
FRBSF WEEKLY LETTER

Number 93-31, September 17, 1993

The Federal Budget Deficit, Saving and Investment, and Growth

In the last decade and a half the federal budget deficit has mushroomed. Some analysts would argue that this sets the stage for lower rates of U.S. consumption in the future. The rationale is that government borrowing absorbs private sector saving and thereby reduces the rate of capital formation. This view underlies the current deficit reduction program of the Clinton Administration. Other analysts, however, question whether the linkage between the deficit and investment is as close as this.

This *Weekly Letter* first discusses the sources of the growing federal budget deficit. It then summarizes the evidence in support of the view that there is a strong linkage between high federal budget deficits and low national investment, as well as the possible criticisms of that view.

Sources of the budget deficit

From World War II to about 1970, federal expenditures grew faster than the net national product (NNP), but on average, the expenditures were balanced by growing receipts. Between 1970 and 1992, however, federal expenditures rose from 22 percent to 27½ percent of NNP, while receipts remained at around 22 percent.

On the expenditure side, entitlement payments (primarily Social Security, Medicare, and Medicaid), which rose from 6 to 11½ percent of NNP, accounted for all of that increase. Defense spending fell from 8 to 6 percent of NNP, despite temporary increases during the Reagan years, while net interest on the federal debt rose by an equal amount. All other federal spending has been quite constant as a share of NNP since 1970, running at about 6 percent.

On the revenue side, contributions to social insurance rose from 5 percent of NNP in the late 1960s to 9 percent in 1992, covering about three quarters of the increase in entitlement expenditures. But other taxes were reduced by an equal amount, leaving total receipts as a percent of

NNP unchanged throughout the past two decades. The biggest offsetting changes in other receipts were in corporate and personal income taxes, which fell by 2 and 1½ percentage points of NNP, respectively. In addition, federal excise taxes on such things as alcohol, tobacco, and gasoline dropped by ½ percentage point of NNP.

In summary, the entire increase in the federal budget deficit was accounted for by higher entitlement payments, while taxes remained constant as a fraction of national income. But the composition of taxes changed: Taxes for social insurance rose, while taxes on personal income, corporate profits, and some commodities fell.

Effect on national investment

Concerns that the large federal budget deficit will hamper long-term growth revolve around the deficit's effect on national saving and hence investment. The amount of investment in capital goods per worker plus improvements in technology and workers' skills ultimately determines long-term growth in real per capita incomes.

In the national income accounts, net private investment (both domestic and foreign) equals net private saving less the government's dissaving (represented by its budget deficit). Net private saving has trended downward in the last two decades from about 8½ percent of the net national product (NNP) to about 6½ percent in 1992. (Net private saving here includes a fairly steady and small amount of surpluses of state and local governments, which are mainly due to employee pension funds and are therefore analogous to private saving.) Net private investment, however, has fallen from about 8½ percent of NNP to a record low of only about 1½ percent; most of this decline took place in the 1980s when the increase in the federal budget deficit was the greatest.

The view that a budget deficit diminishes investment assumes that the higher government

FRBSF

expenditures or increased private incomes from tax reductions associated with the deficit are at least partly spent on current consumption. The borrowing to finance a government budget deficit tends to absorb private saving that would otherwise go into private investment. If the proceeds of the borrowing are at least partly spent on consumption goods, then the overall level of investment in the economy is reduced. If private *domestic* investment gets crowded out by the budget deficit and the government's borrowing is not spent on investment goods, then future productivity and hence future consumption in the economy suffers. Alternatively, if private *foreign* investment gets crowded out, then future incomes that U.S. residents would receive from their investments abroad, and therefore also their future consumption, are lowered. Either way, the benefits of higher consumption today are counterbalanced by lower consumption in the future.

Conversely, reducing the budget deficit would result in a reduction of consumption today, and an increase in consumption in the future. Determining whether this delayed benefit is worthwhile requires an estimate of the actual trade-off in the economy between present and future consumption, as well as some measurement of the public's time preference, or the rate of interest that equates the utility of current and future consumption. A reasonable measure of the public's time preference would lie somewhere between the current real after-tax yield on long-term bonds of about 1½ percent and that on common stocks of around 3 to 4 percent. Standard growth models can be used to estimate the actual trade-off between present and future consumption; and they show that the future gains in consumption from a policy of higher saving and investment would outweigh the current losses in consumption at any real interest rate below 10 percent. (See, for example, Harris and Steindel (1991).)

