

Research Department
Federal Reserve
Bank of
San Francisco

October 14, 1983

Classical Reflections On The Deficit

The primary long-term effect of deficits is to reduce the rate of capital formation. Government borrowing crowds out private borrowing and causes a lower rate of investment. The lower rate of capital formation hurts productivity, decreases growth, limits the rise in real incomes and weakens our international competitiveness. (Martin Feldstein, Chairman of the President's Council of Economic Advisers in the Wall Street Journal, July 15, 1983.)

Everybody's jumping to the conclusion that [crowding out] is going to happen in 30 days... it's not going to happen in three months. (Secretary of the Treasury, Donald T. Regan, quoted in the Washington Post, August 23, 1983.)

With the prospect of large federal government deficits during this year and perhaps for several years to come, the question as to what their effects will be is in the forefront of discussions of economic policy. Reasonable people evidently differ on the answer. Unfortunately, it is not always clear from their pronouncements what the basis of their judgments is. Close examination shows that what may lie at the heart of their differences are some fundamental conceptual issues in economic theory—in particular, whether taxation and government borrowing are economically equivalent forms of government finance, and whether it makes a difference if government debt takes the form of interest-bearing bonds or non-interest-bearing currency and bank reserves. This *Letter* builds on a discussion by the nineteenth century English classical economist David Ricardo to help clarify these issues.

Government's budget constraint

All federal expenditures must be paid for, but there is a choice of sources for the needed funds. The Treasury can raise taxes, or it can go into debt. Its debt may either be held by the public at large or by the Federal

Reserve System, which although formally independent of the executive branch, can be treated for our purposes as part of the government. When the Federal Reserve buys Treasury debt, it pays with an increase in the monetary base which will be held either as reserves of depository financial institutions or as currency in the hands of the public. This transaction is sometimes called "monetizing the debt," and it leaves the public holding more non-interest bearing government liabilities in the form of money and fewer interest-bearing liabilities in the form of Treasury securities.

Government's expenditure is constrained to equal the sum of taxes plus the sales of debt to the public (including banks) plus the creation of monetary base by the Federal Reserve. Since deficits are the excess of government expenditure over taxes, the budget constraint may also be expressed as: deficits must equal the sales of debt to the public plus the creation of monetary base by the Federal Reserve.

Ricardian equivalence

The current policy debate centers on whether or not different compositions of government finance result in crowding out. In particular, does issuing more debt and lowering taxes raise real interest rates and crowd out private investment? Ricardo gave an early analysis of the problem in his *Principles of Political Economy and Taxation* (1821).

He argued that if taxpayers fully understood that government borrowing only postpones the payment of taxes, it would not matter at all how deficits were financed. If the government chose to finance a given expenditure through taxes, each taxpayer could borrow enough to pay his taxes (i.e., sell a bond) and then would immediately have to pay only the interest and some portion of the principal on the loan. If the government financed

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.

the same deficit by selling its own bonds to the public, the taxpayers would be taxed to pay the interest and the currently maturing principal on the government bonds. In either case, the taxpayer might pay the taxes without borrowing the money, but if he treated the amount paid as a loan to himself, he would find that the portion of his income available for consumption would be no less than if he had actually borrowed the money. Ricardo argued, in effect, that the composition of government finance for the same level of expenditure made no difference since taxpayers can make exactly compensating adjustments in their own portfolios.

Ricardo's argument for the equivalence of debt and taxation rests on at least two implicit assumptions. The first is that taxpayers are economically similar. If this assumption were relaxed, then taxpayers' after-tax incomes would be affected by the method of government finance. Suppose, for example, that some people are seen by lenders to be a greater risk than others and are, therefore, charged a higher rate of interest. Lowering taxes and issuing an equal amount of debt means that high-risk borrowers have more cash in hand and pay it back through taxes at a lower rate than they would pay if they had borrowed it privately. Debt finance would thus affect their incomes. In the same way, if the people who buy most of the bonds differed from those who pay most of the taxes, substituting debt for taxes would affect incomes. The second assumption is that taxes are not distorting, that they do not alter the optimal allocation of resources. If this assumption were relaxed, for example, if taxes were levied only on consumption (e.g., sales tax), then lowering taxes and raising debt would favor consumption at the expense of investment.

