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Twin Deficits, Twenty Years Later *Leonardo Bartolini and Amartya Labiri*

Recent declines in the U.S. current account and fiscal balances have sparked renewed debate over the twin-deficit hypothesis, which argues that a larger fiscal deficit, through its effect on national saving, leads to an expanded current account deficit. This study reviews international evidence on the hypothesis, finding some support for it. However, the link observed between fiscal and current account deficits is too weak to support the view that deficit reductions in the United States can play a major role in correcting the nation's current account imbalance with the rest of the world.

In recent years, the twin-deficit hypothesis—the argument that fiscal deficits fuel current account deficits—has returned to the forefront of the policy debate. The argument first emerged in the 1980s, when a significant deterioration in the U.S. current account balance accompanied a sharp rise in the federal budget deficit. Now, with the U.S. current account and fiscal balances plunging by 3 and 4 percent of GDP, respectively, from 2001 to 2005, the view that the two deficits might be closely linked has attracted new interest.¹ Changes in U.S. fiscal policy have also been viewed as playing a key role in widening the nation's current account deficit since the turn of the millennium and thus in determining whether global current accounts will be rebalanced over the next decade.²

According to the twin-deficit hypothesis, when a government increases its fiscal deficit—for instance, by cutting taxes—domestic residents use some of the income windfall to boost consumption, causing total national (private and public) saving to decline. The decline in saving requires the country either to borrow from abroad or reduce its foreign lending, unless domestic investment decreases enough to offset the saving shortfall. Thus, a

wider fiscal deficit typically should be accompanied by a wider current account deficit.

Casual observation suggests that the twin-deficit hypothesis accurately captures the U.S. experience in the 1980s and the first years of the new century. However, the hypothesis does not explain the U.S. record of the late 1990s, when a substantial current account deficit coexisted with a federal budget surplus. Nor does it accord with Japan's experience during the 1990s, or the experience of many other countries undergoing sharp swings in fiscal policy over the past two decades. Many empirical studies have also failed to find a strong relationship between fiscal and current account deficits, perhaps because they have used data on a very limited number of countries or have focused on periods that were too short to yield reliable evidence in a variety of environments and over time.³

This edition of *Current Issues* contributes to the debate on the twin-deficit hypothesis by analyzing the link between fiscal and current account deficits across a larger sample of countries and over a longer period than examined in earlier studies. Reviewing the international record over the past thirty years, we revisit both key components

of the twin-deficit hypothesis: the relationship between fiscal policy and private saving, and the response of current account balances to fiscal policy changes. Our findings confirm the broad wisdom that private saving indeed tends to decline when fiscal policy loosens. However, this response may have weakened over time. Saving now tends to fall by about 35 cents in response to each extra dollar of fiscal deficit, down from the decline of 40 to 50 cents that researchers have reported for earlier periods. In addition, much of the decrease in national saving is matched by a drop in the current account, whose deficit rises by 30 cents for each extra dollar of fiscal deficit.

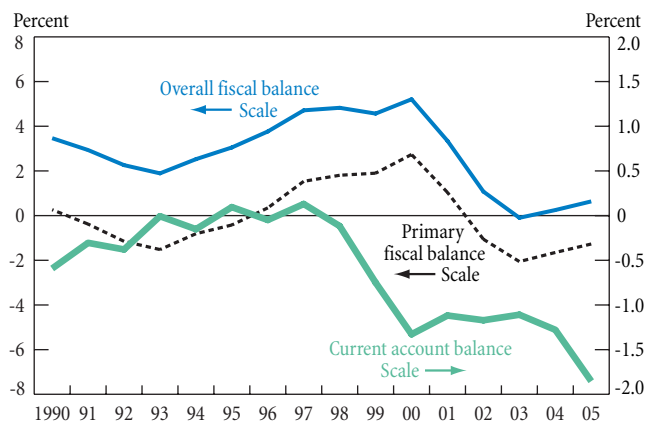
These results offer some support for the twin-deficit view. They suggest, however, that the effects of fiscal policy on saving and the current account balance are too weak for deficit reductions in the United States to play a central role in correcting the nation's current account imbalance with the rest of the world.

