compared to their domestic investment, why do these funds flow so heavily to the U.S. economy? After all, under neoclassical assumptions, excess national savings should flow to regions of the world where return to capital is highest, and those in turn are assumed to be generally low-income regions with a low ratio of capital to other factors of production.

Indeed, much private foreign capital has gone into developing countries in recent years; for example, in 2005, over $500 billion (net) went into countries in central Europe and East Asia according to data from World Bank published in the annual *Global Financial Developments*. But this amount compares with nearly $1 trillion in foreign private funds invested in the United States in 2005 and $1.4 trillion in 2006 and again in 2007, as shown in Table 4.

The obvious explanation is that discerning investors care less about the predictions of neoclassical models than they do about the details of risk and return. From that perspective, there are several reasons for foreign funds to seek the capital-rich United States as a locus for investment.

As discussed above, the enormous size of the U.S. economy means that as home bias in investments shrinks, funds from high world savings will flow to the U.S. economy. U.S. financial markets are even larger relative to the rest of the world than is its GDP, accounting for half of the world's marketable securities (stocks and bonds) in 2006, and more than half if allowance is made for the nonavailability of many shares of companies in other countries—for example, because large foreign companies may be partially owned by their governments or by controlling families

(McKinsey Global Institute, 2008). Because of the size and institutional arrangements in the U.S. economy, many marketable securities are much more liquid than is true in other financial markets, increasing their attractiveness to passive investors; and the market offers a wide diversity of financial assets in terms of their risk characteristics.

In addition, property rights are secure in the United States, and dispute settlement is relatively speedy and impartial. Effective confiscations during the last decade in Argentina, Russia, Bolivia, and Venezuela have reminded investors that foreign private investment in other countries may not always be secure.

The U.S. economy continues to be dynamic, despite its wealth, partly on demographic grounds noted above, but also because it is highly innovative and relatively more flexible than other economies. In capital-poor countries, yields on investments are often low; in fact, the reason why many countries are capital poor is because the yields are low, which in turn is often due to a poor institutional setting for investment (which should be interpreted broadly to include legal and financial institutions as well as public infrastructure). In recent years, yields on U.S. debt instruments have been higher than those in many other rich countries, notably Japan and continental Europe. Yields have been still higher in Britain and Australia, which share some of the other characteristics of the United States. Intriguingly, net foreign investment has also been high into those countries—which is to say that they also have run substantial current account deficits.

Theoretical models that take these real-world characteristics of financial markets into account find that funds should be expected to flow to the U.S. economy. For example, Caballero, Farhi, and Gourinchas (2006) emphasize the shortage of financial assets outside the United States, especially in emerging market economies, to explain the heavy foreign demand for U.S. securities. Antras and Caballero (2007) show that financial market imperfections in developing countries can lead rationally to a net outflow of capital from such countries to countries that have higher endowments of capital per worker. McGrattan and Prescott (2008) provide a rationale, based on intellectual property (what they call technology capital), for higher returns on U.S. investment overseas combined with (temporary) recorded net capital inflows into the United States.

Of course, foreign investors in the United States face the risk that a weaker dollar would hurt their rate of return measured in home currency, but apparently this exchange rate risk does not overwhelm the combination of risk and yield available in U.S. markets. On the broad trade-weighted index of the U.S. dollar exchange rate compiled by the Federal Reserve, the dollar depreciated in real terms from the mid-1980s by 22 percent to a low in 1995, appreciated by 28 percent (to its 1986 level) in 2002, and then depreciated by 21 percent to the fourth quarter of 2007, not quite reaching its level of 1995. (The 2002–2007 depreciation was 22 percent in nominal terms.) Foreign investors may believe that in the long run appreciations will roughly balance depreciations, or that a large depreciation of the dollar would be sufficiently damaging to other economies to elicit countervailing

actions by their monetary authorities, so that exchange rate movements among major currencies will be bounded by future central bank action.

