The Economics of the Federal Budget Deficit

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Summary

The Congressional Budget Office (CBO) estimates that the federal budget deficit for FY2009 was $1,414 billion, triple the $459 billion deficit recorded in FY2008. The CBO expects the deficit for FY2010 to be $1,349 billion. The estimate for 2010 is based on current law. The budget deficit in FY2009 was, in dollar terms, unprecedented. Compared to the overall economy, the $1.4 trillion budget deficit equaled 9.9% of gross domestic product (GDP). In 1943, the budget deficit reached 30.3% of GDP. Since 1946 and before now, the largest the budget deficit had been, relative to the overall economy, was 6% of GDP in 1983.

Over fairly short periods of time, say three or four years, fiscal policy can affect the rate of economic growth by adding to, or subtracting from, aggregate demand. For a time, the effect on the economy may even be larger than the initial change in the budget. These effects, however, tend eventually to diminish because of either higher interest rates or rising prices. There are varying estimates of the total effect on the economy of a change in fiscal policy, but most of them suggest that it reaches a peak somewhere between one and one-and-a-half times the size of the change in the budget. Most macroeconomists believe that effect is realized within one or two years of the initial change in policy.

One measure economists use to assess fiscal policy is the structural, or standardized-employment, budget. This measure estimates, at a given time, what outlays, receipts, and the surplus or deficit would be if the economy were at full employment. Although the actual budget was in surplus beginning in 1998, the standardized measure first registered a balanced budget in 1999. Between 1992 and 2000, the actual budget surplus increased from -4.5% (a deficit of 4.5%) to 2.5% of gross domestic product (GDP), a shift of 7.0 percentage points. During the same period, the standardized measure rose from -3.3% to 1.1% of GDP. That suggests that a little more than half of the shift was the result of changes in policy, and a little less than half was attributable to the economic expansion. Between 2000 and 2007, the actual surplus fell from 2.5% to -1.2% of GDP, whereas the standardized measure fell from 0.9% to -1.6% of GDP. That the two measures were so close in 2007 suggests that the economy was then near full employment. That the standardized measure fell between 2000 and 2007 indicates an expansionary fiscal policy over the period. Between 2007 and 2009, the standardized budget deficit increased from 1.2% to 7.3% of GDP, indicating a substantially expansionary fiscal policy.

In the long run, economic growth is determined primarily by three factors: growth in the labor force, the rate of technological advance, and the amount of capital available to the workforce. Of the three, the last one may be the most susceptible to the influence of policymakers. The larger the capital stock, the more productive the labor force tends to be. Although it is possible for fiscal policy to have an effect on the rate of technological progress in the way public money is spent, many believe that it has a larger effect on growth through its influence on the size of the domestic stock of capital and the amount of capital available for each worker in the labor force.

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Introduction

The Congressional Budget Office (CBO) estimates that the federal budget deficit for FY2009 was $1,414 billion, triple the $459 billion deficit recorded in FY2008. CBO expects the deficit for FY2010 to be $1,349 billion.[1] CBO estimates that, in FY2009, the American Recovery and Reinvestment Act (ARRA) resulted in additional outlays of $112 billion and a drop in revenues of $88 billion, which raised the budget deficit $200 billion above what it otherwise would have been. The budget deficit in FY2009 was, in dollar terms, unprecedented.[2] Compared to the overall economy, the $1.4 trillion budget deficit equaled 9.9% of gross domestic product (GDP). In 1943, the budget deficit reached 30.3% of GDP. Since 1946 and before now, the largest the budget deficit had been, relative to the overall economy, was 6% of GDP in 1983.

As recently as FY2001, the budget registered a surplus. Between 1992 and 1998, a combination of budget policy and a booming economy entirely eliminated the deficit. But after four successive years of surpluses, outlays again exceeded revenues in 2002 and the budget has been in deficit since then. In an economic downturn, deficit reduction is usually not an immediate consideration. The economy is expected to begin to recover in 2010, but deficits are likely to remain high for some time both because of continued countercyclical fiscal policy and because reducing the deficit as soon as the economy begins to recover could have an undesired contractionary effect. In the longer run, however, continued deficits at current levels could ultimately reduce the long-run rate of economic growth.