Fiscal Policy and Current Account Deficits in Industrial Countries, 1990-2005

Most industrial countries enhanced their fiscal accounts significantly during the 1990s. Fiscal balances started to improve in the Organisation for Economic Co-operation and Development (OECD) area as a whole around 1993 (see chart).⁴ By 2000, OECD countries' primary deficits—overall fiscal deficits net of interest payments—had turned to surpluses, increasing by more than 4 percent of GDP since their 1993 trough. Overall fiscal balances grew by a similar amount.

Since the turn of the millennium, however, much of this fiscal improvement has been reversed, with the largest OECD countries making especially sharp U-turns. As the chart shows, from 2000 to 2004 the primary fiscal balances of the

Fiscal and Current Account Balances in OECD Countries, 1990-2005



Source: Organisation for Economic Co-operation and Development (OECD).

Note: Primary fiscal balances equal overall fiscal balances net of interest payments.

industrial area as a whole deteriorated by nearly 5 percent of GDP. This poor performance was led by a massive decline in fiscal balances in the United States, the United Kingdom, Germany, and Italy.

At first glance, post-1990 data on fiscal and current account deficits for the largest industrial countries offer some support for the twin-deficit hypothesis. Dividing these data over the critical 1990-2000 and 2000-2005 periods, Table 1 reveals that most of the changes in fiscal and current account balances (specifically, those depicted in blue) accord with the predictions of the twin-deficit view. However, there are notable exceptions. For example, improving U.S. fiscal accounts from 1992 to 2000 were associated with a worsening U.S. current account. The stability of Japan's current account surplus during the 1990s, despite the country's sharply declining fiscal condition, is another exception to the twin-deficit hypothesis. Indeed, Japan's experience in the 1990s is frequently cited as evidence that changes in private saving can offset changes in fiscal policy, leaving a country's current account balance largely unaffected.

While the evidence presented in Table 1 is informative, it provides only a weak basis for assessing the validity of the twin-deficit hypothesis. The reason is that such a hypothesis pertains to the response of current account deficits to *isolated* changes in fiscal deficits, keeping factors such as government debt and expenditures and other variables associated with business cycles unchanged. Similarly, Table 1 displays only historical data, without attempting to control for any variable that might have influenced the link between fiscal and current account deficits. It is possible, for instance, that the U.S. current account deficit of the late 1990s might have turned into a surplus had the U.S. economy stagnated in this period

¹A country's fiscal balance measures the difference between government revenues and expenditures, while a country's current account balance measures the difference between the country's current receipts from and payments to the rest of the world.

²See, for example, International Monetary Fund (2004), Organisation for Economic Co-operation and Development (2004), and Chinn (2005).

³For instance, while studies such as Miller and Russek (1989) and Enders and Lee (1990) have found fiscal deficits to be prime determinants of trade deficits, others (such as Dewald and Ulan [1990], Gruber and Kamin [2005], and Kim and Roubini [2003]) have observed no firm link or even a link in the opposite direction of the one predicted by the twin-deficit hypothesis. Some studies, such as Chinn and Prasad (2003), estimate a response of current accounts to fiscal deficits similar to ours, but they do not explore the direct link from fiscal deficits to private consumption.

⁴All balances plotted in the chart and used in our analysis pertain to the general (national plus local) government sector, including balances of social security systems.

Table 1

Fiscal and Current Account Balances in the Largest Industrial Countries

Changes over Period (Percentage of GDP)

Country	1990-2000		2000-2005	
	Primary Fiscal Balance	Current Account Balance	Primary Fiscal Balance	Current Account Balance
United States	5.0	-2.9	-6.0	-2.2
Japan	-9.3	1.0	1.2	0.9
Germany	3.8	-4.6	-5.4	5.7
France	0.7	2.1	-1.8	-2.9
United Kingdom	5.0	1.4	-7.3	0.7
Italy	7.2	0.9	-5.4	-0.9
Canada	6.7	6.1	-3.3	-1.0

Source: Organisation for Economic Co-operation and Development.

