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# **What Forces Drive International Trade, Finance, and the External Deficit?**

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## Whatever Happened to the “Twin Deficits”?

*One of the central goals of [the new (1989) administration's] economic policy should . . . be to eliminate the current account deficit. . . . The only assured and constructive means to achieve these results is for the United States to eliminate the federal government's structural budget deficit. . . .*

—C. Fred Bergsten, *America in the World Economy: A Strategy for the 1990s* (1988)

*[T]he growth of the U.S. trade deficit in the 1980s primarily reflects the influence of several interrelated macroeconomic developments. . . . Growth of U.S. spending relative to production and income implied a deterioration in the national saving-investment balance, which, in turn, owed much to the persistence of a large Federal deficit. . . .*

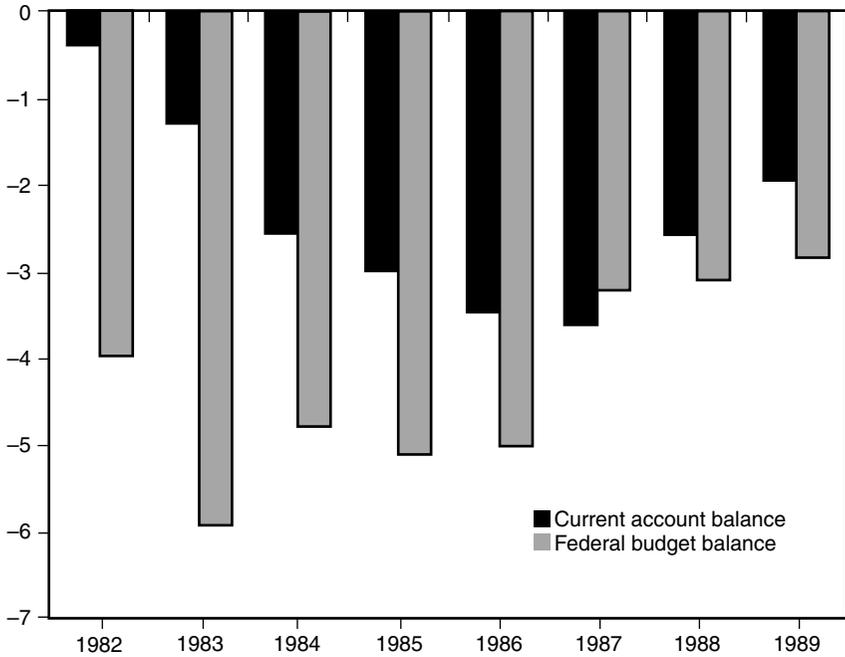
—Council of Economic Advisers, *Economic Report of the President* (1988)

From 1980 to 1986, the federal budget deficit increased from 2.7 percent of GDP to 5 percent of GDP (\$220 billion) and the current account deficit increased from 0 to 3.5 percent of GDP (\$153 billion). The two were called the “twin deficits” because they increased about the same amount and they derived from some of the same economic fundamentals.

Many policymakers and economists were concerned about both deficits, in part because each implied a growing debt burden and growing investment-service payments. The current account deficit was a particular concern, because investment-service payments go abroad (instead of

**Figure 2.1 The twin deficits: A perspective from the times**

percentage of GDP



Sources: US Department of Commerce, *International Transactions Tables*; Council of Economic Advisers, *Economic Report of the President*.

immediately back into the domestic economy). Moreover, as the external deficit continued to grow and add to the value of external obligations, policymakers were concerned that participants in international financial markets might flee dollar assets and precipitate a crash of the dollar if they suddenly decided that the United States owed foreign investors too much (see, for example, Marris 1985).

Policymakers had at their disposal clear legislative channels to reduce the federal budget deficit: Reduce spending or raise taxes. These legislative policies also work through changing private-sector behavior to affect the external balance, but many people thought that the most direct way to reduce the current account deficit was to reduce the federal budget deficit.

Of course, during the 1990s the federal budget deficit has been brought to zero, but the current account deficit generally has trended toward a larger negative number, reaching \$233 billion in 1998, or 2.7 percent of GDP. Why were the two deficits linked in the 1980s—and what separated them in the 1990s?

## Why Were the Two Deficits Thought to Be Twins?

Several ways of inspecting the data and approaching analysis supported the twin-deficits hypothesis—including simply plotting the course of the two deficits over time (figure 2.1), in which they appeared to move together. More compelling, however, was the support found in analysis using the national income and product accounts (NIPA) framework and in the analysis of economic relationships common to the two deficits. Collectively these comprised what appeared to be a strong case for linkage.