Although both the severity of the current downturn and the size of the projected deficits surpass what most policymakers have experienced, experience remains a guide to policy. Economists are not necessarily changing their views about the economic effects of budget deficits even though those views may have been established in less trying times. This report examines the economics the budget deficit.

Recent Budget History

The share of income that is saved depends in part on relative preferences for current and future consumption. From an economic standpoint, there is no optimal rate of saving. Nonetheless, raising the national rate of saving is an oft-stated goal of policymakers.

Most economists, however, believe the capacity of public policy to influence private saving behavior is limited. The one certain way to raise the national saving rate through public policy is to increase the public sector saving rate, and that is what happened in the 1990s. The national saving rate rose after 1995 because increases in public saving more than offset falling private saving.

In recent history, budget *surpluses* have been rare, and a succession of surpluses rarer still.[3] In every year between FY1969 and FY1998, the federal budget was in deficit; that is, outlays

[1] Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2010 to 2020*, January 2010.

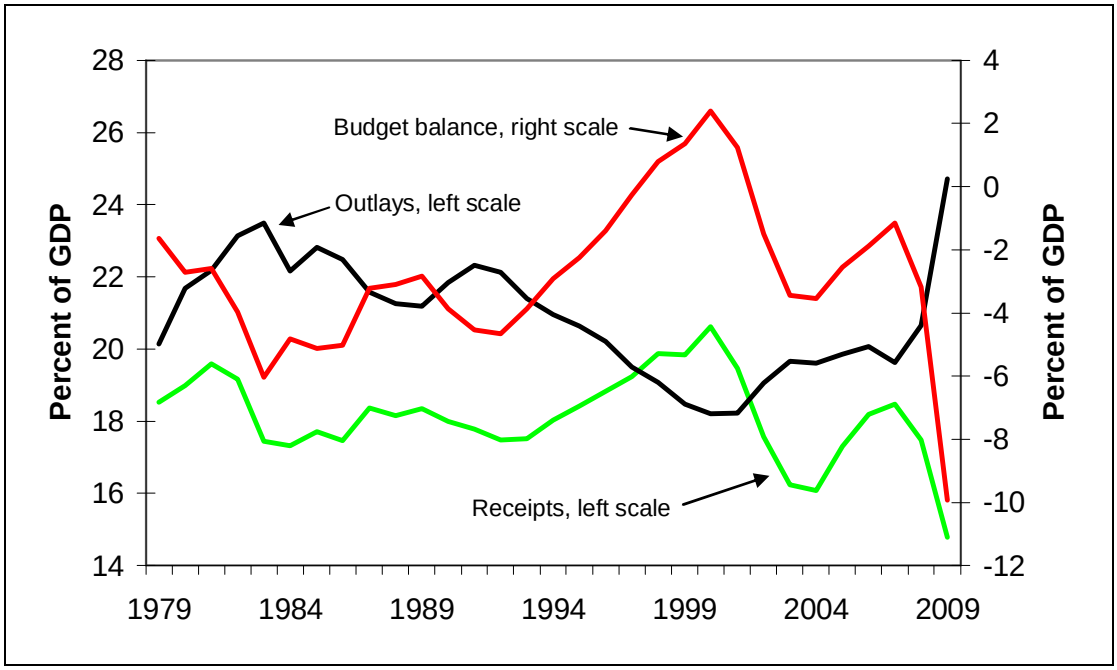
[2] See CRS Report R40770, *Economic Effects of a Budget Deficit Exceeding $1 Trillion*, by (name redacted).

[3] Unless otherwise specified, in this report surpluses and deficits (negative surpluses) reflect both on- and off-budget receipts and outlays. That is, they are from the unified budget.

exceeded receipts. Beginning in 1929 and until 1969, the budget was in surplus for a total of nine years, and during that time was never in surplus for more than three years in a row.

Figure 1 presents figures for federal budget outlays, receipts, and the surplus beginning in 1979. Rather than showing dollar amounts, each of the three series is expressed as a percentage of GDP. Showing the figures in this way focuses attention on the size of the budget aggregates relative to the economy as a whole.

Figure 1. Outlays, Receipts, and the Budget Balance



Source: Congressional Budget Office.

