



POLICY DISCUSSION PAPERS

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by Owen F. Humpage

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Since 1992, the United States has enjoyed sustained, rapid economic expansion characterized by rising labor force participation, booming net investment spending for information equipment and computer software, and strong productivity growth. Substantial foreign capital inflows have helped to finance the investment boom as well as a rise in private domestic consumption spending. This paper illustrates how capital inflows can be both a bane and a boon to economic growth.

Owen F. Humpage is an economic advisor at the Federal Reserve Bank of Cleveland. The author thanks Jaime Marquez, Charlie Thomas, and Frank Warnock for detailed comments on an early draft of this paper. Zebo Zakir provided research assistance.

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## Introduction

Between 1992 and 1999, the United States enjoyed sustained, rapid economic expansion characterized by rising labor force participation, booming net investment spending for information equipment and computer software, and strong productivity growth. Substantial foreign capital inflows helped to finance the investment boom as well as a rise in private domestic consumption spending. Global financial crises in Asia, Russia, and Brazil, and the subsequent slowdown in foreign economic growth added momentum to these foreign capital inflows; today, foreigners hold net claims on the United States equal to nearly 12 percent of our GDP.

Policymakers are increasingly more concerned about the sustainability of capital inflows to the United States. Some fear that the growing possibility of an abrupt turnaround in capital flows poses a serious threat to our continued economic prosperity. They contend that slower U.S. economic growth, in conjunction with stronger economic activity abroad, would afford international investors a strong incentive and an attractive opportunity to diversify out of their dollar-denominated assets. If this happens, the dollar will depreciate and U.S. interest rates will rise, with possibly wrenching effects on the way Americans save, consume, and invest.

This *Policy Discussion Paper* illustrates how capital inflows can be both a boon and a bane to economic growth. Using basic accounting identities and a simple model of exchange rate and interest rate determination, I will show how capital inflows have aided the current U.S. economic expansion by financing the acquisition of new capital and by supporting private consumption. I will then discuss one limitation of those capital inflows and suggest how their slowdown or reversal could affect our economic prospects. Trade in capital—like trade in goods and services—benefits all parties, but the economic interdependence increases our vulnerability to world events.

## Financial Inflows and Current Account Deficits

Most Americans take comfort, if not some national pride, in the knowledge that more investment funds have flowed into the United States since 1982 than have flowed out. Many, however, are disconcerted that over the same period, the United States has consistently imported more goods and services than it has exported. Many Americans do not understand that these two events are inseparable aspects of the same economic process. The connection between them stems from an underlying relationship between consumption, saving, and investment. This section will explain the connections among the current account, the financial account, savings, and investment, illustrating the relationships using U.S. data.

Any country that runs a current account deficit will experience a financial inflow.<sup>1</sup> The current account records trade in goods and services, income earned from domestically owned assets abroad, income payments on foreign-owned assets in the home country, and net unilateral transfers. The financial account measures transactions in stocks, bonds, bank accounts, and other types of financial securities. Transactions in the current account represent immediate claims on real economic resources, whereas items in the financial account represent claims on future output. A persistent current account deficit indicates that a country has not exported enough goods and services to pay for its imports, unilateral transfers, and net income payments

1. In June 1999, the Commerce Department began categorizing U.S. international transactions into three groups: the current account, the capital account, and the financial account. The capital account consists of capital transfers and the acquisition or disposal of certain nonfinancial assets that were formally counted as unilateral transfers in the current account. Since they typically amount to less than 1 percent of the current account deficit, this paper largely ignores the capital account.

to foreigners. To settle its balance, the deficit nation must give foreigners financial claims against its future output, or it must reduce its existing claims to their future output. This process creates financial inflows that, in the absence of measurement error, exactly equal the current account deficit. (Similarly, financial outflows must accompany and exactly match any current account surplus.) This relationship is expressed as

$$(1) CA = NF + SD_1.$$

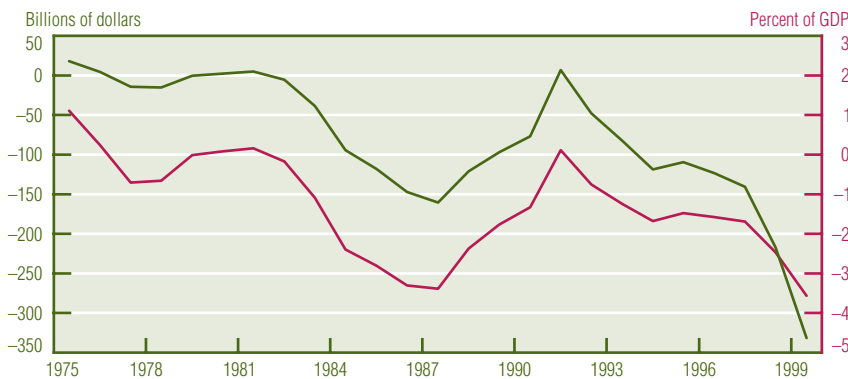
In this equation, *CA* denotes the current account surplus ( $CA > 0$ ) or deficit ( $CA < 0$ ). *NF* represents net financial flows, defined such that  $NF > 0$  refers to net acquisition of foreign assets (financial outflow) and  $NF < 0$  refers to a foreign net acquisition of domestic assets (financial inflow).<sup>2</sup>  $SD_1$  results from the inevitable statistical discrepancies that arise in collecting the data corresponding to equation (1). Economists refer to this equation as the *balance-of-payments identity*.