Notes: Primary fiscal balances equal overall fiscal balances net of interest payments. Pairs in blue accord qualitatively with the predictions of the twin-deficit hypothesis.

instead of booming. It is also possible that Japan's current account surplus might have turned into a large deficit during the 1990s had Japanese growth not collapsed after 1990.

To assess the twin-deficit hypothesis more formally, we broaden our analysis by using data from a large group of countries over a long period. This approach enables us to account for both the common characteristics of the countries in our sample and the impact of business cycles and other key factors.

Fiscal Policy and National Saving

Two views on the effect of fiscal deficits on private saving and investment behavior have been historically prominent. The first view, sometimes associated with the Keynesian analysis of fiscal policy, is a key ingredient of the twin-deficit hypothesis. According to this view, a tax cut or other fiscal expansion financed by the issuance of public debt lowers national saving by increasing private disposable income and hence private consumption. The implications of this saving shortfall for investment and the current account depend on a country's degree of openness to capital transactions with the rest of the world. In countries that are relatively closed to capital flows, reduced domestic saving must be matched by decreased domestic investment, because residents cannot borrow from abroad to keep investment high. Thus, fiscal expansions "crowd out" domestic investment, usually by lifting domestic interest rates. More open economies, by comparison, may keep domestic investment stable by turning to foreign credit and thus may not see interest rates rise. In these scenarios, a decline in national saving is matched by a rise in the current account deficit, leading to twin fiscal and current account deficits.

The second prominent view on the effect of fiscal deficits on private saving and investment is the so-called Ricardian view. According to this view, tax cuts financed by the issuance of new public debt lead residents to expect the government to raise taxes eventually to repay the new debt.⁵ To prepare for future tax increases, residents save all the cash freed by the tax cut; consumption, national saving, and the current account are therefore unchanged.⁶

To date, the most well-known assessment of the relative accuracy of these two views is found in Bernheim (1987). The author reviewed time series U.S. data as well as cross-country evidence on the effect of fiscal deficits on consumption. For the United States, Bernheim concluded that each dollar of tax cuts raised private consumption by 20 to 30 cents. Similarly, his evidence from thirty-nine countries from 1972 to 1983 revealed that each dollar of tax cuts raised private consumption by 40 to 50 cents. Thus, according to Bernheim, the world accorded somewhat more closely with the pure Ricardian view (according to which private consumption should rise by zero cents for each dollar of tax cuts) than with the pure twin-deficit view (according to which consumption should rise by 100 cents for each dollar of tax cuts). Bernheim's separate analysis of U.S. data suggested that the consumption effects for the United States were even closer to the pure Ricardian view than were those for its foreign partners.⁷

While a number of studies have explored the link between fiscal policy and private saving since Bernheim's classic work,⁸ they have focused mostly on data from individual countries and paid little attention to cross-country evidence. We depart from these studies by adopting the cross-country methodology of Bernheim. However, we include a substantial amount of new data in our analysis and, unlike Bernheim, we use data adjusted to eliminate the blurring effects of cyclical relationships.

⁵Whether the Ricardian view can actually be traced to the writing of economic theorist David Ricardo (1772-1823) is a controversial issue. In any case, the modern incarnation of the Ricardian view is typically attributed to Robert Barro (see, in particular, Barro [1974]).

⁶Needless to say, this mechanism can operate smoothly only when domestic residents live long enough to care about their own future tax burdens or the tax burdens of future generations, when domestic residents have unfettered access to capital markets to transfer wealth over time, and when taxes have no effect on resource allocation other than through their impact on private saving. Hardly any scholar nowadays holds a pure Ricardian view. However, a key question is how closely the world adheres empirically to this benchmark.

⁷Bernheim also examined the effect of fiscal deficits on interest rates, but found no stable link. More recent studies have found a firmer link (see, for instance, Gale and Orszag [2004] for evidence on the United States and International Monetary Fund [2004] for a survey of international results). Despite these contributions, the link between interest rates and investment is still not clearly understood.