Sustainability of the U.S. Trade Deficit

There are several concerns over the sustainability of the U.S. current account deficit. One prominent concern is that a substantial amount of foreign investment in the United States has been by official agencies, notably central banks in the form of additions to their foreign exchange reserves. In many countries, these central bank decisions combine elements of economic and political calculation, and the fear is that some combination of these factors will cause the central banks either to stop increasing their holdings of U.S. dollar assets or even to sell off their existing holdings. A second concern is that the U.S. trade deficit is growing on an unsustainably rapid path relative to the U.S. economy. On closer examination, neither of these concerns suggest that the U.S. deficits are not sustainable well into the medium term.

Official Investments in the U.S. Economy

Foreign central banks did add over $2 trillion to their reserves in 2000–2006, around two-thirds of which (by those who report currency) are held in dollar-denominated assets according to data from the IMF published in *International Financial Statistics* and its *Annual Report*. Many of these investments are made directly in the United States; the remainder is invested in dollar assets in London and other financial centers outside the United States. Table 4 reports investment flows into and out of the United States in 2000–2007. Notice that inflows of private funds are significantly greater than inflows of official funds, which are mainly foreign exchange reserves invested in the United States; for example, 78 percent of a total inflow of $1.2 trillion in 2005 was private funds rather than official funds, and private funds were the same percentage of a nearly $1.9 trillion total inflow in 2007. (Some funds, especially from oil-exporting countries, entering the United States through private channels are ultimately owned by official agencies; but the decision to invest in the United States is typically made by private investment managers.)

It is sometimes said that foreign central banks are financing the U.S. current account deficit. This statement is incomplete at a factual level, because the overwhelming majority of the current account deficit is not financed by central banks. It is also incorrect at a conceptual level, since it involves an inappropriate attribution of selective inflows to selective outflows. It would be as correct to say, as France's President DeGaulle did over 40 years ago, that foreign central banks were financing American investments abroad.

There are many reasons for the extraordinary build-up of U.S. dollar reserves that has occurred. Some countries, in wake of the financial crises of the 1990s and the pain and political embarrassment of having to rely on the International Monetary Fund, sought to build their reserves as protection against reversals of

Table 4
Capital Flows in the U.S. Balance of Payments
(billions of dollars)

	2000	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007[p]*
Foreign capital inflow	1047	783	798	864	1462	1204	1860	1864
Private	1004	755	682	586	1064	945	1419	1451
Official	43	28	116	278	398	259	440	413
U.S. capital outflow	561	383	295	325	905	427	1055	1206
Private	559	377	291	327	910	447	1063	1183
Official	1	5	3	−2	−4	−20	−8	23
Statistical discrepancy	−69	−10	−42	−13	86	−18	−18	84

Source: Bureau of Economic Analysis.
Note: Data for 2007 are preliminary. Figures may not add due to rounding errors.

inflows. Widespread use of the dollar in international transactions and the high liquidity of U.S. financial markets, particularly U.S. Treasury securities, point to increased dollar holdings. Some countries increase their domestic money supplies by buying foreign rather than domestic claims, presumably to limit credits to the government or to build precautionary foreign exchange reserves. For some countries, reserve acquisition is a by-product of foreign exchange rate policy, where exchange market intervention is used both to influence the level of the exchange rate for the domestic currency and to reduce its variability. China is the leading example of such a policy, but it applies to many other countries.

Some countries may want additional foreign investments, perhaps because of limited opportunities for further productive investments at home. For example, Singapore has extensive official overseas investments for future generations. In addition, a number of oil-exporting countries have now emulated Kuwait and Norway in setting aside a portion of their large oil earnings, investing them in the rest of the world for the sake of future generations, so significant savings from these countries may endure for many years. One estimate places the additional foreign investment from oil exporters between 2006 and 2012 at $2.3 trillion even with oil prices assumed to drop to $50 a barrel (Farrell, Lund, Gerlemann, and Seeburger, 2007).