The U.S. current account deficit has increased almost continuously since the beginning of the current business expansion in 1992, and it has advanced sharply since 1996 (figure 1). In 1999, the U.S. current account deficit equaled an unprecedented \$331.5 billion, or 3.6 percent of GDP. Movements in the trade balance dominate changes in the U.S. current account, and trade shortfalls account for nearly all of the current account deficits (figures 1 and 2). Unilateral transfers are typically a deficit item, amounting to a fairly constant 0.5 percent of GDP. Net income receipts, traditionally a surplus item for the United States, became a deficit in 1998.<sup>3</sup>

2. I have reversed the sign on the financial inflows and outflows from that found in the official balance of payments because doing so simplifies the graphical exposition that follows. Table 1 maintains the standard balance-of-payments practice of counting financial outflows (inflows) as negative (positive) items.

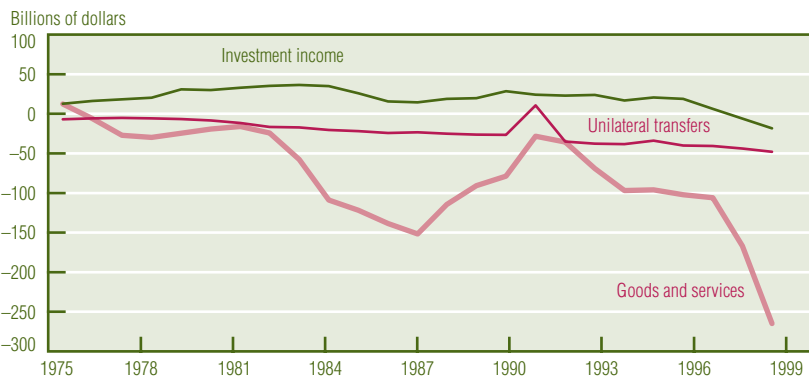
3. Because they represent transactions that do not involve a quid pro quo, unilateral transfers are essentially gifts. Net income receipts include payments on cross-border asset holding and a small amount of labor income.

FIGURE 1 THE U.S. CURRENT ACCOUNT



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

FIGURE 2 COMPONENTS OF THE U.S. CURRENT ACCOUNT



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

Table 1 reports U.S. balance-of-payments data from 1996 through 1999, a period when the current account deficit increased sharply. An increase in foreign investments in the United States—rather than a decrease in U.S. investments abroad—accounts for the financial inflows that accompanied the \$208 billion rise in the current account deficit over this period. These financial inflows were primarily associated with foreign direct investments in the United States. Such investments represent foreign ownership rights to the domestic capital stock that confer a significant say in the management of that capital, and they typically reflect multinational firms' investments. Net inflows of portfolio investments resulted as foreigners increased their overall purchases of other U.S. securities and as U.S. investors slowed their acquisitions of foreign securities.

Bank-related capital flows, which are volatile, also registered an overall net inflow between 1996 and 1999 as foreigners increased net claims on U.S. banks and as U.S. residents slowed their claims on foreign banks. Official capital—assets owned by governments or their central banks—registered a declining net inflow because foreign countries acquired fewer dollar-denominated international reserves on balance in 1996–99.

TABLE 1 U.S. BALANCE OF PAYMENTS (BILLIONS OF DOLLARS)

	1996	1997	1998	1999	Change, 1996–99
<b>I. Current account</b>	<b>-123.3</b>	<b>-140.5</b>	<b>-217.1</b>	<b>-331.5</b>	<b>-208.2</b>
Trade balance	-10.2	-105.9	-166.9	-265.0	
Income balance	18.9	6.2	-6.2	-18.5	
Unilateral transfers	-40.1	-40.8	-44.0	-48.0	
<b>II. Total financial flows</b>	<b>157.8</b>	<b>268.0</b>	<b>146.8</b>	<b>323.4</b>	<b>165.6</b>
U.S.	-413.9	-488.9	-335.4	-430.2	-16.3
All other countries	571.7	757.0	482.2	753.6	181.9
<b>Official reserves</b>	<b>133.4</b>	<b>17.9</b>	<b>-26.9</b>	<b>51.6</b>	<b>-81.8</b>
U.S.	6.7	-1.0	-6.8	8.7	2.0
All other countries	126.7	18.9	-20.1	42.9	-83.8
<b>Other U.S. government assets</b>	<b>-1.0</b>	<b>0.1</b>	<b>-0.4</b>	<b>2.8</b>	<b>3.8</b>
<b>Direct investments</b>	<b>-5.4</b>	<b>1.0</b>	<b>40.3</b>	<b>124.6</b>	<b>130.0</b>
U.S.	-149.8	-119.0	-136.0	-128.6	21.2
All other countries	86.5	106.0	186.3	275.5	189.0
<b>Portfolio investments</b>	<b>135.4</b>	<b>225.3</b>	<b>130.7</b>	<b>182.5</b>	<b>47.1</b>
U.S.	-149.8	-119.0	-136.0	-128.6	21.2
All other countries	285.2	344.3	266.7	311.1	25.9
<b>Bank-related</b>	<b>-75.1</b>	<b>7.9</b>	<b>4.2</b>	<b>-2.5</b>	<b>72.6</b>
U.S.	-91.6	-141.1	-35.6	-69.9	21.7
All other countries	16.5	149.0	39.8	67.4	50.9
<b>Other financial flows</b>	<b>-29.6</b>	<b>15.8</b>	<b>-1.0</b>	<b>-35.6</b>	<b>-6.0</b>
U.S.	-86.3	-122.9	-10.6	-92.3	-6.0
All other countries	56.8	138.7	9.6	56.7	-0.1
<b>III. Capital account transactions</b>	<b>0.7</b>	<b>0.4</b>	<b>0.6</b>	<b>-3.5</b>	<b>-4.2</b>
<b>IV. Statistical discrepancy</b>	<b>-35.2</b>	<b>-127.8</b>	<b>69.7</b>	<b>11.6</b>	<b>46.8</b>

NOTE: Standard balance-of-payments accounting treats capital outflows as a negative item and capital inflows as a positive item, allowing the accounts to sum to zero. In the text, I have reversed the signs (see footnote 3).