⁸See Seater (1993) and Elmendorf and Mankiw (1999) for reviews of this work.

Estimating the Link between Fiscal Policy, Saving, and the Current Account

We estimate the link between fiscal deficits and both private consumption and the current account by using the equations:

$$C/Y = \beta_1 + \beta_2(FISCDEF/Y) + \beta_3(G/Y) + \beta_4(D/Y) + \beta_5YG + \beta_6PG$$

$$\text{and } CA/Y = \alpha_1 + \alpha_2(FISCDEF/Y) + \alpha_3(G/Y) + \alpha_4(D/Y) + \alpha_5YG + \alpha_6PG,$$

where C is private consumption, Y is GDP, $FISCDEF$ is the fiscal deficit, G is government consumption, D is public debt, YG is GDP growth, PG is population growth, and CA is the current account balance. Our focus is on the coefficients β_2 and α_2 . The pure Ricardian view predicts $\beta_2 = \alpha_2 = 0$, that is, neither consumption nor the current account should respond to changes in the fiscal deficit. According to the twin-deficit hypothesis, we should instead observe $\beta_2 > 0$ and $\alpha_2 < 0$ because consumption should increase and the current account should worsen in response to an increase in the fiscal deficit.

Our model is estimated using a panel regression technique with fixed effects. We first estimate the model for the 1972-98 period for the same twenty-six countries studied by Bernheim (1987), using data from the International Monetary Fund's International Financial Statistics (IFS) and ending our sample in 1998 to avoid consistency problems in the IFS data after that year. We then estimate the model for the 1972-2003 period using Organisation for Economic Co-operation and Development (OECD) data and cyclically adjusted budget deficits for the eighteen OECD countries for which sufficient data are available.

We begin by essentially replicating Bernheim's analysis of the response of private consumption to fiscal policy for two groups of countries: the same twenty-six countries used by Bernheim and the OECD countries exclusively. By focusing on the latter group, we can estimate our relationships using cyclically adjusted data provided by the OECD. Our estimation strategy, described in the box, involves linking consumption behavior to fiscal balances, both of which are measured as shares of GDP, by controlling for changes in other fiscal variables (government consumption and public debt) and in other variables traditionally associated with consumption behavior (income growth and population growth).

Our estimation results, presented in Table 2, yield three main conclusions.⁹ First, each dollar rise in fiscal deficits in our sample countries is associated with an average rise in

Table 2
The Impact of Fiscal Policy Changes

Sample	Dependent Variable			
	Consumption/GDP		Current Account/GDP	
	Bernheim 26	OECD 18	Bernheim 26	OECD 18
Independent variables				
Fiscal deficit	0.33 (0.04)	0.37 (0.05)	0.38 (0.05)	0.30 (0.05)
Government consumption	-0.33 (0.08)	-0.24 (0.1)	0.33 (0.10)	-0.23 (0.11)
Income growth	0.00003 (0.0001)	-0.001 (0.0004)	0.0001 (0.0001)	-0.0003 (0.0003)
Population growth	-0.003 (0.005)	-0.0001 (0.001)	0.03 (0.01)	-0.001 (0.001)
Public debt	-0.02 (0.004)	0.02 (0.007)	0.004 (0.006)	0.04 (0.07)
R^2 (within)	0.47	0.28	0.14	0.19
Number of observations	681	444	576	457
Period	1972-98	1972-2003	1972-98	1972-2003

Source: Authors' calculations.