### Accounting Identities Supported Their Relationship

The twin-deficits hypothesis was embodied in the accounting relationships of the national income and product accounts framework. The NIPA framework decomposes national income ( $Y$ , which is equal to domestic production, that is, GDP) into macroeconomic aggregates that correspond to important groups of spenders in the economy: consumer household spending ( $C$ ), business investment spending on equipment, facilities, and inventory ( $I$ ), government spending ( $G$ ), spending by foreigners on domestically produced goods and services (exports,  $X$ ), and spending by domestic households, businesses, and government on foreign-produced goods and services (imports,  $M$ ).<sup>1</sup>

The NIPA framework can be rearranged to highlight the relationship between the fiscal budget and the current account. In any economy, total savings finances investment ( $S = I$ ). Total savings in an economy has three components: the amount saved by the private sector, the amount saved by the public sector, and the amount saved by foreigners and invested in the national economy. Private savings ( $S_p$ ) is the difference between disposable income (income less taxes) and consumption ( $S_p = Y - T - C$ ). Public savings (the negative of the fiscal budget deficit) is the difference between tax revenues and government spending ( $S_g = T - G$ ). Foreign savings is the amount of extra imports the national economy can buy above the value of the exports sold abroad ( $S_f = M - X$ ), which is approximately the negative of the current account balance.

Starting with the savings-investment equilibrium and then substituting and recombining the identities<sup>2</sup> yields an identity that highlights the relationship between the twin deficits but also reveals another key relationship, that between investment and private savings:  $(I - S_p) = S_g + S_f = (T - G) + (M - X)$ . This accounting identity says that if private savings and

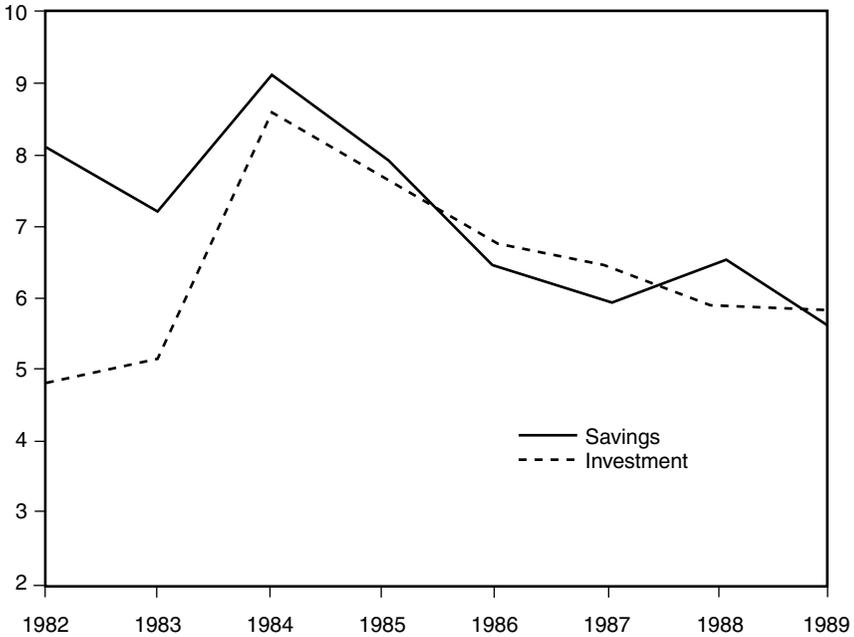
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1. This is the familiar formula:  $Y = GDP = C + I + G + X - M$ .

2. Start with the savings-investment equality and substitute the identities:  $I = S = S_p + S_g + S_f = (Y - T - C) + (T - G) + (M - X)$ .