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; and author's calculations.

### Savings, Investment, and Capital Flows

A country that runs a current account deficit, such as the United States, is spending more for consumption, investment, and government purchases than it is currently producing, and it is financing the excess expenditure through net capital inflows. Beginning from this relationship, a straightforward adjustment to the national income accounts demonstrates that a country experiencing a current account deficit ( $CA < 0$ ) and a capital inflow ( $NF < 0$ ) is saving ( $Sp + Sg$ ) less than is necessary to finance its gross private domestic investments ( $I$ ):

$$(2) \quad Sp + Sg - I = CA = NF + SD_2.$$

In equation (2),  $Sp$  refers to gross private domestic savings and  $Sg$  is gross public savings (the total federal, state, and local government budget surplus);  $SD_2$  includes statistical discrepancies associated with measuring savings and investment.

Since 1992, the ratio of gross domestic savings to GDP has increased nearly 2.7 percentage points, while the ratio of gross domestic investment to GDP has risen 3.5 percentage points (see table 2). The increase in the former is solely the result of a rise in total government savings amounting to 6.4 percentage points of GDP. The ratio of gross private savings to GDP declined 3.7 percentage points. As these data indicate, the inflow of foreign capital ( $NF < 0$ ) that has accompanied the U.S. current account deficit since 1992 has permitted more investment and more private consumption than would otherwise have been possible.<sup>4</sup>

Data available through 1998 indicate that the entire 3.3 percentage point increase in the investment-to-GDP ratio in 1992–98 went toward the acquisition of new capital goods rather than higher costs of maintaining the existing capital stock.<sup>5</sup> Moreover, half the increase in investment during that period appears as the acquisition of equipment and software. Advocates of the “new economy” typically recognize investment in computers and other

4. During much of the 1980s, a decline in the ratios of investment to GDP and domestic savings to GDP accompanied the rising current account deficit. Foreign capital inflows financed private consumption and governmental expenditures in the United States.

5. See U.S. Department of Commerce, *Survey of Current Business*, table 5.2.

TABLE 2 SAVINGS, INVESTMENT, AND THE CURRENT ACCOUNT (PERCENT OF GDP)

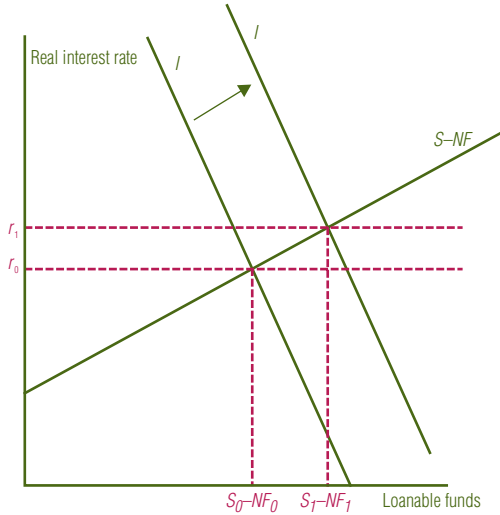
	Gross domestic savings	Gross private domestic savings	Government savings	Gross domestic investment	Net foreign investment	Statistical discrepancy
1981	21.0	20.2	0.8	21.6	0.2	0.8
1982	19.2	20.9	-1.7	19.3	-0.2	-0.1
1983	17.2	19.6	-2.4	19.4	-1.1	1.1
1984	19.6	21.0	-1.4	22.2	-2.4	0.3
1985	18.3	19.8	-1.4	21.2	-2.8	0.1
1986	16.5	18.1	-1.6	20.7	-3.3	0.8
1987	17.1	17.7	-0.6	20.4	-3.4	-0.1
1988	18.3	18.5	-0.1	19.7	-2.4	-1.0
1989	17.6	17.4	0.2	19.5	-1.8	0.1
1990	16.8	17.5	-0.7	18.6	-1.3	0.4
1991	17.0	18.4	-1.4	17.0	0.1	0.2
1992	15.9	18.4	-2.5	17.2	-0.8	0.5
1993	15.6	17.5	-1.8	17.7	-1.2	0.8
1994	16.4	17.0	-0.6	18.8	-1.7	0.7
1995	17.0	17.1	-0.1	18.7	-1.5	0.2
1996	17.3	16.5	0.8	19.1	-1.6	0.3
1997	18.3	16.4	1.9	19.8	-1.7	-0.2
1998	18.8	15.7	3.1	20.5	-2.5	-0.7
1999	18.7	14.7	3.9	20.7	-3.6	-1.5
<b>Change,</b>						
1981–92	-5.1	-1.8	-3.3	-4.4	-1.0	-0.3
1992–99	2.7	-3.7	6.4	3.5	-2.8	-2.0
<b>Total</b>	<b>-2.3</b>	<b>-5.5</b>	<b>3.1</b>	<b>-0.9</b>	<b>-3.8</b>	<b>-2.3</b>
1992–98	2.8	-2.8	5.6	3.3	-1.7	-1.3

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

information-processing equipment as its foundation. This suggests that a substantial portion of the capital inflows accompanying our current account deficit helped to finance investment in information technology in the United States (see Pakko [1999], Hervey and Kouparitsas [2000], and Hervey and Merkel [2000]).