Even Japan's large reserves of U.S. dollar assets can be given such an interpretation. Japan's rapidly aging society needs extensive foreign investments because future returns to investment in Japan appear low (perhaps even zero for many government-financed capital projects). Yet the saving behavior of the Japanese public has been extraordinarily conservative, leading much saving into low-interest saving accounts. The Bank of Japan (on behalf of the Ministry of Finance) can be thought of as a financial intermediary between the conservative saving behavior of the Japanese public, and the requirement for the country to increase its command over future tradable goods. Of course, investing in U.S. Treasury securities itself is a conservative investment strategy, and Japan might be well-advised to follow the lead of other countries in

creating an agency to invest abroad in less-liquid, higher-yield assets. In recent years, Japanese savers have become more venturesome and now invest extensively overseas, mostly through investment trusts, and the Bank of Japan has not intervened significantly in the foreign exchange market since early 2004.

Unlike Japan, China has many profitable domestic investment opportunities. China, however, has a poorly developed capital market, mainly large state-owned banks with a fringe of limited-access foreign banks, two highly speculative stock markets, and a rudimentary government bond market. It offers a very limited menu of financial assets to savers, and by wide agreement it does a poor job of directing funds to the most productive uses. China maintained tight control on resident capital outflow, even while building over $1 trillion in foreign exchange reserves. This build-up of reserves can be viewed as a surrogate for the private demand for investments abroad that high-saving Chinese residents would undoubtedly have if they were permitted. (China and South Korea, both aging societies, in 2007 created sovereign wealth funds that would make better use of their official overseas investments.)

Growth of U.S. Foreign Debt Relative to U.S. GDP

Is U.S. foreign indebtedness growing relative to GDP in a way that should pose concerns? To address this question, it is useful first to lay out some simple debt dynamics and then look at the relationship of U.S. external indebtedness to the availability of U.S. assets. This exercise will illustrate why people worry about the U.S. economy's move to a negative net international investment position. But it will also set the stage for a discussion of how the U.S. foreign investment position is affected by differential returns and exchange rate movements in ways that make the U.S. negative net international investment position of much less concern.

As a starting point, the accumulation of current account deficits subtracts from a country's net international investment position, where the net international investment position equals total accumulated U.S. claims on the rest of the world minus total accumulated foreign claims on the U.S. If we let D represent the net international investment position, Y = GDP, r = net return on D, and B the balance in trade in goods and services and unilateral transfers, then the change in net international investment position $\Delta D = B + rD$. Stabilizing D relative to GDP implies that the change in the net international investment position, divided by D, equals the growth in nominal GDP. If we suppose that the growth in nominal U.S. GDP in the coming years will be 5 percent, then a stable ratio of the net international investment position to GDP—that is, the ratio D/Y—would require that $B/D + r = .05$. At the end of 2006, the net international investment position of the United States was –$2.2 trillion, which was 16 percent of U.S. GDP.[5] The current account deficit was around 6 percent of GDP. These numbers suggest little prospect of stabilizing the ratio D/Y anytime soon, if ever, even at low interest payments to

[5] The net international investment position here and below values inward and outward direct investment at market values as estimated by the U.S. Bureau of Economic Analysis rather than at historic or current cost, two alternative approaches to valuation.

Table 5
U.S. Net International Investment Position
(billions of dollars)

		Valuation changes		
	Financial flows[a]	*Exchange rates*[b]	*Other*	*Year-end position*[c]
1989	−50	−15	7	−47
1990	−60	57	−114	−164
1991	−46	5	−55	−261
1992	−96	−75	−20	−452
1993	−81	−22	411	−144
1994	−127	73	63	−135
1995	−86	39	−123	−306
1996	−138	−66	150	−360
1997	−221	−208	−34	−823
1998	−70	68	−246	−1071
1999	−236	−126	395	−1037
2000	−486	−271	213	−1581
2001	−400	−152	−206	−2339
2002	−503	231	157	−2454
2003	−539	416	237	−2340
2004	−557	270	230	−2397
2005	−777	−390	1365	−2199
2006	−833	365	469	−2199

Source: Bureau of Economic Analysis.
Note: Figures may not add due to rounding errors.
[a] Differs from current account balance by the statistical discrepancy; minus indicates net inflow.
[b] Minus indicates net appreciation of dollar relevant for asset revaluation.
[c] Foreign direct investment at market values; excludes derivatives.

foreigners. Calculations of this sort are behind the argument that the U.S. trade deficit is not sustainable.