An economic downturn began in mid-1981 and ended in late 1982, and the budget deficit grew to 6.0% of GDP in 1983. Since then, with a brief reversal attributable to an economic contraction in 1990 and 1991, the deficit shrank and turned into a surplus which increased steadily until 2000. In 2001, the surplus fell from 2.4% of GDP the previous year to 1.3% of GDP. In 2002, there was a budget deficit of 1.5% of GDP and by 2004 it had reached 3.5% of GDP. The U.S. economic expansion came to an end in December 2007 and in 2008 the deficit increased to 3.2% of GDP. For 2009, the deficit reached 9.9% of GDP, is projected by CBO to stay above 9% of GDP for 2010.

Deficit or Surplus, What Difference Does it Make?

The federal budget and the economy are closely interrelated. The strength or weakness of the overall economy substantially affects the levels of outlays and receipts. The budget also has significant effects on the economy, both in terms of how fast the economy grows, and also in terms of the overall allocation of resources.

Fiscal Policy in the Short Run

Over fairly short periods of time, say three or four years, fiscal policy can affect the rate of economic growth by adding to, or subtracting from, aggregate demand. Consider, for example, a one-time increase in total federal spending, with no matching rise in tax receipts. Each additional dollar of government spending becomes income for those who satisfy the initial increase in demand for public goods and services. In turn some of that increase in income will be spent, raising the income of those who satisfy a second wave of increased demand for goods and services. Theoretically, this process continues with each successive increment to income getting smaller and smaller as some is saved and some is spent.

Because of the initial increase in spending and the additional spending that is subsequently stimulated, the economy grows somewhat faster than it otherwise would have. For a time, the size of the economy may even increase by more than the initial increase in government spending. Government spending is thus said to have a 'multiplier effect.' There can also be a multiplier effect in the case of a spending cut, although the effect is in the opposite direction. If the government reduces spending, that can cut the incomes of those who otherwise would have provided goods and services to the government. If it does, they must either reduce their spending or their saving. To the extent that they cut spending, it adds to the decline in output initiated by the cut in public spending.

The government may also be able to influence the rate of economic growth in the short run via tax cuts or increases. Just as an increase in public sector spending temporarily increases some incomes, so a tax cut increases the amount of income taxpayers have at their disposal. Some of that increase in after tax income is likely to be spent, and so tax cuts may have a multiplier effect just as changes in government spending do. A tax increase reduces disposable income, and so contributes to a slowdown in private sector spending.

Limits on Fiscal Policy

Given current economic conditions, with rising unemployment and idle resources, a stimulative fiscal policy is more likely to support growth than raise either interest rates or inflation. Given a sufficient fiscal policy boost, other things being equal, a slack economy will tend gradually to converge to full employment.[4] As the economy approaches full employment of both labor and capital, additional increases in aggregate demand would be more likely to be satisfied by higher prices than by increased real output.

For the moment it is not much of a concern, but in the view of most economists, the government cannot permanently increase the size of the economy by forever increasing spending, or cutting taxes. As is often the case in economics, other things do not remain equal. An increase in spending, or a tax cut, increases the deficit and so increases the public sector's demand for credit. Increased credit demand tends to raise interest rates. Higher interest rates, in turn, discourage borrowing in the rest of the economy for those activities that depend on credit, especially housing and consumer durable goods.

[4] Even in the absence of a stimulative fiscal policy the economy will tend toward full employment, but perhaps not as rapidly.

Higher interest rates also tend to make dollar-denominated financial assets more attractive to overseas investors. To buy those assets, however, foreigners must first buy dollars. This increased demand for dollars pushes the foreign exchange value of the dollar above what it otherwise would have been. The 'stronger' dollar makes imported goods cheaper, and makes goods and services produced in the United States more expensive abroad. The change in prices tends to increase demand for U.S. imports and moderate U.S. exports, raising the trade, or current account, deficit. Thus, some of the stimulus is, in a sense, exported.

Fiscal policy may also affect prices. An increase in aggregate demand, stimulated by an increase in spending or a cut in taxes, can be satisfied in one of two ways; either an increase in real production, or an increase in the general price level.[5] If the economy is already operating at full employment, and the capital stock is operating at or near full capacity, then it is more likely that any increase in demand will be met by higher prices than by increased production of goods and services. In a fully employed economy, an increase in government spending would yield a much larger increase in nominal than it would in real GDP.