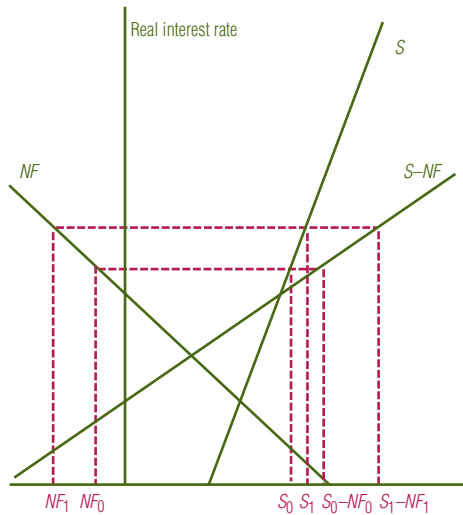
FIGURE 3 INTERNATIONAL IMPLICATIONS OF A U.S. PRODUCTIVITY INCREASE

A: Establishing the Interest Rate



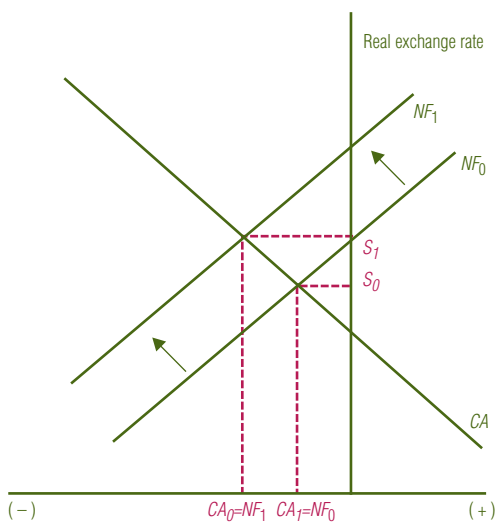
A technology-induced rise in the productivity of capital increases the demand for loanable funds. This appears as a shift in  $I$  to the right. As the demand for loanable funds increases, real interest rates and the quantity of savings rise.

B: Effects on Domestic Saving and Net Financial Flows



Higher interest rates increase the total quantity of loanable funds, which consists of domestic savings less any net foreign investment. (Negative  $NF$  represents a capital inflow.) As interest rates rise, domestic savings and foreign capital inflows increase.

C: Maintaining the Balance-of-Payments Identity



$I$  Investment  
 $S$  Savings  
 $NF$  Net financial flows  
 $CA$  Current account balance

An increase in capital inflows in response to higher domestic interest rates appears as a shift to the left in  $NF$ . Capital inflows result in a real dollar appreciation and an increase in the current account deficit.

SOURCE: Author's calculations.

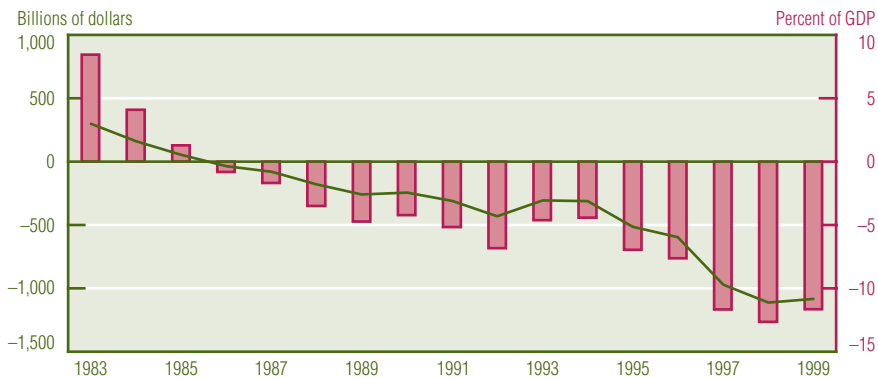
*Dollar Appreciation and the Current Account*

The preceding analysis showed how the current account, the financial account, savings, and investment are related using ex post equilibrium conditions. This section will show how changes in real interest rates and real exchange rates maintain that equilibrium. The model seems to confirm that U.S. productivity advances and exogenous foreign financial inflows have shaped recent U.S. economic developments.

Figure 3 presents the relationship among savings, investment, and international financial flows in three interrelated panels. Panel A depicts the market for loanable funds, which establishes the domestic real interest rate. Financial inflows contribute to the supply of loanable funds in this model. For a given real interest rate, panel B shows the breakdown of domestic savings and net foreign investment flows and their relationship to the total supply of loanable funds ( $S - NF$ ). Panel C illustrates how the real exchange rate helps to maintain the balance-of-payments identity (equation [1]).

The model produces different patterns among interest rates, exchange rates, loanable funds, net foreign financial flows, and the current account balance, depending on the exogenous event that initiates the adjustment. To conform to recent U.S. economic developments, I have assumed an exogenous gain in productivity. As the productivity of capital improves, the demand for loanable funds increases; this is represented in panel A by a shift to the right in line  $I$ . If all else remains constant, real interest rates in the United States will rise and attract a greater inflow of foreign financing ( $NF < 0$  in figure 1). Panel B suggests that higher domestic interest rates will encourage both foreign financial inflows and domestic savings, and the total quantity of loanable funds will increase. Before foreigners can invest in the United States, they must acquire dollars, and their increased demand will cause the dollar to appreciate. Consistent with this effect, panel C shows that when financial inflows rise ( $NF$  shifts to the left), the dollar appreciates in real terms. This appreciation, which raises the foreign-currency price of U.S. exports and lowers the dollar price of U.S. imports, fosters a larger U.S. current account deficit. In this simple model, changes in both real interest rates and real dollar exchange rates maintain both the savings–investment identity (equation [2]) and the balance-of-payments identity (equation [1]).

**FIGURE 4** U.S. NET INTERNATIONAL INVESTMENT POSITION



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.



Consistent with the model's predictions, the dollar appreciated 16 percent on a real trade-weighted basis between June 1992 and December 1999, while the current account deficit widened nearly \$284 billion. Net foreign financial inflows—not an exogenous net increase in import demand—seem to have initiated events leading to the wider U.S. current account deficit. Investment spending increased, but in contrast to the model's prediction, real U.S. interest rates have not generally risen. Real interest rates in the model are a proxy for the real expected rate of return on assets in the United States.<sup>6</sup> Exogenous capital inflows resulting from financial crises in Southeast Asia and Russia, however, would have tended to reduce real interest rates in the United States (see Van Wincoop and Yi [2000]). The model discussion does not incorporate separate exogenous financial inflows, which would shift  $S - NF$  to the right.