Notes: Public saving, government consumption, and public debt are measured as ratios over GDP. Standard errors are in parentheses. The "Bernheim 26" sample comprises Australia, Austria, Belgium, Canada, Costa Rica, Finland, France, Germany, Guyana, Iceland, India, Indonesia, Italy, Korea, Luxembourg, Mexico, Morocco, Norway, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand, the United Kingdom, and the United States. The "OECD 18" sample comprises the countries of the Organisation for Economic Co-operation and Development: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, the Netherlands, Norway, Sweden, the United Kingdom, and the United States.

private consumption of 33 to 37 cents. This finding supports the argument that consumption responds significantly to fiscal policy changes. However, the estimated rise in consumption is smaller than the increase of 40 to 50 cents calculated by Bernheim, suggesting that the effects of fiscal policy changes on consumption and saving may have weakened over time.

Second, our result is essentially unchanged if we restrict our sample to include only OECD countries, for which cyclically adjusted data are available, rather than examine Bernheim's larger group of countries, the estimates for which are not cyclically adjusted. This robustness suggests that the estimated link between fiscal policy and consumption cannot be attributed to business-cycle relationships that might vanish over longer horizons.

⁹Note that our empirical approach greatly simplifies the complex link between fiscal deficits on the one side and private consumption and current account deficits on the other. Such a link is likely to depend on factors such as the specific mix of each tax/expenditure package, its persistence, and a variety of initial conditions not captured by our simple empirical model.

Third, the effect of public debt on private consumption is statistically significant but economically small. That is, historically the fiscal policy changes that have most affected consumption in our group of countries are changes in fiscal deficits, rather than changes in public debt.¹⁰

We also produced estimates only for the United States, and obtained results similar to those found for other countries. Specifically, a dollar increase in the U.S. budget deficit led to a rise of 23 cents in private consumption. However, this smaller, one-country sample resulted in estimates that were less precise and less stable across different specifications of our empirical model.

Fiscal Policy and the Current Account

Our finding that each dollar increase in fiscal deficit is typically associated with a decline in national saving of 33 to 37 cents helps clarify the link between fiscal policy changes and consumption. We now consider the implications of this finding for the effect of fiscal policy changes on current account balances.

One approach to linking fiscal policy changes to current account changes involves uncovering the relationship between fiscal policy and domestic investment. This line of inquiry allows one to determine the amount of foreign financing required to close the domestic savings–investment gap. This strategy can be problematic, however, because the empirical behavior of investment is usually hard to characterize. Investment responds to many factors, such as domestic and foreign interest rates and productivity, and the response is often unstable and unpredictable (see, for instance, McCarthy [2001]). Accordingly, we pursue a more direct line of inquiry: we replace consumption with the current account balance as the variable to be explained in our regression equation (see box). This substitution enables us to estimate a direct relationship between fiscal balances and the current account in our sample of countries.

Our estimates reveal that each dollar rise in the fiscal deficit is associated on average with a 30 cent decline in the current account (Table 2). In conjunction with our earlier finding—that each dollar rise in the fiscal deficit leads to a fall in national saving of 33 to 37 cents—this result implies that changes in national saving are reflected almost one-for-one in changes in current accounts in our country group.

¹⁰Our estimates of the impact of fiscal balances on private consumption and current accounts changed minimally when we excluded public debt from the independent variables, added past values of the independent variables, or defined variables as changes rather than as levels. By contrast, our estimates were more variable across different country groups and specifications of the econometric model.

The fact that fiscal deficits have a similar impact on private domestic saving and on the current account suggests that investment has exhibited only a tenuous response to fiscal policy changes, failing to decline to offset the drop in national saving. This weak relationship accords with much of the research on the determinants of investment. In the context of our analysis, it suggests that the current account is chiefly responsible for accommodating changes in national saving.

Explaining the Declining Impact of Fiscal Deficits

The earlier comparison of our empirical findings with those of Bernheim suggests that changes in fiscal policy have had a declining impact on consumption and current accounts in our group of mostly industrial and emerging economies. We now consider possible explanations for this phenomenon.

Over the past few decades, at least three factors observed in industrial countries could have led consumers to be more conscious of the need to set aside a larger share of a fiscal windfall in anticipation of future fiscal retrenchments.