**Figure 2.2 Net private savings and investment, 1982-89**

percentage of GDP



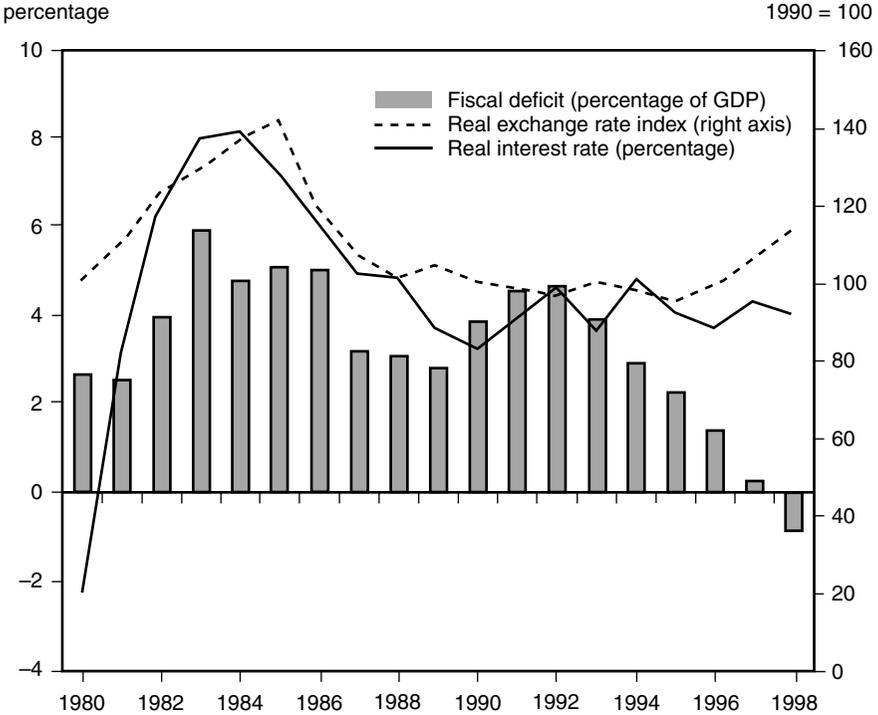
Sources: US Department of Commerce, *Survey of Current Business*; Council of Economic Advisers, *Economic Report of the President*.

domestic investment are about equal, or at least move by about the same amount, then the fiscal and external deficits would be twins—about the same size and moving in the same way. Indeed, from 1983 to 1989, private savings and investment did move together (figure 2.2).

### **Economic Reasoning Suggested That Common Forces Were Driving Both Deficits**

In addition to the accounting identities, economic reasoning suggested that the deficits responded to the same economic fundamentals. During the 1980s, expansionary fiscal policy (as measured by the growing fiscal deficit) mixed with tight monetary policy to raise interest rates sharply and then keep them high. The high interest rates as well as a robust US economy encouraged international investment in US and dollar-denominated assets, and the exchange value of the dollar appreciated (figure 2.3). The appreciated dollar made US exports more expensive for foreigners to buy, and made imports cheaper. In addition, imports rose quickly as the US economy burst out of recession with a GDP growth rate of 7 percent.

**Figure 2.3 Fiscal deficit, interest rate, and the dollar, 1980-98**



Note: Real exchange rate is the nominal exchange rate adjusted by trade-weighted CPI inflation. Real interest rate is the 30-year Treasury bond rate adjusted for US inflation.

Sources: US Council of Economic Advisers, *Economic Report of the President*; US Department of Commerce, *International Transactions Tables*; IMF, *International Financial Statistics*.

Hence the external deficit grew larger on account of pressures originating from the appreciation of the dollar as well as from the robustness of the expansion.<sup>3</sup> The deficits were thus twinned through the mechanism linking fiscal deficit to interest rates to exchange rate to external deficit.

This chain of causality could have unwound the same way—a smaller fiscal deficit reduces upward pressure on interest rates, the demand for dollar-denominated assets falls, the dollar depreciates, and the external deficit narrows—and indeed, it appeared that this logic held for a number of years in the late 1980s and early 1990s (see figure 2.3). But as the 1990s unfolded, this apparent chain of causality broke; the fiscal deficit shrank, but interest rates and particularly the exchange value of the dollar did not come down as far.

3. The role of income growth and that of changes in relative prices, including through changes in the exchange value of the dollar, are further discussed in chapter 8.

## What Happened to Separate the Twins?

There are several answers to the question of what happened to the twins. One is that they were not really twins. In particular, from the perspective of the NIPA identities there were key changes in the behavior of private savings and investment in the 1990s, engendered in part by changes in monetary policy at home and abroad. A second answer is that the critical links between the fiscal deficit, interest rates, and the exchange value of the dollar were less tight than was generally thought. Finally, to take a somewhat different perspective on the puzzle, the dynamics of the US external balance depend importantly on the relative rates of growth of the United States and its trading partners; while the United States has grown rapidly since the mid-1990s, our trading partners generally have not.