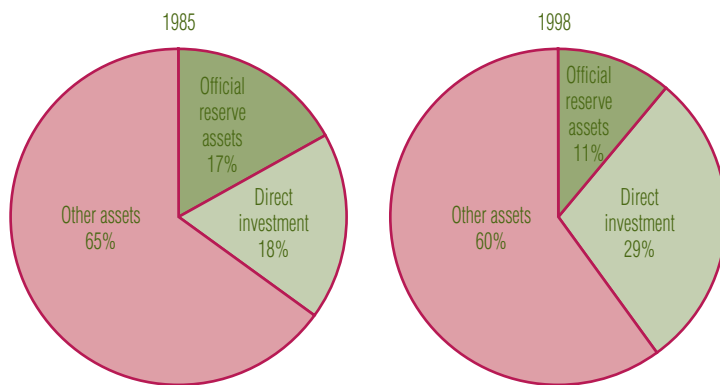
6. Rising U.S. stock prices suggest increasing expected returns from investments in the associated firms.

### Is the Current Account Deficit Sustainable?

While persistent financial inflows have helped to support investment and consumption in the United States, they have given foreigners substantial claims on our future output in the form of stocks, bonds, and other financial instruments. Since the late 1980s, the stock of foreign claims against this nation has exceeded the stock of U.S. claims on other countries; by 1999, our negative net international investment position equaled 11.7 percent of GDP (see figure 4).

Our net international investment position cannot continue to decline as a share of GDP without limit. At some point, international investors will become reluctant to hold our debt without adequate compensation for the perceived risk of doing so. Then, real interest rates will rise and the exchange value of the dollar will fall, forcing a change in the saving and investment patterns that have produced our persistent current account deficits and financial inflows (see Obstfeld and Rogoff [2000] and Mann [1999]). When economists ask if the current account is sustainable, they are really questioning at what point and how fast will these adjustments kick in. This section will develop a framework for thinking about this adjustment process by first considering what limits the decline in our net international investment position and then considering what adjustments might follow.

FIGURE 5 | COMPOSITION OF FOREIGN ASSETS



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

### Net International Investment Position

Many factors contribute to deterioration in a country's net international investment position. This section, which builds on Howard (1989), will illustrate factors that have been important in recent U.S. experience, highlighting fluctuations in the net investment income component of the current account and valuation adjustments to asset stocks. The next section will explain why this development may have important implications for the adjustment in our current account.

The United States' net international investment position ( $IP$ ) refers to the difference between the stock of U.S.-owned assets abroad ( $A$ ) and the stock of foreign-owned assets in the United States ( $A^*$ ). The year-by-year change in a country's net international investment position reflects net financial flows ( $NF$ ), valuation adjustments due to changes in asset prices, exchange rates, and other adjustments and methodological changes ( $VA$ ):

$$(3) \quad \Delta_t IP = IP_t - IP_{t-1} = NF_t + VA_t.$$

Alternatively, by substituting from the balance-of-payments (equation [1]) we have

$$(4) \quad \Delta_t IP = IP_t - IP_{t-1} = CA_t + VA_t - SD_{1t},$$

where  $SD_{1t}$  captures any statistical discrepancy in the balance-of-payments accounts and  $t$  is a time variable.

Since 1989, the value of foreign-owned assets in this country has exceeded the value of U.S.-owned assets abroad, implying a negative net international investment position (figure 4). In 1999, the difference equaled nearly \$1.1 trillion, or 11.7 percent of GDP. Because of this negative position, analysts frequently refer to the United States as a net debtor country, although not all foreign-owned assets in the United States are debt instruments. Almost 30 percent represent foreign direct investments in this country (figure 5)—that is, equity shares in U.S. enterprises that confer decision-making authority on foreigners. The proportion has increased from 18 percent in 1985. In addition, 11 percent of our liabilities are the official dollar reserves of foreign governments. While these generally consist of debt-style instruments, they may be less responsive than private portfolios to changes in expected returns.

All investors—private and government—require a return on their investment, and this return may be sensitive to perceived risks that a country faces in meeting its obligations. A key factor in determining these risks is the country's burden of servicing outstanding net foreign claims. Economists often assess the debt-service burden of a country's negative net international investment position by comparing it to GDP, because outstanding financial instruments ultimately represent claims on a country's output. Consequently, equation (4) becomes

$$(5) \quad \Delta_t \left( \frac{IP}{Y} \right) = \frac{IP_t}{Y_t} - \frac{IP_{t-1}}{Y_{t-1}} = \frac{CA_t}{Y_t} + \frac{VA_t}{Y_t} - \frac{SD_{1t}}{Y_t},$$

where  $Y$  refers to nominal GDP. Hence, the ratio of net foreign claims to a country's ability to service those claims (equation [5])—not the absolute level of those claims (equation [4])—is relevant to evaluating a country's net international investment position.

Equation (5) suggests that a country could maintain a current account deficit indefinitely, so long as it does not rise faster than GDP.<sup>7</sup>

7. Valuation adjustments and the statistical discrepancy are unlikely to provide an important and steady offset to the current account deficit.