Whether because of higher interest rates or rising prices, any effects of an increase in government spending, or a tax cut, on the rate of economic growth tend to diminish as the economy approaches full employment. In a fully employed economy, an increase in government spending is more likely to result in a change in the composition of output than to raise its level. Estimates of the multiplier effect of a change in fiscal policy vary, but most of them suggest that it reaches a peak value of somewhere between one and one-and-a-half times the original stimulus. In most economic models, that peak effect is realized within one or two years of the initial change in policy. In other words, for every dollar increase in federal spending, the economy, within a year or two, will be larger than it otherwise would have been by somewhere between a dollar and a dollar-and-a-half.

Not all changes in spending and taxes, however, reflect changes in fiscal policy. Just as the budget can have an effect on short-run economic growth, the rate of economic growth can also have an effect on the budget. Faster economic growth tends to raise revenues above, and reduce outlays below, what they otherwise would have been. Faster growth means more people are working, which raises taxable incomes, which in concert with progressive tax rates increases tax receipts. Faster economic growth, along with higher incomes and employment, tends to reduce outlays, especially for spending on unemployment insurance and various income support programs.

What this means is that it may be difficult to examine the ups and downs in the budget, and in the deficit in particular, and discern whether those changes reflect the fluctuations of the economy, or are due to deliberate changes in budget policy.

The Standardized Budget

One measure economists use to assess fiscal policy is the structural, or standardized-employment, budget. This measure estimates, at a given time, what outlays, receipts, and the surplus or deficit would be if the economy were at full employment. It is a way of separating changes in the budget totals that are due to changes in overall economic conditions from those changes that are the result of deliberate changes in tax and spending policy. Changes in the standardized-employment surplus reflect changes in policy and are not affected by variations in underlying economic

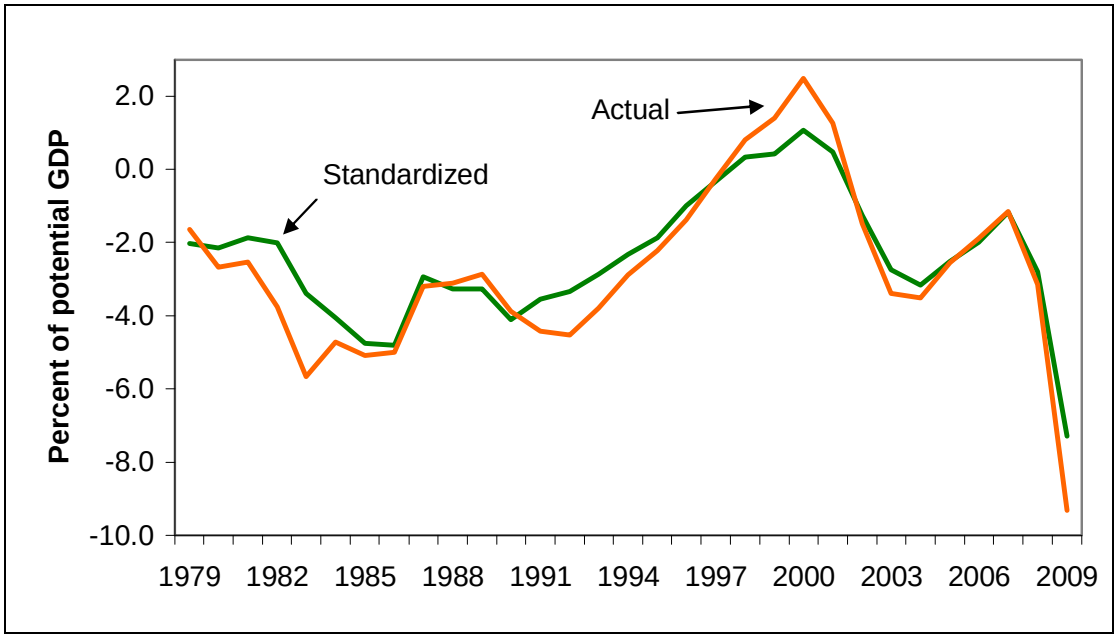
[5] In the short run, to which this discussion is limited, supply is more or less fixed.

conditions. For example, if the economy is less than fully employed, then the standardized measure of outlays is less than actual outlays, standardized receipts are higher than actual receipts, and the standardized budget deficit would be smaller than the actual deficit.