The first factor is financial innovation, which has made it easier for households to borrow against future income and thus reduced their need for liquid funds to finance consumption.¹¹ In these circumstances, tax cuts and other expansionary fiscal initiatives are less likely to spur consumption. Conversely, fiscal retrenchments are less likely to dampen consumption, as households have become more apt to borrow or liquidate some of their financial assets to mitigate the impact of a tax increase or a fall in public spending. Altogether, financial innovation is likely to have weakened the response of consumption to fiscal policy changes in recent decades.

A second factor is the more favorable demographics and associated lengthening of work lifetimes recorded in the industrial and emerging markets over the past few decades. Between 1950 and 2000, life expectancy rose by seven years in the United States, by ten years in Germany, and by sixteen years in Japan (Kinsella and Velkoff 2001; Groshen and Klitgaard 2002). Increases in life expectancy in other industrial countries have been comparable. In other words, adult taxpayers today—unlike their predecessors a few decades ago—are more likely to live long enough to face the eventual bill for a current tax cut. Furthermore, to the extent that the tax obligation weighs disproportionately on the working population, widespread reforms to retirement systems in industrial countries during the past decade may have increased the effective burden of fiscal expansions on today's workers. Customary retirement ages have risen in many

¹¹See, for instance, Dynan, Elmendorf, and Sichel (2006).

industrial countries—most typically, from about sixty to sixty-five—thus increasing workers' stake in the future implications of current fiscal policies.¹²

Finally, the adoption of “fiscal rules” is also likely to have contributed to forward-looking behavior among households in our sample of countries. During the past decade, fiscal rules have taken the form of balanced-budget requirements and/or debt limits for the public sector in many advanced as well as emerging economies.¹³ These rules, such as those articulated in Europe's Maastricht Treaty and the Stability and Growth Pact, are generally designed to limit the discretion of fiscal authorities and make them accountable for tax cuts and other expansionary fiscal initiatives. The rules likely have sharpened consumers' perception of the need to plan ahead in response to fiscal expansions.

Conclusion

The twin-deficit hypothesis has resurfaced in the policy debate twenty years after the large U.S. fiscal and current account deficits of the 1980s. The hypothesis suggests that a larger fiscal deficit, through its effect on national saving and consumption, leads to an expanded current account deficit.

Our study offers a mild endorsement of this view. Examining the link between changes in public and private saving in recent decades, we find that lower public saving in advanced economies continues to be associated with higher private consumption and hence reduced national saving. This relationship holds true even as consumers, in anticipation of future fiscal retrenchments, have saved larger shares of the income made available by higher fiscal deficits than they did in earlier decades. We find that, on average, each extra dollar of fiscal deficit is associated with a rise in private consumption—or a fall in national saving—of about 35 cents in the 1972–2003 period, compared with a rise in consumption of 40 to 50 cents in the 1972–83 period.

We also find that changes in national saving have led to very similar changes in current accounts in our sample of countries. Accordingly, we conclude that investment continues to show no systematic response to fiscal policy changes. Much of the saving shortfall observed in our sample of countries—about 30 cents for each extra dollar of fiscal deficit—thus requires an increase in foreign borrowing.

While these findings provide some support for the twin-deficit hypothesis, they do not support the view that future deficit reductions can play a critical role in eliminating the

U.S. current account imbalance with the rest of the world. Our estimates suggest that even if the federal fiscal deficit—currently about 2 percent of GDP—were fully erased, the nation's current account deficit would improve by only a fraction of its current 7 percent of GDP. For example, if the U.S. current account continues to respond to fiscal changes as it has, on average, in our sample of OECD countries—by 30 cents on the dollar—a full elimination of the federal fiscal deficit would improve the U.S. current account by only 0.6 percent of GDP, or less than one-tenth of its current level. While these calculations are based on historical correlations that could break down if circumstances change in unexpected ways, they are nonetheless suggestive of the likely magnitude of the effects at work.

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¹²Casey et al. (2003) review many such reforms, including measures increasing retirement ages enacted in twelve industrial countries since the early 1990s.

¹³See Kopits (2001) for a review of the fiscal rules adopted in many industrial countries since the mid-1990s.

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