### **In the 1990s, Investment Rates Grew Continuously, But Household Savings Collapsed; Foreign Savings Had to Fill the Gap**

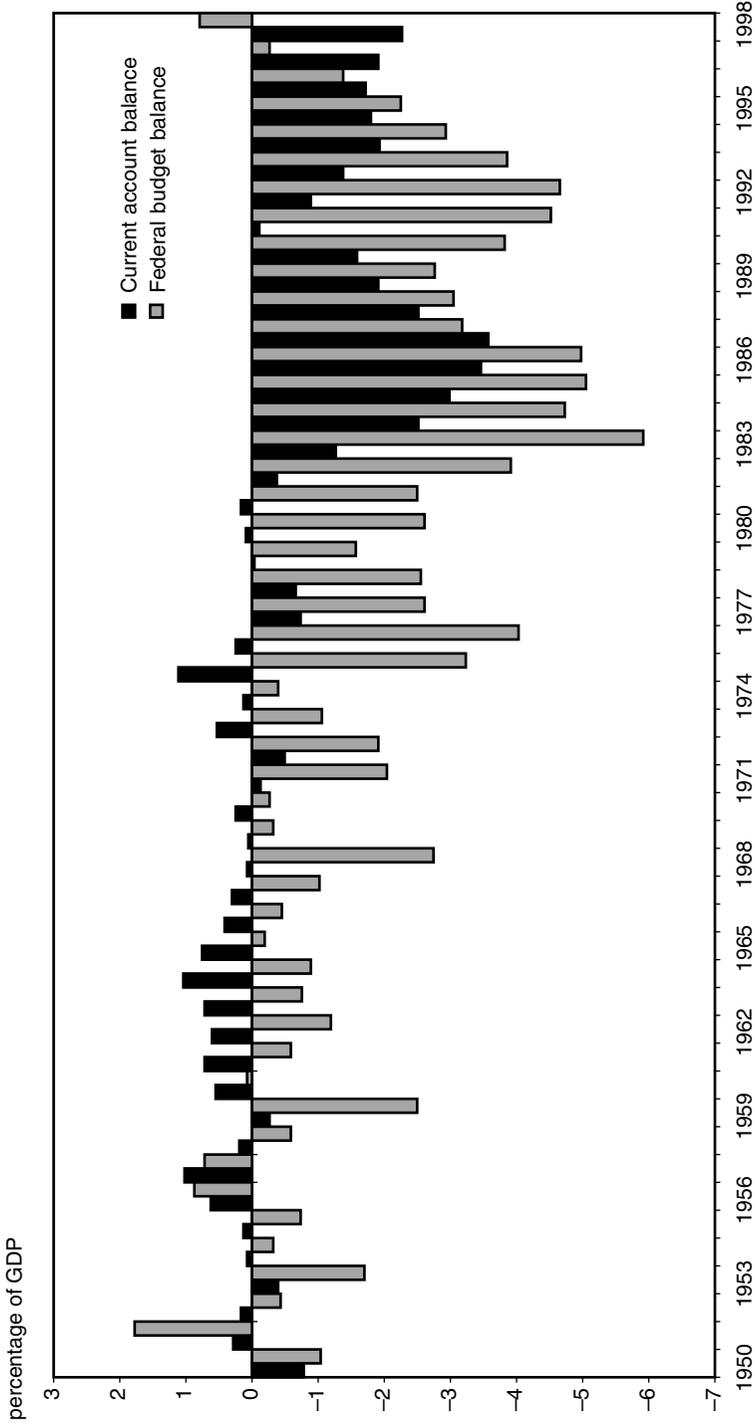
A first observation is that the relationship between the two deficits that is graphically discernible in the 1980s is less obvious when the figures are plotted over a longer time frame (figure 2.4). Long periods of current account surpluses coincided with moderate budget deficits in the 1950s and 1960s, and the very large fiscal deficits in the 1970s coincided with only negligible current account deficits. In this light, the twin deficits of the 1980s appear more an aberration than a common occurrence.

From a substantive viewpoint, the two deficits separated in part because private savings and business investment did not move together in the 1990s as they had in the 1980s, and in part because private savings and public savings moved in opposite directions. In the NIPA framework, the external deficit equals *national savings* (public plus private) minus investment. In the 1990s, although the fiscal deficit contracted (which means that public savings was rising), private savings was drifting downward. In addition, the savings rate for households, which is one component of private savings, declined dramatically (figure 2.5).<sup>4</sup>