Possible criticisms

Several criticisms have been made of the view that the federal budget deficit has contributed significantly to the collapse in national saving and investment and that the surest way to raise saving and investment is by moving toward budget balance. First, the national income accounts treat all government spending as consumption. So theoretically, a rise in the federal budget deficit could have been accompanied by an increase in

the rate of public investment, with no necessary effect on the true rate of national investment.

Unfortunately, the empirical evidence does not suggest that this happened. As discussed earlier, the overall increase in federal spending can be traced to higher entitlement payments, which tend to be spent on consumption. Nor has the composition of federal expenditures on goods and services shifted toward investment. Net federal investment in nonmilitary physical capital is relatively small, currently running at only about \$7 billion a year. Moreover, according to the Congressional Budget Office (1990), net federal investment in nonmilitary physical capital has not increased relative to the size of the economy in the last two decades; and a broader measure of net federal investment that includes research and development and investment in human capital has actually declined.

Military assets yield returns over an extended period also, and net federal investment in such assets increased by about 0.5 percent of NNP in the 1980s. But there is an offsetting trend in net investment by state and local governments, which has declined rather significantly since the 1970s. All in all, a proper accounting for the trend in government investment probably would accentuate the decline in net national investment seen in the national income accounts, rather than reduce it.

A second criticism argues that the size of the budget deficit's contribution to reducing national saving and investment, is overstated because of inflation. Payments of interest on government debt contain an inflation premium to compensate wealthholders for losses in the real value of their holdings of government debt. But since wealthholders should tend to reinvest the inflation premiums in financial markets in order to maintain their real wealth, any government borrowing undertaken to pay for these premiums would tend to be matched by a heightened flow of private saving and therefore would not tend to crowd out private investment. It is therefore argued that the measured federal budget deficit overstates the claim of the government on private saving by the amount of the inflation premiums.

However, while the argument that both the federal budget deficit and private saving are overstated because of inflation is correct, the inflation adjustment has changed remarkably little over time relative to NNP because changes in inflation have tended to be offset by opposite movements in the debt-to-NNP ratio. Thus, the debt-to-NNP ratio fell through the 1970s as inflation rose, but then rose in the 1980s as inflation fell. So the

inflation-adjusted deficit increased in relation to NNP by about as much as the unadjusted deficit did (Congressional Budget Office (1990)). As a result, the measured contribution of the federal budget deficit to the collapse in national saving and investment is about the same, whether this adjustment is made or not.

A final criticism is that households make far-sighted adjustments to government deficits. In this case, any increase in the federal budget deficit would be perceived to imply equally large tax increases (plus interest payments on the accumulated debt) to be paid in the future either by themselves or their heirs. Therefore, households would save an equal amount and use it to pay future taxes. As a result, the increase in government dissaving due to the emergence of the deficit would be exactly offset by a rise in private saving, leaving total saving and investment unaffected by the budget deficit.

This point, known as "Ricardian Equivalence," is currently disputed among economists. On the surface, at least, this view appears to be grossly contradicted by the events of the last two decades: The increase in the federal budget deficit was accompanied by a decrease, not an increase, in private saving. Proponents argue, however, that other factors were working to reduce the saving rate at the same time that the budget deficit was acting to increase it. The most likely candidate is an unanticipated increase in wealth, due first to price increases in houses and later in equities, which reduced the incentive to save. However, by the end of the 1980s the Federal Reserve Board's comprehensive measure of real national net worth, at market value, was somewhat below trend rather than above it.

In practical terms, would balancing the budget be more likely to return the economy's saving and investment back toward historical norms or leave them unchanged? According to the Ricardian Equivalence view, private saving would fall by about as much as the reduction in the budget deficit. But that would lower private saving to levels far below the range of historical experience. Specifically, the 4 percentage point reduction in the high-employment budget (relative to NNP) required to move it to a balanced position would push the private saving rate down from its current level of about 6½ percent of NNP to only 2½ per-

cent, compared with a historical range of 6½ to 11 percent during other periods of balanced budgets, which seems unlikely.