Several points need to be made, however, about the imprecise fit between these overly simple debt dynamics and actual U.S. circumstances. First, even though the U.S. net international investment position first turned negative in 1987 and had reached -$2.2 trillion at the end of 2006, as shown in Table 5, U.S. investors continue to receive higher earnings from their investments abroad each year than do foreign investors on their investments in the U.S. economy. To put it another way, average yield on U.S. claims significantly exceeds the average yield on foreign claims. Thus, r in the equation above as applied to the United States has actually been negative for many years.

Second, over the period 1990–2005, the cumulative current account deficit was $4.40 trillion, while the increase in the net debtor position of the United States was $2.04 trillion, or less than half. One reason for this difference is the rise in market value of existing claims, which apparently rose much faster for the U.S. claims on the rest of the world than for claims of the rest of the world on the U.S.

economy. In other words, the "total return" on U.S. investments abroad and on foreign investments in the United States exceeds the earnings on those investments recorded in the balance of payments. Average total returns on U.S. overseas investments 1990–2005 (including exchange rate effects, discussed below) was 10.0 percent, compared with a total return of 6.2 percent (in dollars) on foreign investment in the United States.[6] When total returns are counted, the United States on average runs an even larger surplus on investment earnings than that reported in the balance of payments accounts, despite a significantly negative net international investment position. Indeed, these two facts have led Hausmann and Sturtzenegger (2006) to declare that with proper asset valuation, the United States remains a net creditor nation!

The main reason for the difference in returns on U.S. assets abroad compared with foreign assets in the U.S. economy is that equity investments, both direct investment and portfolio equity, make up a substantially larger share of U.S. claims on the rest of the world (61 percent) than is true for foreign investments in the United States (35 percent), as calculated by the Bureau of Economic Analysis. On average, Americans act as risk-taking intermediaries in the world economy, selling fixed-interest claims and investing in equity. Of course, there is no assurance that American returns will continue at this level; and as foreign official holders move funds from reserves into investment accounts, their earnings can be expected to rise.

Movements in the exchange rate will also affect the U.S. net international investment position, because most U.S. assets abroad are not denominated in dollars, whereas most foreign claims on the United States are denominated in dollars. When the dollar depreciates against other currencies, for example, the value of U.S. claims rises relative to foreign claims, and the reverse for appreciation of the dollar (Gourinchas and Rey, 2007).

These combined valuation effects of changing market values and shifting exchange rates can be substantial. In 2005, for example, the U.S. current account deficit was $755 billion, but the U.S. net international investment position actually increased by $200 billion, a reversal in trend that also occurred in 1999 and 2003. The deficit of $811 billion in 2006 produced no change in the net international investment position, on preliminary figures from the Bureau of Economic Analysis. Remarkably, the U.S. net international investment position actually increased from –$2,339 billion at the end of 2001 to –$2,199 billion at the end of 2006, as shown in Table 5, and the ratio of net international investment position to GDP declined from over 23 percent in 2001 to under 17 percent in 2006, despite large and growing current account deficits during this period. Indeed, in absolute value, the ratio of net international investment position to GDP was only four percentage points of GDP higher in 2006 than eight years earlier, in 1998, despite a cumulative current account deficit over those eight years that totaled 38 percentage points of

[6] This calculation is based on the annual average of the change in total private U.S. investment abroad valued at market prices (or total foreign investment in the United States), plus earnings, less new investment. The underlying data are from the Bureau of Economic Analysis.

GDP. The dollar depreciated on balance over this period, and the absolute value of the net international investment position would have equaled 19 percent of GDP at the end of 2006, or 2.6 percentage points higher than it was, if the dollar had not depreciated. Most of the valuation changes, in other words, were not due to exchange rate changes.[7]

Although the discussion in this section has focused on the ability of the U.S. economy to experience additional deficits without incurring an unsustainability problem with its net international investment position, it is worth repeating that there is no reason to expect that foreign investors are about to become sated with U.S. dollar investments, either. As discussed in the earlier section on globalization of finance, total foreign investment in the U.S. economy is still well below where it would be in a "no home bias" world, where foreigners would hold nearly 30 percent of their financial assets in the United States. At the end of 2006, foreigners held 12 percent of their financial assets in the United States (treating interbank claims on a net basis), based on calculations from the Bureau of Economic Analysis and McKinsey Global Institute (2008).