With some rearranging, equation (5) expresses the change in the ratio of net international investment to GDP in terms of net trade flows, unilateral transfers, statistical discrepancies, gains from the stock of domestic investments abroad, and the costs of servicing (plus the valuation adjustments to) the stock of existing foreign investments at home:

$$(6) \quad \Delta_t \left( \frac{IP}{Y} \right) = \left( \frac{TB_t}{Y_t} \right) + \left( \frac{U_t}{Y_t} \right) - \left( \frac{SD_{1,t}}{Y_t} \right) \\ + \left( \frac{r_{A,t} + v_{A,t} - g_t}{1 + g_t} \right) \left( \frac{A_{t-1}}{Y_{t-1}} \right) - \left( \frac{r_{A,t}^* + v_{A,t}^* - g_t}{1 + g_t} \right) \left( \frac{A_{t-1}^*}{Y_{t-1}} \right).$$

The net international investment ratio changes, one for one, with changes in the ratios of the trade balance ( $TB_t$ ), net unilateral transfers ( $U_t$ ), and the statistical discrepancy ( $SD_{1,t}$ ) to GDP. The two subsequent sets of bracketed terms relate the net international investment ratio to a comparison of income earnings and valuation gains on U.S.-owned foreign assets with those on foreign-owned U.S. assets. In equation (6),  $r_{A,t}$  is the income earned in year  $t$  from U.S.-owned foreign assets, expressed as a percentage of the previous year's stock of assets. Similarly,  $v_{A,t}$  is the valuation adjustment expressed as a percentage of the stock of the previous year's assets. The asterisks designate corresponding terms for foreign-owned assets in the United States. GDP growth, which ultimately affects the denominator of the net international investment ratio, is given by  $g_t$ .

Table 3, which illustrates the components of equation (6), shows the factors contributing to the changes in the net international investment ratio. Since 1981, persistent U.S. trade deficits more than accounted for the 22.5 percentage point decline in the net international investment ratio. (Unilateral transfers to foreigners remained fairly constant at 0.5 percent of GDP.)

TABLE 3 THE DECLINING U.S. INTERNATIONAL INVESTMENT POSITION (BILLIONS OF DOLLARS)

	Net investment position	Trade balance	Unilateral transfers	Statistical discrepancy	Gains on U.S.-owned foreign assets <sup>a</sup>	Gains on foreign-owned U.S. assets <sup>a</sup>
1981	10.9	-0.5	-0.4	-0.7	-2.1	-0.3
1982	10.1	-0.7	-0.5	-1.1	0.9	1.6
1983	8.4	-1.6	-0.5	-0.5	0.9	0.9
1984	4.1	-2.8	-0.5	-0.4	-1.9	-0.4
1985	1.3	-2.9	-0.5	-0.4	1.2	1.0
1986	-0.8	-3.1	-0.5	-0.6	2.1	1.2
1987	-1.7	-3.2	-0.5	0.2	2.3	-0.7
1988	-3.5	-2.2	-0.5	0.4	1.7	0.4
1989	-4.7	-1.7	-0.5	-0.9	1.7	1.6
1990	-4.2	-1.4	-0.5	-0.3	1.4	-0.7
1991	-5.2	-0.5	0.2	0.9	2.1	1.8
1992	-6.8	-0.6	-0.6	0.8	-0.4	-0.6
1993	-4.6	-1.0	-0.6	0.0	3.6	-0.2
1994	-4.4	-1.4	-0.5	0.2	0.9	-1.4
1995	-7.0	-1.3	-0.5	0.1	2.2	3.0
1996	-7.6	-1.3	-0.5	0.4	2.2	0.7
1997	-11.7	-1.3	-0.5	1.5	0.8	1.6
1998	-12.7	-1.9	-0.5	-0.8	2.2	1.6
1999	-11.7	-2.9	-0.5	-0.1	4.0	-0.3
Change,						
1983-96	-18.5	-25.7	-7.0	-1.4	20.9	8.2
1996-99	-4.1	-6.0	-1.5	0.6	7.0	2.8
1981-99	-22.5	-31.7	-8.5	-0.7	27.9	11.0

a. Includes income and valuation adjustments.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

Substantial net gains (income and valuation adjustments) from the existing stock of foreign investments, however, mitigated the overall effect of trade deficits on the change in the net international investment ratio.

This positive influence seems to be waning. Since 1995, income payments on foreign-owned assets in the United States have risen much faster than income received from U.S.-owned assets abroad, and the balance (net investment income) turned negative in 1998 (see figure 2). Table 4 illustrates two factors that have contributed to this development: First, the spread by which the value (at current costs) of foreign-owned assets in the United States exceeds the value of U.S.-owned assets abroad continues to widen (compare columns 4 and 7). Second, while the rate of return (income earnings) on U.S.-owned assets abroad has continued to exceed that on foreign-owned assets in the United States, the average spread has narrowed somewhat. In contrast to net income payments, valuation adjustments have tended to exert a net positive influence on our net investment position, though they are volatile and do not always work in our favor.

As foreign financial inflows continue into the United States and our international investment position deteriorates, the rate of return on foreign-owned assets in the United States will rise further if investors become uncertain about the future exchange value of the dollar or about U.S. policies that may affect asset returns. This could have important implications for the U.S. economy.

TABLE 4 | NET GAINS OF THE U.S. INTERNATIONAL INVESTMENT POSITION (BILLIONS OF DOLLARS)