Economists track the standardized-employment surplus as a percentage of potential GDP to assess if fiscal policy is stimulative or contractionary. As the economy grows, outlays and receipts tend to rise as well. Comparing the budget to GDP filters out changes due to variations in the overall size of the economy. Potential GDP is an estimate of what the total value of production of goods and services would be if labor and capital resources were fully employed. Using potential GDP as a base for comparison avoids the problem of cyclical factors masking changes in fiscal policy. A decrease in the standardized budget deficit relative to potential GDP would be considered indicative of a contractionary fiscal policy. Similarly, an increase in the standardized budget deficit as a percentage of potential GDP would be indicative of a stimulative fiscal policy.

The CBO regularly publishes estimates of the standardized budget.[6] **Figure 2** compares the standardized budget surplus (deficits are simply negative surpluses) with the actual surplus since 1979, both as a percentage of potential GDP.[7]

Figure 2. Actual and Standardized Budget Surplus



Source: Congressional Budget Office.

[6] Congressional Budget Office, *Measuring the Effects of the Business Cycle on the Federal Budget: An Update*, September 2009.

[7] It should be noted that these data incorporate other adjustments in addition to the one related to the business cycle. These adjustments removed, for example, the effects of outlays for deposit insurance, receipts from auctions of the electromagnetic spectrum, and foreign contributions related to Operation Desert Storm—all of which are considered to be one-time events or otherwise unrelated to discretionary policy.

For the most part, the two series exhibit the same behavior over time. Since 1979, however, the two have moved in opposite directions on numerous occasions, indicating that either the surplus rose at a time that fiscal policy was actually expansionary or that it fell at a time when fiscal policy was actually contractionary. Most of the time, the actual budget surplus has been smaller than the standardized measure, suggesting that, at least by CBO's calculations, the economy has, more often than not, been less than fully employed.

Between 1997 and 2001, the actual surplus was larger than the standardized measure. Between 1992 and 2000, the actual budget surplus increased from -4.5% to 2.5% of potential GDP, a shift of 7.0 percentage points. Over the same period, the standardized measure rose from -3.3% to 1.1% of GDP. That suggests that a little more than half of the shift during that period was the result of changes in policy, and a little less than half was attributable to improving economic conditions.

Between 1992 and 2000, fiscal policy, as measured by changes in the standardized budget surplus, was contractionary. In every year between 1992 and 2000, the standardized surplus grew relative to GDP. Between 1992 and 2000, the average increase per year in the surplus was 0.5% of GDP. The average annual rate of increase in real GDP over the same period was 3.9%. Although fiscal policy was contractionary, other factors contributing to economic growth more than compensated. Between 2000 and 2003, the standardized surplus fell, suggesting that fiscal policy was expansionary. Between 2003 and 2007, it rose slightly in each year, indicating a modest contractionary effect. In 2008 and 2009, both the actual and standardized deficits increased substantially, indicating that fiscal policy was expansionary.

Fiscal Policy in the Long Run

A constant deficit or surplus, by itself, is believed to have little if any effect on the short run rate of economic growth. It is *changes* in the surplus that matter for short run growth. However, whether the budget is in surplus or not does have consequences for the *composition* of economic output, and that can have an effect on growth in the long run.

In the long run, economic growth is determined primarily by three factors: growth in the labor force, the rate of technological advance, and the amount of capital available to the workforce. Of the three, the last one may be the most susceptible to the influence of policymakers. The larger the capital stock, the more productive the labor force tends to be.

Although it may be possible for fiscal policy to have an effect on the rate of technological progress in the way public money is spent, it probably has a much larger effect on growth through its influence on the size of the domestic stock of capital and the amount of capital available to each worker in the labor force. How this comes about can be illustrated by a brief introduction to economic accounting.

The total value of national output can be measured in two ways. Either the total value of the goods and services produced can be added up, or the total value of the incomes resulting from that production can be counted. These two accounts, at least in the abstract, add up to the same total.

The measure of total output based on the value of production is typically subdivided into several categories of demand. Specifically, it is calculated as the sum of consumption spending (C),

investment (I), government spending (G) and the difference between exports (X) and imports (M):

$$GDP = C + I + G + (X - M).$$

The alternative measure of total output is the sum of the various uses to which income is allocated. On this side of the economic accounting ledger the value of national output is expressed as the sum of consumption (C), private sector saving (S)[8], and tax payments (T):

$$GDP = C + S + T.$$

Combining the two equations, and simplifying gives:

$$I = S + (T - G) + (M - X).$$

That is, total investment spending is equal to the sum of private saving (S), the government budget surplus (T - G, which, if it is negative, is a deficit), and the difference between imports and exports of goods and services (M - X). The last equation is an identity. In other words, investment is *by definition* equal to the sum of private saving, the budget surplus, and net capital inflows from abroad. Other things being equal, a reduction in public sector saving means less investment and slower growth in the capital stock.

