

November 4, 1983

Deficits, Interest Rates and the Economy

It is by now a commonplace that interest rates in the United States have risen in recent years to levels that are very high by historical standards. Nominal interest rates consist of both a real rate of return and an inflation premium, and most economists believe that it is the real rate that is above its historical norm. At least at the short end of the maturity spectrum, the fact that nominal market yields remain high despite the recent decline in inflation is supporting evidence for their belief.

It is widely argued that these high levels of real interest rates are connected in some way with the emergence of large federal government deficits and, hence, that these deficits pose a threat to the growth of the real economy in either the short or the long run. This *Letter* seeks to clarify these issues by examining how, in principle, federal deficits might be expected first, to raise real interest rates on securities, and second, to slow the growth of real GNP.

Sources of deficits

A deficit in the federal budget occurs when federal outlays over any period exceed revenues from taxation. If this happens, the difference must be made up by Treasury borrowing, that is, by selling Treasury securities either to the non-bank public or to the banking system including the Federal Reserve. To limit the range of issues to be discussed, I will assume throughout this *Letter* that monetary policy—in the sense of the rate of growth of the stock of money—is constant. This implies that all Treasury borrowing to finance a deficit comes from the non-bank public, and none from the central bank.

The deficit may increase as the result either of an exogenous change in fiscal policy—a lowering of tax rates or an expansion of expenditure programs, or of an endogenous deterioration in business conditions, which

either reduces tax revenues or adds to expenditures (such as unemployment compensation payments) with no change in policy. Market commentators often fail to distinguish these two sources of deficits, while many economists argue that only policy-induced increases in the deficit have any significant influence on interest rates.

One widely used summary indicator of fiscal policy is the *high-employment deficit*, which measures how large the deficit would be if the economy were at full employment. The high-employment deficit is thought to be a better indicator of fiscal policy than the actual deficit because it varies only in response to changes in policy, whereas the actual deficit responds to the state of the economy as well as to policy changes. Policy changes that add to the high-employment deficit are thought to be expansionary while those that reduce it are contractionary.

In the case of a policy-induced increase in the deficit, the high-employment deficit rises along with the actual deficit. By contrast, in the case of an endogenous increase, only the actual deficit rises and the high-employment deficit is unchanged. Thus, the argument that only policy-induced changes in the deficit affect interest rates implies that rates are influenced by changes in the high-employment deficit rather than the actual deficit. I will, however, argue the contrary: that interest rates are only indirectly related to the high-employment deficit but are directly affected by the actual deficit.

Deficits and interest rates

The fundamental observation leading to this conclusion is simply that, whatever its source, an increased actual deficit must be *financed*. The public must be induced to invest a larger proportion of its wealth in government securities. That is, the Treasury must "crowd out" the competing private sector claims on the available supply of

Research Department
Federal Reserve
Bank of
San Francisco

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.

savings. This crowding out requires that interest rates be higher than they would be if the level of GNP were the same but there were no deficit. Only at higher interest rates can private borrowers be induced to reduce their claims on the supply of savings in order that the claims of the Treasury can be satisfied. In this sense, a larger government deficit implies a higher real interest rate.

In a recent *Weekly Letter*, Kevin Hoover and Joseph Bisignano pointed out that this argument that deficits raise interest rates will not hold if members of the public fully recognize that the issue of government securities today implies higher taxes to pay interest and principal in the future. In such a case, a switch from tax to deficit financing should lead households to save and lend an exactly offsetting amount and so should have no effect on interest rates. But most economists—including David Ricardo, the first exponent of this theoretical argument—believe that it assumes a greater degree of rationality and farsightedness than most households possess.

If an increased deficit results from the adoption of a more expansionary fiscal policy—so that both the actual and the high employment deficits rise—its *financing effect* on interest rates will be supplemented by an *income effect*. Except in the Ricardian case of perfectly rational and farsighted individuals, a policy-induced increase in the deficit tends to stimulate more rapid growth of nominal GNP. Faster income growth tends to increase the quantity of money the public needs to hold to carry on transactions. With a given money growth rate, this tends to push up interest rates. Faster growth may also raise interest rates by causing businesses to become more optimistic and, therefore, more willing to borrow to finance such projects. In somewhat different terms, faster income growth raises the demand for both short- and long-term credit and so tends to raise interest rates.

In contrast, if a larger deficit reflects a business downturn, the accompanying *income*

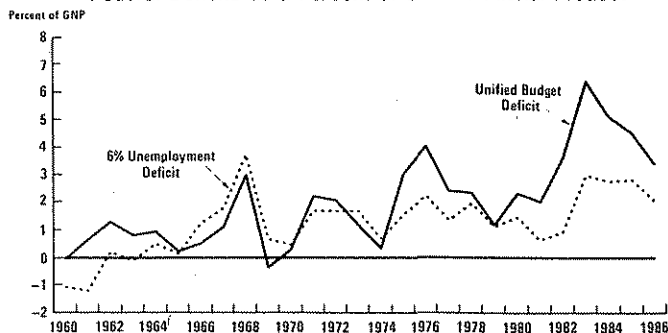
effect on interest rates will be downward. A lower level of nominal GNP will both decrease the demand for money and reduce the expected rate of return on capital projects. The private demand for credit will fall and, as a result, the Treasury's demand for funds will face less competition from the private sector. Although interest rates will be higher than they would be if there were no deficit, they will rise less because less "crowding out" of private borrowers will be required. This argument is, presumably, the basis for the view that non-policy changes in the federal deficit have little effect on interest rates.