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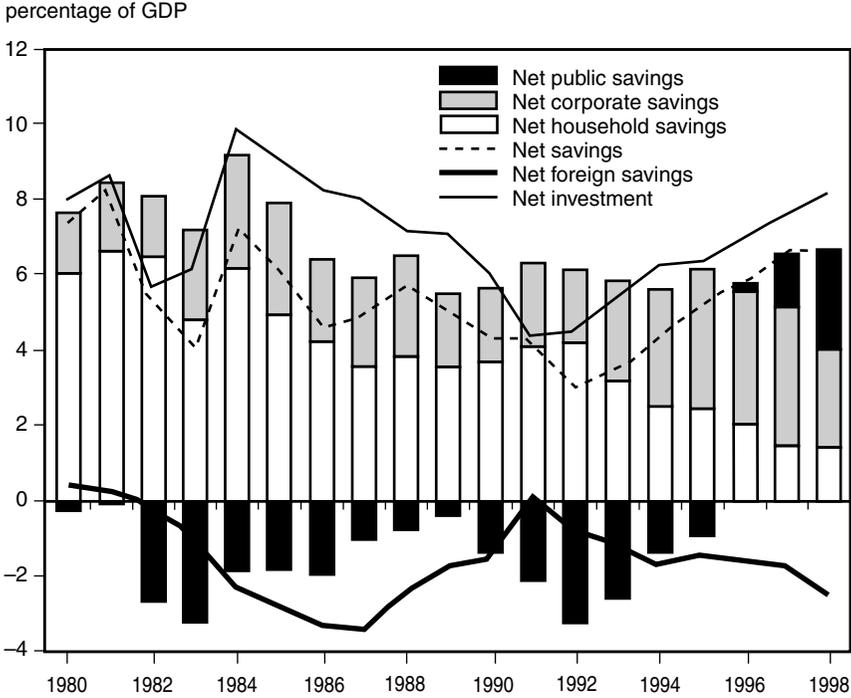
4. The official household savings rate is a residual calculation from the NIPA definitions: personal disposable income minus personal consumption outlays. Its relationship to the economic concept of savings is questionable, and its trend behavior over time has become quite controversial, particularly as the measured rate fell below zero in early 1999. Gale and Sabelhaus (1999) show that if the NIPA definition is adjusted for other forms of retirement saving (such as federal and state retirement plans), the decline in the household savings rate is somewhat less dramatic, and the level remains above zero. By including consumer durables in household savings as well as adjusting for inflation and certain taxes, the rate of decline levels out even more. Finally, including capital gains makes a huge difference; indeed, it reverses the measured decline and, by this measure, the household savings rate in the highest in the past 40 years! However, the capital gains component is highly volatile.

**Figure 2.4 The “twin deficits”: A longer perspective**



Sources: US Department of Commerce, *International Transactions Tables*; Council of Economic Advisers, *Economic Report of the President*.

**Figure 2.5 US investment and savings by sector, 1980-98**



Source: US Department of Commerce, *Survey of Current Business*.

When the economy emerged from the 1981-82 recession, the rate of business investment shot up, as did the rate of private savings. Soon after, however, starting in 1984 and continuing through the 1991 recession, national savings and investment rates slowed. Even though the fiscal deficit improved as the recession ended, private savings rates declined. The gap between national savings and investment was filled by foreign savings.

After the 1991 recession, the disparity among the three components of national savings increased. The corporate savings rate (loosely speaking, profits) rose smartly. The fiscal deficit narrowed substantially as growth resumed and continued robustly. Throughout the 1980s and 1990s, however, the household savings rate generally continued to decline, and indeed it collapsed at the end of 1998.

These changes in the composition of national savings might matter for the evolution of the external deficit. Input-output accounts for the United States suggest that the import intensity of government output is about 17 percent, whereas the import intensity of consumer spending on goods is about 58 percent, and the import intensity of investment spending on goods is about 50 percent. Moreover, in contrast to the 1980s expansion,

in which investment rates generally fell, economic activity in the 1990s has been powered by a continuous rise, to nearly a 17 percent rate, in real net investment for producers' durable equipment. Consequently, an increase in public savings that is matched by a fall in private savings would not wash out in the external accounts but would appear to favor imports. Overall, the sum of private and public savings has been insufficient by about 1 percent to finance all the desired private investment.

Finally, there is a statistical discrepancy of an additional 1 percent of GDP in the accounting for spending and saving in the US economy (see the addendum to this chapter for more details). Hence foreign savings of about 2 percent of GDP have been flowing into the United States to support private business investment and overall spending in the US economy.