	U.S.-owned foreign investments			Foreign-owned U.S. investments			GDP growth
	Income return	Valuation adjustment	Share of GDP <sup>a</sup>	Income return	Valuation adjustment	Share of GDP <sup>a</sup>	
1981	9.3	-4.4	33.3	9.4	1.2	20.4	12.0
1982	9.2	-2.1	32.0	8.5	3.2	21.1	4.1
1983	8.1	3.3	34.0	6.9	5.7	23.9	8.5
1984	9.0	-3.8	34.3	8.1	1.5	25.8	11.3
1985	8.2	3.1	30.6	7.0	4.1	26.6	7.1
1986	7.5	5.5	30.6	6.6	3.5	29.3	5.7
1987	7.4	6.7	33.0	6.2	-1.8	33.8	6.5
1988	8.3	4.7	34.7	6.8	2.0	36.4	7.7
1989	8.8	3.6	35.8	7.0	4.8	39.3	7.5
1990	8.3	1.3	37.7	6.1	-2.0	42.5	5.7
1991	6.8	2.0	37.5	5.2	2.5	41.8	3.2
1992	5.8	-1.3	38.2	4.2	-0.1	43.4	5.6
1993	5.8	9.5	36.9	4.0	0.6	43.7	5.1
1994	6.0	2.5	41.5	4.9	-1.8	46.1	6.2
1995	7.1	3.4	42.5	5.8	5.8	46.9	4.9
1996	6.5	4.1	46.6	5.2	1.7	53.6	5.6
1997	6.4	1.5	51.3	5.5	3.6	58.9	6.2
1998	5.7	4.1	54.9	4.8	3.3	66.6	5.5
1999	5.4	7.5	58.0	4.8	0.4	70.7	5.7
Average,							
1981-96	7.6	2.4	36.2	6.4	1.9	35.9	6.7
1997-99	5.8	4.4	54.7	5.0	2.4	65.4	5.8
Total	7.3	2.7	39.1	6.2	2.0	40.6	6.5

a. Lagged one year.

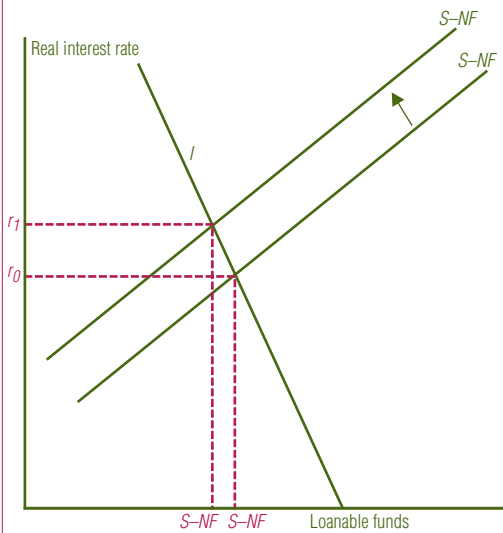
SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; and author's calculations.

*Risk Premium and Foreign Growth*

Concern about the growing risks of investing in the United States would result in higher real U.S. interest rates and a dollar depreciation. Figure 6 uses the loanable-funds and balance-of-payments models to illustrate the repercussions of this contingency. Belief that investing in the United States entails increasing risk would reduce foreign financial inflows to this country, forcing real U.S. interest rates ( $r_{a,t}^*$  in equation [5]) to rise relative to rates abroad ( $r_{A,t}$  in equation [5]), causing the dollar to depreciate. As panels A and B illustrate, greater perceived risk causes  $NF$  to shift to the left, reducing the total supply of loanable funds ( $S-NF$ ). As financial

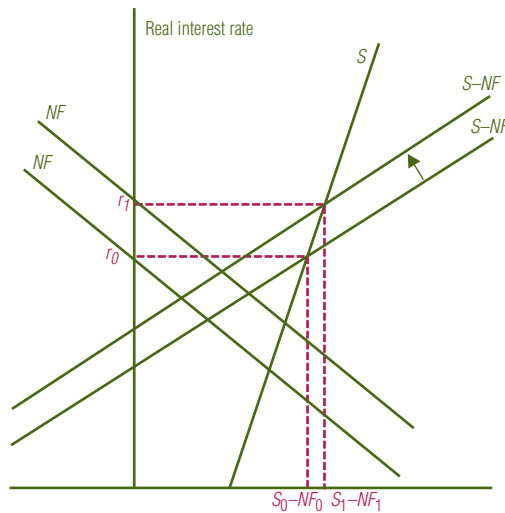
FIGURE 6 EFFECTS OF A RISK PREMIUM

A: Establishing the Interest Rate



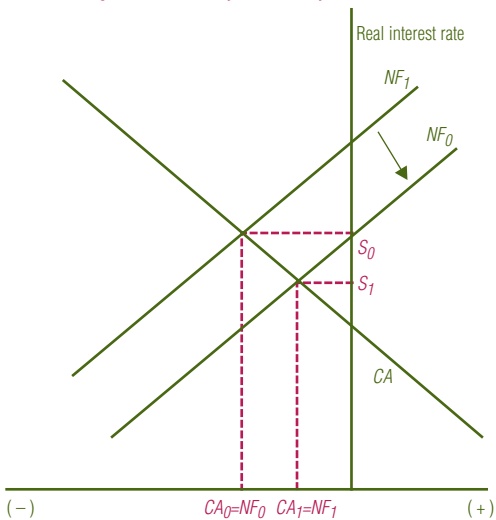
A decline in financial inflows also reduces the total supply of loanable funds, represented by a shift to the left in  $S-NF$ . U.S. interest rates will rise, and the quantity of investment will fall.

B: Effects on Domestic Savings and Net Foreign Investment



The belief that investing in the U.S. entails more risk reduces capital inflows. This appears as a shift to the right in  $NF$  and a shift to the left in  $S-NF$ . The quantity of domestic savings will rise as the interest rate increases.

C: Maintaining the Balance-of-Payments Identity



The smaller capital inflow resulting from an increase perception of risk appears as a shift to the right in  $NF$ . The exchange rate depreciates, and the current-account deficit narrows.

- $I$  Investment
- $S$  Savings
- $NF$  Net financial flows
- $CA$  Current account balance

SOURCE: Author's calculations.

flows to the United States slow,  $NF$  in panel C shifts to the right, and the dollar must depreciate to maintain the balance-of-payments identity. As a result of these adjustments, interest-sensitive spending and investment in the United States would decline, domestic savings would rise, and the trade deficit would narrow.