However, it is misleading to conclude from these arguments that only policy-induced deficits have an effect on high interest rates. The volume of government borrowing is not the sole determinant of interest rates: the level of GNP is also relevant because it affects the credit demands of the private sector. If an actual deficit coincides with a rise in nominal income, interest rates will rise more than if the deficit accompanies a decline in income. But at any *given* level of nominal income, a larger *actual* deficit will be associated with higher interest rates. It is not the high-employment deficit but the *actual* deficit which must be financed! The high employment deficit only affects interest rates via its influence on the level of income. It is because an increase in the high employment deficit tends to raise GNP that it is associated with rising interest rates, *not* because there is a direct causal link between fiscal policy changes and interest rates.

Deficits and the real economy

Over the next few years, the Treasury deficit is expected to decline as nominal GNP rises and the U.S. economy approaches full employment. But even at full capacity output, a substantial deficit is expected to remain (see accompanying chart). As a result, real interest rates will be higher than they would be if the level of income were the same but the deficit were smaller. These high rates represent the inducement which

Federal Deficits as a Percent of Gross National Product



Source: Congressional Budget Office

the Treasury must offer to lay its hands on the nation's resources by borrowing rather than by levying taxes. Rates would be lower if these government claims (that is, expenditures) on real resources were reduced or if they were exercised through the tax system rather than the financial markets.

It is often suggested that high interest rates will either cause the present cyclical recovery to end prematurely, or to lower the long-term growth of the economy. This reasoning leads to the policy prescription that fiscal action be taken to narrow the deficit.

If the "business cycle" argument is meant to imply that high interest rates will so reduce aggregate demand that the economy will fall back into recession, it is probably wrong. High rates do, of course, reduce private demand. But, as pointed out above, they are largely a *symptom* of the Treasury's efforts to divert resources from the private sector to itself through the financial markets. Thus, they are an indicator of the current strength of total demand rather than a signal of future weakness. Moreover, a cutting-back of government outlays, or an increase in taxes, in order to lower the deficit would surely have a greater depressing effect on aggregate demand than an equal amount of Treasury borrowing. At least as far as *aggregate demand* is concerned, the effects of current and prospective Treasury deficits are probably less contractionary than those of the fiscal policy changes that would be needed to eliminate them.

However, deficits do not affect the economy only through the *demand* for goods and services. They also influence the capacity of the economy to *supply* output. This influence seems likely to be long-term rather than cyclical in nature.

Taxes fall predominantly on households. In 1982, out of total federal government receipts of \$614 billion, no less than \$520 billion consisted of personal income taxes and social insurance contributions. Thus,

it is reasonable to suppose that additional government outlays financed by taxes are made principally at the expense of personal consumption. Most economists believe that the impact of bond-financed outlays falls more heavily on capital investment because it is more sensitive to interest rate changes than is personal consumption. Thus, a fiscal policy in which a significant proportion of government outlays is financed by borrowing—that is, one in which there is a significant federal deficit—is likely to result in more of the nation's resources being applied to current consumption and less to private capital formation. Hence, future generations—including ourselves when we grow older—will inherit a smaller stock of plant and equipment and so be able to produce less output. This is a true "burden of debt" which the present generation imposes on its heirs when it chooses to run a budget deficit.

Conclusion

These arguments suggest that as long as there is substantial excess capacity of plant and equipment and widespread unemployment of labor, the effect of high interest rates on the pace of the recovery will be less than the impact of the fiscal changes required to eliminate the deficit. However, this does not mean that the deficit has no ill-effects. Financing government outlays by borrowing rather than by taxes has both short- and long-run repercussions. The long-run effect is that future generations are impoverished in the sense that they will inherit a smaller amount of productive capital. The short-run effect is that as we approach full employment it will become more difficult to maintain the cyclical expansion because the economy has undertaken too little job-creating capital formation.

Brian Motley

FIRST CLASS

Alaska • Nevada • Oregon • Utah • Washington
 Idaho • Arizona • California • Hawaii

San Francisco

Bank of

Federal Reserve

Research Department

FIRST CLASS MAIL
 U.S. POSTAGE PAID
 PERMIT NO. 752
 San Francisco, Calif.

BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities	Amount Outstanding 10/19/83	Change from 10/12/83	Change from year ago	
			Dollar	Percent
Large Commercial Banks				
Loans (gross, adjusted) and investments*	162,025	- 194	- 1,242	- 0.8
Loans (gross, adjusted) — total#	141,998	- 219	- 701	- 0.5
Commercial and industrial	42,970	- 90	- 2,848	- 6.2
Real estate	57,317	151	- 82	- 0.1
Loans to individuals	24,830	- 63	1,419	6.1
Securities loans	2,489	- 431	- 76	- 2.9
U.S. Treasury securities*	7,485	21	884	13.4
Other securities*	12,541	4	- 1,425	- 10.2
Demand deposits — total#	41,556	-2,498	1,936	4.9
Demand deposits — adjusted	29,546	-1,618	1,624	5.8
Savings deposits — total†	66,186	- 382	34,203	106.9
Time deposits — total#	67,949	582	- 33,303	- 32.9
Individuals, part. & corp.	62,297	447	- 28,761	- 31.6
(Large negotiable CD's)	16,981	- 43	- 21,329	- 55.7
Weekly Averages of Daily Figures	Week ended 10/19/83	Week ended 10/12/83	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves (+)/Deficiency (-)	24	73		90
Borrowings	0	24		1
Net free reserves (+)/Net borrowed(-)	24	48		89

* Excludes trading account securities.

Includes items not shown separately.

† Includes Money Market Deposit Accounts, Super-NOW accounts, and NOW accounts.

Editorial comments may be addressed to the editor (Gregory Tong) or to the author . . . Free copies of this and other Federal Reserve publications can be obtained by calling or writing the Public Information Section, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 974-2246.