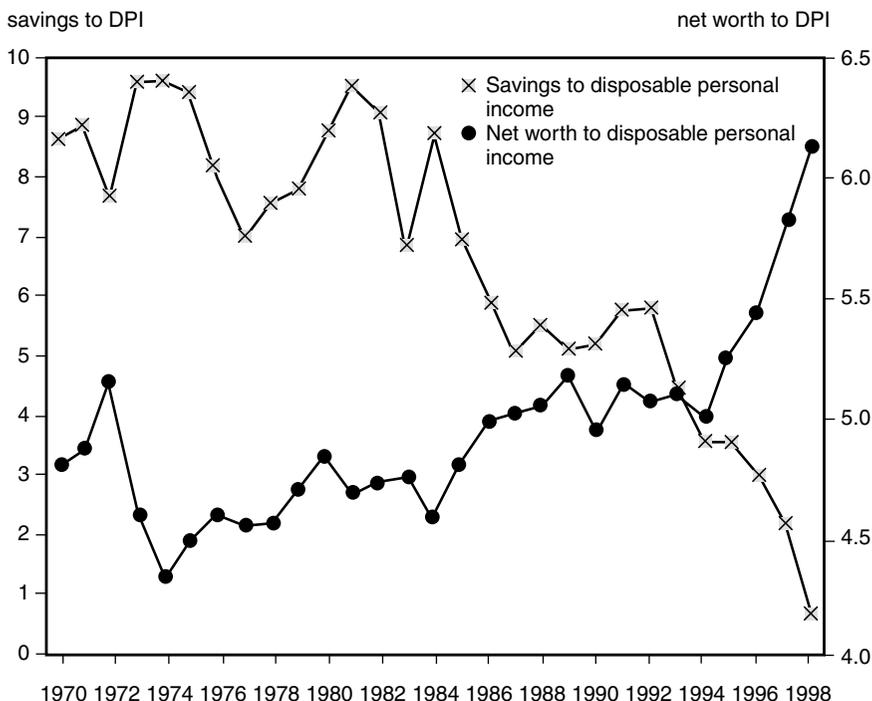
Why has business investment increased as a share of GDP but household savings dropped so dramatically? A factor common to both is the dramatic increase in the value of corporations' equity, which comes from the continued robust growth of the US economy, the low rate of inflation, and the attractiveness to domestic and foreign savers alike of the US stock markets. The US savers who hold the highest fraction of their wealth in portfolio investments have tended to save a smaller fraction of their income as the value of their wealth rises. The unprecedented rise in the US stock market has tended to make investors more confident of the future value of their wealth, inducing them to reduce the portion of their income that they save (figure 2.6). At the same time, the climate of robust consumption and low inflation has encouraged business investment, so the savings-investment imbalance has widened.

## **An Increased Demand for Dollar Investments and High US Growth Rates Helped to Increase the External Deficit**

The strength of the US economy has attracted foreign investment and has increased the use of the dollar as a vehicle for making those investments. Hence as the fiscal deficit contracted (reducing upward pressure on interest rates), the dollar exchange rate initially depreciated but then appreciated. The continued foreign demand for US financial assets unlinked the "twins" by breaking down the chain of logic that connected the fiscal deficit, interest rates, the exchange value of the dollar, and the external balance.

Initially, as the fiscal deficit narrowed, interest rates did come down and the exchange value of the dollar depreciated (see figure 2.3). However, into the 1990s the rapid increase in US stock market valuation attracted foreign investors, who helped bid up the markets as well as the value of the dollar (figure 2.7). In addition, the dollar solidified its position as the lead currency of issuance in the market for international debt securities (table 2.1). Hence the assumption that the reduction of the fiscal deficit would reduce interest rates, help to depreciate the dollar, and thus

**Figure 2.6 Wealth and savings, 1970-98**



DPI = disposable personal income

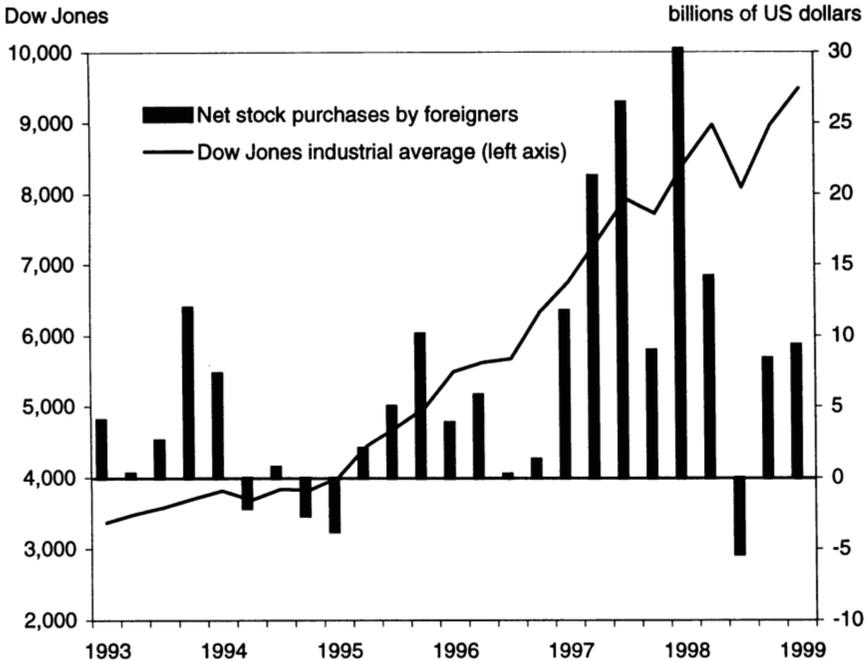
Note: Wealth or net worth refers to assets minus liabilities of households and nonprofit organizations.