The Expansion of U.S. Financial Assets and Foreign Investment

How much of the U.S. economy do foreigners own? Here it is necessary to look at gross foreign investment in the United States, before netting it against American investment abroad. Total foreign claims on the United States at end-2005 were $11.1 trillion (treating U.S. banks on a net claim basis), which was 89 percent of U.S. GDP during that year and roughly the same percentage of the private non-residential fixed capital stock. The share of foreign ownership relative to GDP or the capital stock has increased steadily for the past two decades. But foreigners do not generally buy the capital stock directly, and their share is not rising nearly as rapidly as one might suppose based on the dollar values alone. A remarkable feature of the U.S. economy is that the total value of financial assets has risen significantly more rapidly than the underlying economy. The Federal Reserve estimates total financial assets in the U.S. economy at the end of 2006 to have been $129 trillion (this figure is of course sensitive to the system of classification used in the flow of funds accounts and does not include derivatives), which is 9.7 times 2006 GDP. Total financial assets were only 4.8 times GDP 40 years earlier, in 1965.

[7] Brender and Pisani (2007), adapting a model by Blanchard, Giavazzi, and Sa (2005), have placed the issue in a two-country portfolio framework that allows for different degrees of financial globalization. They find that as the accumulated deficit of the notional United States grows, the dollar can be expected to depreciate to persuade the notional Europeans to hold more dollar claims (on specified assumptions about portfolio preferences). But the rate of depreciation required—which depends on yield differentials, the degree of risk aversion, and the confidence market participants have in their judgment about future exchange rates—can be very slow, especially at high levels of globalization. A weakness of the framework is that the exchange rate represents the only asset price, and it provides a static setting such that portfolio equilibrium at a stable exchange rate presupposes a balanced current account. As Bernanke (2005) has suggested, however, the framework could be transposed to one involving a stable external debt to GDP ratio in a growing world economy, which would allow a continuing current account deficit.

Put another way, while nominal GDP grew by 7.4 percent a year 1965–2006, total financial assets grew by 9.2 percent a year.

This phenomenon reflects, among other factors, innovations by the financial sector, which is devising financial instruments to appeal to a wider variety of circumstances and tastes. This articulation of financial assets—not all of which prove to be of high quality, as the subprime mortgage debacle demonstrated—appeals to many foreigners as well as to Americans, and foreigners invest in a wide array of financial instruments. While gross foreign investment (at market values, net assets for banks) in the United States reached the magnitude of GDP by 2006, it still amounted to only 11 percent of total financial assets in the United States. The share has risen from 3 percent in the mid-1980s, as globalization of the financial sector has proceeded, but the rise is slow. Gross foreign investment in the United States remains below levels of foreign ownership (relative to GDP) that have been reached in many other countries, as shown in Table 6. While the foreign-owned share of U.S. financial assets cannot grow without limit, it can grow for many years before straining the American capacity to provide financial assets.

The Dangers of Forcing Down the U.S. Trade Deficit

Viewed in the context of globalization and demographic change in other high-income countries, the large U.S. current account deficit is both comprehensible and probably even welfare-enhancing from a global point of view, so long as the funds are productively invested in the U.S. economy.[8] Prospective retirees around the world are making investments in the U.S. economy that are profitable and secure, and which they hope to liquidate later. They are engaging in intertemporal trade (Corden, 2007).

In the near future, the size of the U.S. trade deficit is sure to change for a number of reasons; for example, the large trade surpluses of oil countries are a relatively recent phenomenon, reflecting the sharp rise in oil prices since 2002. Following the increases in oil prices in 1974 and 1979–80, trade surpluses for the oil-exporting nations also rose quickly. But over time, these revenues passed into the income stream of these countries and thence into higher imports. Of course, the trade surpluses of oil-exporting countries will also prove transitory if oil prices recede from the high levels reached in early 2008. If imported oil were to return to the $24 a barrel that prevailed in 2002, the U.S. current account deficit would on that count alone have been reduced by $130 billion in 2006 (before allowing for how reduced foreign earnings from lower oil prices would also reduce U.S.