Economists typically think of the risk premium as a function of the outstanding stock of net foreign claims on a country relative to its GDP—that is, its ability to service those claims. This suggests that economic adjustments would continue until the net international investment ratio ceased to decline or returned to a ratio that restored investor confidence.<sup>8</sup>

### *Magnitude of the Adjustment*

While it is fairly easy to predict the direction of economic adjustments in the face of investor uncertainty, it is more difficult to forecast the extent of the adjustment. One method follows the approach of Milesi-Ferretti and Razin (1996). By setting equation (5) equal to zero and rearranging the terms, we can see how large the trade surplus must be to prevent a further decline in the net international investment ratio:

$$(7) \quad \left( \frac{TB_t}{Y_t} \right) = - \left( \frac{U_t}{Y_t} \right) - \left( \frac{SD_{1,t}}{Y_t} \right) - \left( \frac{r_{A,t} + v_{A,t} - g_t}{1 + g_t} \right) \left( \frac{A_{t-1}}{Y_{t-1}} \right) \\ + \left( \frac{r_{L,t} + v_{L,t} - g_t}{1 + g_t} \right) \left( \frac{A^*_{t-1}}{Y_{t-1}} \right).$$

This approach assumes the other variables are either predetermined (the lagged investment terms) or of little consequence to the adjustment process (unilateral transfers and the statistical discrepancy).

The ex post critical value for the U.S. trade balance changes substantially from year to year because of the high variation in some of the components of equation (7). Based on average values in 1997, 1998, and 1999, the United States could prevent a further decline in the net international investment ratio by maintaining a trade deficit of roughly 0.5 percent of GDP (\$52 billion). A small deficit is sustainable because of the net gains we receive on our foreign investments; however, these gains recently have been attributable solely to positive valuation adjustments, which are highly volatile and not consistently favorable. If we assume that valuation adjustments have no net influence, the United States would need to immediately maintain a trade surplus of nearly 0.2 percent of GDP (\$17 billion) to prevent further decline in its net investment ratio. Given that further deterioration in the income component of the current account is likely, the critical value of the trade surplus will undoubtedly grow. Because the response of imports and exports to price changes is somewhat inelastic, a substantial exchange rate change might accompany any swing to a U.S. trade deficit (see Obstfeld and Rogoff [2000]).<sup>9</sup>

### *When?*

It is virtually impossible to say how high the U.S. net international investment ratio could rise before international investors become reluctant to hold financial claims against the United States without a significant risk premium. Canada, for example, has maintained current account deficits—often exceeding 3 percent of GDP—almost continuously since 1969.<sup>10</sup> As a result, Canada's net international investment position approached 35 percent of GDP in the early

8. Using a simple partial-equilibrium model, Mann (1999, chapter 10) provides some empirical estimates of the sustainability of the U.S. current account.

9. For estimates of various trade elasticities, see Hooper, Johnson, and Marquez (1998).

10. All data in this section were obtained from the International Monetary Fund's *International Financial Statistics* database.

1990s, substantially above the United States' current 11.7 percent ratio. Despite broad fluctuations in the Canadian dollar's real effective value, no sustained depreciation accompanied these deficits. Moreover, although the spread between real interest rates in Canada and in the United States sometimes widened when the current account deficit increased relative to GDP, the correlation is weak at best.

Similarly, Australia has experienced a long string of current account deficits averaging 3 percent of GDP. Australia's negative net international investment position is approximately 45 percent of GDP—more than triple that of the United States. In contrast to Canada, Australia has experienced a sustained depreciation of its real effective exchange rate, but the spread between real Australian and U.S. interest rates seems uncorrelated with the size of the current account deficit. In neither Canada's nor Australia's recent experience have the persistent current account deficits and growing negative net international investment position obviously disrupted their economies.<sup>11</sup> These comparisons do not support fears that a rapid and severe adjustment is imminent.

### Interdependence and Vulnerability

When financial flows cross borders, countries need not finance gross domestic investment solely from gross domestic savings. International access to funds enables countries to finance a greater amount of investment at a lower cost than would be possible in autarky; it also fosters portfolio diversification and provides greater opportunity for consumption smoothing. Consequently, as financing becomes more mobile across countries, current account surpluses and deficits should become larger and, perhaps, more volatile. Domestic savings and domestic investment should become less closely correlated.<sup>12</sup>

Such a pattern is increasingly evident in the United States. While overall levels of gross domestic savings and gross domestic investment (private plus government) remain highly correlated, the relationship between annual changes in these series has become substantially weaker. Between 1959 and 1980, the correlation coefficient between changes in gross domestic savings and changes in gross domestic investment was 0.965, whereas this statistic dropped to 0.735 between 1980 and 1999. The data indicate that changes in domestic consumption and saving patterns have less effect on changes in investment patterns (and vice versa) than in the past because of the availability of foreign financing. Consumption and investment can proceed more smoothly because of financial mobility.<sup>13</sup>

This growing international interdependence, however, increases the U.S. economy's vulnerability to financial outflows. Net financial flows to the United States respond to international growth rate differentials. If concerns about risk create a desire among international investors to diversify, relatively faster foreign economic growth—which many now anticipate—might provide an opportunity to do so. Unfortunately, we have no objective basis for determining when that might occur, how quickly it might happen, or how much it might affect interest rates and exchange rate. It does not, at present, seem inevitable.

11. Using a wider sample of countries, Mann (1999, p. 156) contends that current account deficits reached approximately 4.2 percent of GDP.

12. Obstfeld and Rogoff (1996, pp. 27–28) provide some evidence that the cross-country correlation between savings and investments for 1982–91 is weaker than the correlation for 1960–74 reported by Feldstein and Horioka (1980).

13. The need to eventually service foreign financial inflows implies that savings and investment (as ratios to GDP) cannot permanently diverge. Using data spanning 38 years through 1998, Olivei (2000) finds that U.S. investment, rather than U.S. savings, eventually adjusted to current account imbalances.

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