Sources: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the US*; *Federal Reserve Bulletin*; US Department of Commerce, *Survey of Current Business*.

close the external deficit was not borne out. In sum, the explanation that the external deficit widened because of rising domestic investment and falling private savings is consistent with this explanation based on the flows of foreign capital.

These approaches to analyzing the links between the fiscal and external deficits based on the domestic focus of the NIPA framework and on the financial focus of international capital flows do not adequately emphasize the key foreign ingredient in the determination of external balance: the difference between GDP growth here and abroad. This issue is addressed in more depth in chapter 8, but to state it briefly here, the magnitude of the external deficit depends in part on how strong is US demand for imports relative to foreign demand for US exports. When US economic ac-

**Figure 2.7 Stock prices and foreign capital inflows, 1993-99 (1Q)**



Source: US Department of Commerce, *International Transactions Tables*.

tivity is more robust than that of its trading partners, US import growth exceeds US export growth. As noted earlier, in the 1990s US economic activity generally has been more rapid than that of its major industrial-country trading partners, and has been spurred mostly by domestic demand (investment and consumption). Activity abroad generally has been slower and has been powered more by exports and less by domestic demand. In sum, the explanation that the US external deficit is caused by the *level and composition* of spending and savings *here* is consistent with the explanation that the external deficit is a consequence of the *difference* between GDP growth *here and abroad*.

## Conclusion

### Summary

- The fiscal deficit and the external deficit looked like twins in the 1980s, and their linkage was supported by accounting identities as well as by

**Table 2.1 Outstanding amounts and net issues of international debt securities, 1993-98 (percentage of total)**

Currency	Amounts outstanding						Net Issues					
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
US dollar	41.0	37.3	35.1	39.1	44.3	44.9	15.9	25.7	23.8	48.4	56.5	57.5
Japanese yen	13.4	16.9	17.7	15.2	13.0	11.5	17.1	37.4	34.8	15.7	5.8	-4.3
EMU currencies	18.9	21.2	23.0	23.3	21.8	22.5	45.7	30.7	28.0	29.0	30.0	21.5
Total value (billions of US dollars)	2,038	2,442	2,803	3,154	3,542	4,234	198	285	312	543	596	592

EMU = European Monetary Union

Sources: IMF, *International Capital Markets* (September 1998); Bank for International Settlements, *International Banking and Financial Market Developments* (November 1998).

the logic of the economic chain running from fiscal deficit to higher interest rates to an appreciated dollar to a larger external deficit.

- However, in the 1990s the two deficits began to decouple. First, as investment rates strengthened and the economy boomed, the fiscal deficit declined. The national savings rate did not rise, however, because the household savings rate declined. Foreign savings continued to fill the gap. One causal factor common to all these changes is the dramatic rise in the value of US stocks, which has spurred tax revenues and investment but which reduces the tendency of households to save.
- In addition, the strength of the US economy has attracted foreign investment. The chain of causality from fiscal deficit to interest rates to exchange value of the dollar to external balance did not unwind in the 1990s as expected, in part because the robust US economy attracted substantial foreign inflows, which kept interest rates low but raised the dollar exchange rate.
- Finally, the external deficit continues to grow because the US economy is growing faster and consumers are demanding more imported products than is the case for its trading partners.
- Hence the explanations for the disappearance of the “twin deficits” relationship based on NIPA identities, on the economic logic of rate of return and financial flows, and on external balance and relative growth rates are all consistent.

## Policy Discussion

- Fiscal discipline has been a key underpinning of the economic success of the 1990s, and the unraveling of that discipline could imperil it. The

policy challenge right now, however, is the downward trend in the household savings rate. The dramatic fall in the savings rate in the past year is a reflection of a strong economy and a robust stock market. But for the longer term, households are at risk of an imbalance between debt burdens and expected future earnings. It is dangerous to assume that the capital gains enjoyed over the past few years will continue indefinitely.

- Raising the household savings rate has long been both a policy issue and a policy challenge. We should use this period of economic bounty to explore new ideas to ensure the sustainability of US consumption and economic growth. Clearly, households do respond to higher expected returns—witness the surge into the stock market as major indexes appear to move ever upward. Consequently, a reexamination of the disincentives to save current income in more stable investment vehicles is in order. Also, we should be careful to account properly for the savings that individuals do undertake.