[8] One reason for concern with a large federal budget deficit in the United States is that it produces high-quality securities, attractive to many foreign investors, that do not reflect productive investment except in few categories of expenditure, such as research and development and some education and public health.

Table 6
Gross and Net International Investment Position, 2005
(ratio to GDP)

	Foreign claims[a]	*Net foreign claims*[b]
Ireland[d]	8.08	−0.19
Hong Kong	4.31	2.53
Singapore	4.12[c]	0.89
Switzerland	3.77	0.99
Netherlands	3.08	0.04
Britain	2.44	−0.13
France	1.74	0.09
Spain	1.45	−0.45
Australia	1.18	−0.55
Israel	1.06	−0.27
Germany	0.99	0.19
Italy	0.97	−0.03
United States	0.90	−0.20
Canada	0.82	−0.13
Mexico	0.64[c]	−0.45
Brazil	0.62	−0.41
Japan	0.50	0.34
Korea[d]	0.48	−0.12
China	0.41[c]	0.13

Source: IMF, *International Financial Statistics.*
[a] Banking claims on a net basis.
[b] Negative means claims by foreigners exceed claims on foreigners.
[c] Banking claims are gross.
[d] 2004.

exports). By the same reasoning, the surpluses of China, Germany, Japan, and other oil-importing countries would have been larger.

My focus in this paper, however, is not on the effects of movements of oil prices on the U.S. current account balance, but rather on the U.S. trade position vis-à-vis China, Japan, Germany, and other countries with durable trade surpluses. If the U.S. trade deficit is to decline significantly, these are the countries whose surpluses will correspondingly need to decline significantly.

Cline (2005) provides a good account of the standard arguments for why the U.S. government in combination with other countries should seek to manage a reduction in the U.S. trade imbalance. Cline's conclusion is that while the U.S. deficit may be sustainable, it is precarious and should be reduced with some urgency to no more than 3 percent of GDP—partly on prudential grounds, to avoid a disorderly "hard landing" (an inexact term too often used and too rarely defined) for the United States and perhaps for the rest of the world economy; and partly on grounds of intergenerational equity, to avoid saddling future Americans with burdensome obligations to foreigners. Cline proposes a package of changes in fiscal and exchange rate policies in many countries to bring about the desired correction.

It is always possible to tell a story of how a condition like the large U.S. trade deficit *could* lead into a deeper economic crisis *if* investors make widespread mistakes and then panic. Such a story could have been (and indeed was) told ten and 20 years ago. However, the actual experience with the U.S. trade imbalances over the last 15–20 years is that both the United States and economies in the rest of the world have adjusted to them rather smoothly. Attempts to manage a forced reduction in the U.S. imbalance may be deeply misguided at best, and at worst might even precipitate the financial crisis and/or recession that its proponents hope to head off.

For example, if we accept Cline's (2005) argument that the current deficit should be pushed down to 3 percent of GDP, this would require that U.S. expenditure drop, relative to output, by three percentage points of GDP. Foreign surpluses, taken together, would have to decline by 3 percent of U.S. GDP, implying a rise in demand relative to output by that amount elsewhere in the world. It is usually argued that to bring about the required substitutions in product demand, the U.S. dollar must depreciate, probably significantly, perhaps by 30 percent on a trade-weighted basis.[9] (Dollar depreciation from 2004 to the end of 2007 was roughly 11 percent, so on these assumptions much further depreciation is required.) For export-oriented economies such as Japan, Germany, and China, currency appreciation is likely to discourage productive investment. Many governments like those in Japan and Germany have been concerned about excessive government deficits in recent years and are engaged in "fiscal consolidation"—that is, reducing their budget deficits. Easier monetary policy, which in Euroland is outside the control of national governments, seems unlikely, because in a world of high capital mobility it tends to weaken currencies, and this policy prescription requires that currencies strengthen relative to the dollar. Ultimately, additional demand in those economies must come from domestic consumers. But what will induce aging consumers to spend more? This policy prescription runs a real risk of reducing world aggregate demand by reducing U.S. expenditures without a corresponding increase elsewhere in the world, precipitating a world recession.