Net Capital Inflows Reflect Net Imports

Along with international flows of goods and services, financial capital flows back and forth between countries. If the value of imports exceeds the value of exports, then other things (i.e., investment, saving and the budget surplus) being equal, capital inflows will exceed capital outflows; otherwise there would be no way of paying for the excess of imports over exports.

Among other things, an increase in either private or public sector saving may have an effect on the amount of foreign financial capital flowing into the United States. One reason that might happen would be that an increase in domestic saving would tend to push interest rates down in the United States. That would make domestic financial assets less attractive to foreign investors and make foreign financial assets more attractive to U.S. investors. Thus, changes in domestic saving and net foreign investment could offset one another.

Figure 3 shows each of the three sources of investment funds over the past eight years, each one expressed as a percent of GDP. Private saving includes the saving of households and businesses. Public saving here reflects federal, state, and local governments.

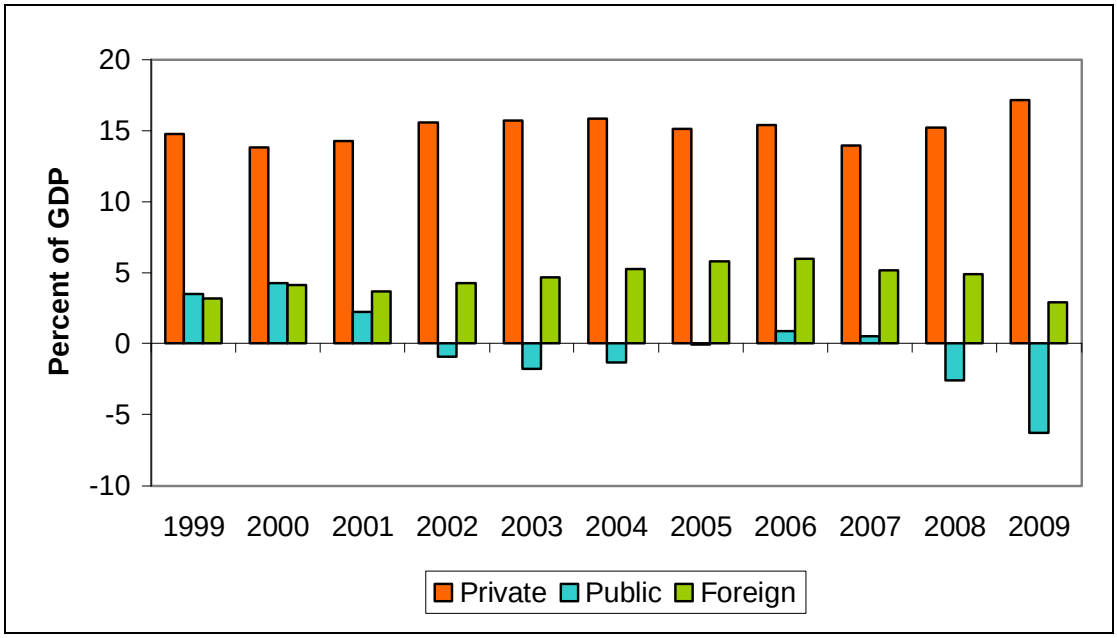
Before 1998, the public sector contribution to national saving (which includes both federal and state and local government saving) was small, but in 2000, public sector saving had risen to 4.4% of GDP. It has fallen since then, and in 2008 the public sector was a significant user of saving rather than a source of it. Between 1998 and 2008, private sector saving fell from 15.2% of GDP to 13.7%. Net inflows of foreign capital rose from 2.6% of GDP in 1998 to nearly 5% in 2008.

[8] For the purposes of this explanation, State and local government saving is included in public saving. Most of the variations in the public sector saving rate, however, are attributable to the federal government.