Conclusion

The basic source of the growing federal budget deficit since the late 1960s has been rising entitlement payments relative to income. Taxes to pay for social insurance have risen by almost as much, but offsetting this on the revenue side have been falling corporate, personal income, and excise taxes relative to income. Although net private saving has declined somewhat in this period, the rising federal budget deficit appears to have been the largest contributor to the collapse in national saving and investment. All else equal, moving toward a federal budget balance likely would contribute to bringing the rate of national saving and investment back to normal. Absent a correction in the rate of saving and investment, the economy likely would continue on a lower long-term path of growth, in which losses from lower future consumption would outweigh the gains from higher current consumption.

Closing the budget deficit requires restoring some taxes, as well as cutting entitlement and nonentitlement spending. However, high marginal tax rates that tend to yield little revenue and discourage private saving and investment and cuts in government investment that would be counterproductive should be avoided. In this connection, the Clinton Program does increase tax revenues and reduce spending growth; however, it remains to be seen whether its relatively high marginal tax rates will yield as much revenue as projected, or encourage investment as much as hoped.

Adrian W. Throop
Research Officer

References

- Congressional Budget Office. 1990. "The Federal Deficit: Does It Measure the Government's Effect on National Saving?"
- Harris, E., and C. Steindel. 1991. "The Decline in U.S. Saving and Its Implications for Economic Growth." Federal Reserve Bank of New York *Quarterly Review* (Winter).

Opinions expressed in this newsletter do not necessarily reflect the views of the management of the Federal Reserve Bank of San Francisco, or of the Board of Governors of the Federal Reserve System.

Editorial comments may be addressed to the editor or to the author. . . . Free copies of Federal Reserve publications can be obtained from the Public Information Department, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 974-2246, Fax (415) 974-3341.

P.O. Box 7702
San Francisco, CA 94120

Research Department
Federal Reserve
Bank of
San Francisco

Index to Recent Issues of *FRBSF Weekly Letter*

| DATE | NUMBER | TITLE | AUTHOR |
|------|--------|---|-----------------|
| 2/26 | 93-08 | Saving—Investment Linkages in the Pacific Basin | Kim |
| 3/5 | 93-09 | A Single Market for Europe? | Glick/Hutchison |
| 3/12 | 93-10 | Risks in the Swaps Market | Laderman |
| 3/19 | 93-11 | On the Changing Composition of Bank Portfolios | Neuberger |
| 3/26 | 93-12 | Interest Rate Spreads as Indicators for Monetary Policy | Huh |
| 4/2 | 93-13 | The Lonesome Twin | Throop |
| 4/9 | 93-14 | Why Has Employment Grown So Slowly? | Trehan |
| 4/16 | 93-15 | Interpreting the Term Structure of Interest Rates | Cogley |
| 4/23 | 93-16 | California Banking Problems | Zimmerman |
| 4/30 | 93-17 | Is Banking on the Brink? Another Look | Levonian |
| 5/7 | 93-18 | European Exchange Rate Credibility before the Fall | Rose |
| 5/14 | 93-19 | Computers and Productivity | Schmidt |
| 5/21 | 93-20 | Western Metal Mining | Schmidt |
| 5/28 | 93-21 | Federal Reserve Independence and the Accord of 1951 | Walsh |
| 6/4 | 93-22 | China on the Fast Track | Cheng |
| 6/18 | 93-23 | Interdependence: U.S. and Japanese Real Interest Rates | Hutchison |
| 6/25 | 93-24 | NAFTA and U.S. Jobs | Moreno |
| 7/16 | 93-25 | Japan's Keiretsu and Korea's Chaebol | Huh/Kim |
| 7/23 | 93-26 | Interest Rate Risk at U.S. Commercial Banks | Neuberger |
| 8/8 | 93-27 | Whither California? | Sherwood-Call |
| 8/20 | 93-28 | Economic Impacts of Military Base Closings and Realignments | Sherwood-Call |
| 9/3 | 93-29 | Bank Lending and the Transmission of Monetary Policy | Trehan |
| 9/10 | 93-30 | Summer Special Edition: Touring the West | Cromwell |

The *FRBSF Weekly Letter* appears on an abbreviated schedule in June, July, August, and December.