The argument developed here suggests that the U.S. trade deficit can continue for some years, and even rise above its current level. It represents intertemporal trade in a world with aging rich societies. Of course, the U.S. current account deficit cannot rise indefinitely relative to GDP, nor can foreign-owned assets rise indefinitely as a share of total U.S. assets. Eventually the process of financial globalization will slow, probably before the hypothetical state of "no home bias" is reached. Eventually, Asians and Europeans will begin to consume their overseas earnings, to cease acquiring new U.S. assets, and to liquidate their outstanding claims. As this occurs, total expenditure in their countries will rise relative to output, and their surpluses will decline. This process alone will reduce the U.S. trade deficit without any depreciation of the dollar against their currencies. But that point may not be reached for a decade or more, especially if people work longer and continue to save

[9] Several contributions to Bergsten and Williamson (2004) discuss the need for and required extent of a depreciation of the dollar.

past conventional retirement age, as many do. We are witnessing a prolonged process of portfolio adjustment on a global scale.

To be sure, this process of portfolio adjustment is likely to have some bumps. Financial markets are driven by psychological as well as economic factors, and periods of dollar depreciation and appreciation are sure to occur. But the common prescription that the U.S. dollar should be managed to depreciate sharply in the name of reducing the U.S. trade deficit is not without consequences. A large drop in the dollar would reduce exports and depress investment for U.S. trading partners. For this reason, their monetary authorities are likely at some point to intervene to limit the resulting economic downturn, in effect substituting official for private capital investment in the United States, and thereby putting effective limits to any depreciation of the dollar. Moreover, it is not clear how much difference a depreciated U.S. dollar would make to the balance of trade. For example, imagine that China causes its currency to appreciate, as is often proposed. Even if China's currency rose by enough to eliminate its current account surplus altogether, only a fraction of any effect on trade balances would accrue to the United States because the U.S. economy could easily import from other low-income countries. Moreover, what would a currency appreciation large enough to eliminate China's surplus do to China's economy—and those of China's suppliers—where processing exports has been the driving factor behind China's growth?

An attempt to engineer a policy-induced appreciation of many currencies, especially Asian currencies, against the dollar, in all likelihood with advance warning, would provoke large outflows of funds from the United States and from Europe into the target countries, generating financial turmoil throughout eastern Asia and perhaps beyond.

To what extent the dollar actually needs to depreciate will depend on the emerging consumption patterns in the aging societies, in particular on the mix between tradable and nontradable goods and services—keeping in mind that these categories are themselves constantly changing. Even seemingly nontradable services like elder care can have tradable components, like diagnoses of measured symptoms in remote location, and in situ help by migrant workers who remit earnings home. Another possibility involves retirement of Asians and Europeans in the United States, just as some Canadians do now, in which case their dollar assets would cease to be foreign claims on the United States. How much the U.S. dollar needs to depreciate, if at all, will depend on all of these factors of population dynamics, technical change, and continual "transitions" from one new state to another. The necessary depreciation certainly cannot be foretold years in advance of the required adjustment.

The United States has a vibrant, innovative economy. Its demographics differ markedly from those of other high-income countries in that birth rates have not fallen nearly so far and immigration, concentrated in young adults, can be expected to continue on a significant scale. In these respects the United States, although high-income and politically mature, can be said to be a young and even a developing country. It has an especially innovative financial sector, which continually produces new products to cater to diverse portfolio tastes. In a globalized market, the United

States has a comparative advantage in producing marketable securities and in exchanging low-risk debt for higher-risk equity. It is not surprising that savers around the world want to put a growing portion of their savings into the U.S. economy. The U.S. current account deficit and the corresponding surpluses elsewhere, although conventionally described as imbalances, do not necessarily signal economic disequilibria in a globalized world economy, and they may well remain large for years to come.

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