Total funds available for investment in the United States, from all sources rose from 20.4% of GDP in 1998 to 22.1% in 2000, before falling below 17% in 2008.[9]

Saving from domestic sources, public and private was 18.3% of GDP in 1999 but fell below 11% in 2009. Because of rising inflows of foreign capital, the claims of foreign investors to income from the domestic capital stock are increasing. Large inflows of foreign capital are typically associated with large federal budget deficits. These deficits added to domestic credit demands and pushed up interest rates, but other factors may also be at work.

Figure 3. Sources of Saving by Sector



Source: Department of Commerce, Bureau of Economic Analysis.

Two reasons have been suggested for increased foreign capital inflows, even at a time when public sector surpluses were rising at the end of the 1990s. One is that because the domestic economy was doing so well—in particular, productivity growth seemed to have accelerated—there was a surge in profitable investment opportunities. The other is that even in the absence of an increased yield on U.S. assets, foreign capital may have flowed here because of a perception of increased risk in countries where the capital might otherwise have been invested. In this case, the United States serves as a 'safe haven' for foreign capital. The economy will likely be more productive in the future than it would have been in the absence of that increase in investment, but some of that increase in output will have to be paid out to foreign investors as either rents, interest, or dividends.

The increase in investment spending of the 1990s was made possible by both the increase in national saving and an increase in foreign capital coming into the country. After 2000, there was a decline in saving from domestic sources, due primarily to a drop in public saving. Capital inflows from abroad did not offset the decline, and so total funds available for investment, measured as a share of GDP, fell.

[9] Figures for 2009 are based on the first three calendar quarters.

Federal Debt

Perhaps the most obvious effect of the federal government budget surpluses of the 1990s was a decline in the amount of federal debt. From an economic perspective, however, the measure of debt that matters more is not the absolute level in dollar terms, but rather the debt relative to total output, or GDP. From this perspective, the debt began to fall in 1993.

In the short run, over a period of just a few years, debt may grow more rapidly than GDP without causing much alarm. Even the large increases in debt contemplated for the next few years, while they may seem alarming, are not sufficient to cause significant economic instability as long as they are perceived to be temporary. It would take some time before debt reaches historic levels relative to GDP. In 1946, federal debt held by the public was 108.6% of GDP. At the end of 2009 that ratio was 53%.

As long as the federal debt grows faster than GDP, however, interest payments on that debt will constitute an ever-increasing share of total federal spending and of GDP. If investors should come to expect that the debt would grow faster then GDP indefinitely, and that the debt-to-GDP ratio would continue to rise, they might eventually become unwilling to buy new issues of federal debt. In that case, the Federal Reserve might be the only buyer and that would likely lead to an accelerating rate of inflation.

In the long run, the relationship between the growth rate of the federal debt and the overall rate of economic growth is important. Perpetual debt growth in excess of the rate of economic growth is an inherently unstable situation. It is likely that investors would become unwilling to buy federal debt issues long before all of GDP was accounted for by the interest payment on the federal debt, because of growing doubts about the government's ability to raise sufficient revenue to pay just the interest on that debt.[10]