## Addendum: The NIPA Statistical Discrepancy

Most macroeconomic stories are best analyzed using the perspective of economic relationships over history, and the story of what happened to the “twin deficits” is based on an analysis of data over time. But looking at a snapshot of the data can also reveal information that may contribute to an understanding of the trends that are used to assess macroeconomic relationships.

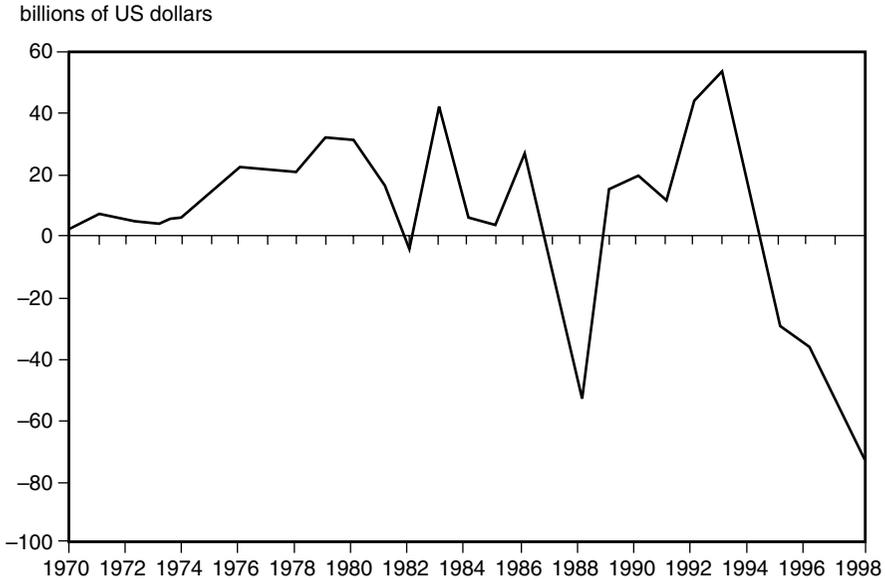
An example relevant to the present case can be found in the relationship between the current account and the national savings-investment imbalance at the end of 1998. On the basis of national income and product accounts data, the difference between national savings and investment as a share of GDP is about 1 percent. Hence the current account deficit should be about 1 percent of GDP. But, as calculated from trade and investment data, the current account deficit is a bit more than 2 percent of GDP. The so-called statistical discrepancy makes up the 1 percentage point difference between these two measures.<sup>5</sup>

The statistical discrepancy in this case is the difference between gross domestic *product*—GDP—which is the value of production by labor and property in the United States, and gross domestic *income*—GDI—which is the value of the costs incurred and income accrued to the inputs that pro-

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5. There is also a statistical discrepancy for external accounts between the current account balance and the recorded capital flows, which is discussed in chapter 9. Chapter 7 addresses alternative ways of measuring the current account deficit.

**Figure 2.8 Statistical discrepancy between GDP and GDI, 1970-98**



GDI = gross domestic income

Source: US Department of Commerce, *Survey of Current Business*.

duce the output. These two values should be the same. However, the two measures of the total economy come from very different source data, and so the two have differed, sometimes by large amounts (figure 2.8).

The difference between GDP and GDI may be related to high-technology products and activities. For example, the treatment of computer software differs between the two concepts. In the calculation of GDI, which is based in part on business tax returns, a software company is treated as a final producer that earns income and increases GDI. In GDP calculations, software purchases are considered an intermediate input and hence are included only implicitly in the value of final products. In addition, certain new business services, such as Internet access and cellular telephone services, which generate business taxes and income and thus augment GDI, are not yet included in consumption surveys and hence are not included in GDP calculations (see *Survey of Current Business*, August 1999, p. 19).

How the statistical discrepancy might be allocated to consumption and investment affects the macroeconomic identities, particularly the savings-investment balance. (Of course, if we knew how to allocate it, it would not be a statistical discrepancy.) If the bulk of the statistical discrepancy repre-

sents additional consumption (e.g., cell phones and unrecorded service-sector transactions), proper accounting would reduce net national savings. On the other hand, if software should be counted as a final investment product and not netted out as an intermediate input, the share of investment in GDP would be rising even faster than estimated. Either way, incorporating the statistical discrepancy into the macroeconomic identities helps to make the identities hold arithmetically at a point in time. Deciding how to allocate the statistical discrepancy could alter the underlying economic stories told in using data over time.