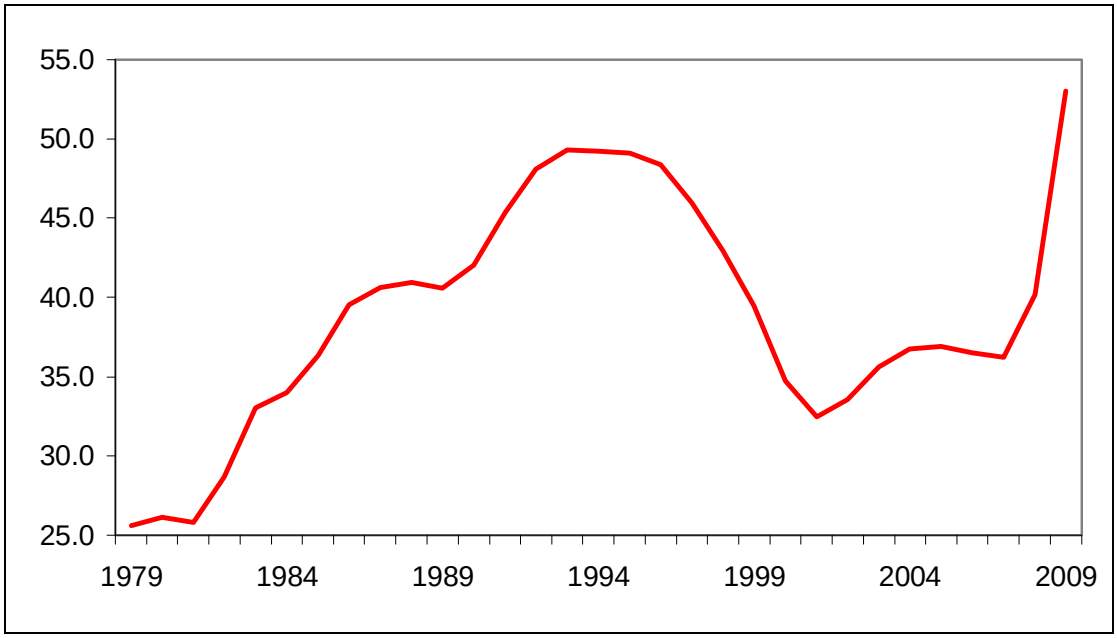
Whether the debt-to-GDP ratio is on such an explosive path depends on the rate of interest and the rate of growth of GDP. Consider the case where the budget is in balance except for the interest payment on the debt. That is, the budget deficit is equal to the interest payment. In this example, the debt would grow each year by an amount equal to the interest cost of financing the debt; thus the growth rate of the debt would equal the interest rate. If the interest rate on the federal debt remained above the economic growth rate, then the debt would grow faster than GDP and the ratio of debt to national output would rise. The converse is also true; as long as the interest rate on the debt remains below the growth rate of GDP, then the ratio of debt to income will fall.

Thus even with a budget deficit, the ratio of debt to national income can fall. For the United States, the previous recent peak level of the federal debt relative to GDP was reached in 1993 at 49.3%, when the budget deficit was $255 billion. In 1994, even though the deficit was still over $200 billion, the debt fell relative to GDP. By 2001, federal debt had fallen to a low of 32.5% of GDP. In 2002, the ratio of debt to GDP began to rise for the first time in eight years, and

[10] It is not a current concern, but in theory should the federal government be unable to find private sector buyers for its securities there would be two possible outcomes. First, the federal government would simply be unable to meet all of its obligations. Second, and the more likely of the two, rather than allow the federal government to default, the Federal Reserve would buy those securities. Although the Federal Reserve is independent and under no legal obligation to ensure the sale of government securities, it might well step in to avert default. Should it come to that, the threat would not be one of government insolvency, but rather of inflation.

continued rising through 2005, when it stood at 36.9%. Between 2005 and 2007, the ratio fell briefly, but it jumped to 53.0% in 2009. **Figure 4** shows the level of the debt-to-GDP ratio since 1979.

Figure 4. Federal Debt Held by the Public as a Percentage of GDP



Source: Congressional Budget Office.

During the period shown in **Figure 4**, the budget was in deficit most of the time. Clearly, variations in the ratio of debt to GDP do not depend solely on whether the budget is in surplus or deficit. As long as the budget is in deficit, however, the ratio cannot fall to zero. For the sake of long term economic stability, what matters most is that the ratio is not perpetually rising.

Conclusion

Economics, generally speaking, is neutral with respect to whether one saving rate is better than another. Ultimately, it is an expression of the public's relative preference for present versus future consumption. For the time being, however, the public sector can also have important effects on the pool of savings.

Whether it is better to have a budget surplus or a deficit, the budget has clear-cut consequences for the economy. In the short run, whether the budget is in surplus, makes little difference to economic performance. In the short run, it is *changes* in the surplus or deficit that can affect the rate of economic growth. A reduction in the deficit would tend to be contractionary, while an increase in the deficit would tend to be stimulative. Those effects, however, are likely to be short lived.

In the long run, a shift from a budget surplus to a deficit represents a reduction to national saving. Less saving means a shift from future to present consumption. Consuming more now means less investment now, a lower level of output of goods and services in the future, and thus, less to

consume in the future than otherwise would have been the case. To the extent that investment is financed by importing capital from abroad, some of that higher output will be paid to foreigners.

Even with a budget deficit, the outstanding federal debt may still fall, relative to GDP, but that depends on the size of the deficit, and of the interest payment on the outstanding debt. A rising debt-to-GDP ratio eventually poses the risk of accelerating inflation.

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