Ricardo recognized that his argument for the equivalence of debt finance and taxation was a theoretical one that depended crucially on accurate anticipations of future taxes. He believed that, in practice, there would be "debt-illusion" in the sense that

taxpayers would save enough to pay only the taxes that cover the interest on the debt and forget about the need to repay the principal in the future. Debt finance would then appear to be more stimulative than tax finance when the economy is operating at less than full employment.

If Ricardo's theoretical argument held in practice, different splits between taxes and debt finance would not affect spendable incomes. Private saving would always adjust to the amount needed to service the debt, and interest rates would not be affected. On the other hand, if Ricardo's practical judgment were correct, taxpayers would feel richer when government expenditure is financed by debt rather than by taxes. They would want to spend more, but since they would not actually be richer, they could only spend more by saving less. To induce them to save enough to cover the debt, the interest rate on government bonds would have to rise. Higher interest rates would then discourage private investment. Thus, when there is debt illusion, the more the method of government finance opts for debt over taxes, the lower would be the level of private investment and the higher the level of private consumption.

The burden of debt

Despite showing that debt and taxes *could* be equivalent, Ricardo believed that government should favor taxes over debt even if there were no debt-illusion. His reason was that present taxes are immediate and hard to escape, but a large debt implying high future taxes would encourage emigration to avoid paying future taxes. Ricardo's argument can be reformulated to show that the present generation can escape taxes by incurring debt that must be paid by generations that live long after the present one is dead and gone. It is said that "the past is another country." The present generation, in effect, would emigrate to the past by shifting the burden of debt onto its descendants. That burden can be measured by the degree to which the capital stock is smaller because

previous generations invested less as a response to higher interest rates caused by the choice of debt financing.

This theoretical analysis raises two questions: First, can the burden of debt actually be shifted onto future generations? That is, are taxes and debt finance equivalent across generations? Second, is it desirable to shift the burden of debt? The answer to the second question depends on one's values, but its importance depends on the answer to the first question.

Ricardo believed that the burden of government debt can be shifted to other generations. His implicit assumption is that the debt must eventually be paid off by the taxpayers, but that it can be postponed by issuing more debt. If this were done continuously, no future generation would be taxed to pay off the debt. And each generation would believe falsely that it was richer, and interest rates would remain high to ensure that savings were sufficient to buy newly issued debt.

Critics of this idea argue that there is some debt size, or some ratio of the debt to national income, beyond which no one would want to buy government bonds, that is, at which the government has limited "collateral." At that point, the debt must eventually be paid off. How much collateral the government is supposed to have is not clear. Nevertheless, the critics believe that at the point at which the government could not sell any more debt, it would have to cover its deficits by creating monetary base. And they believe that this monetary expansion could cause inflation.

Can this implicit distinction between the economic effects of an increase of the interest-bearing debt and of the monetary base be sustained? One could argue, in theory, that an expansion of the debt at a rate much faster than the rate of growth of national income would require ever-rising interest rates. And since money yields a zero

or fixed rate of return, these high rates would induce people to hold more government bonds and less money. Such a situation is equivalent to a rise in the velocity of circulation of money, which would support a higher rate of inflation.

In practice, we are not facing such a hyper-expansion of government debt. Instead, we are facing a large increase in the ratio of interest-bearing government debt to non-interest-bearing monetary base. In the long-run, since both are nominal liabilities of the government, it may make little difference which is used to finance the deficit. In the short-run, however, the government can sell more debt to the private sector only by offering a higher rate of return to increase its attractiveness. That this rise in interest rates will crowd-out private investment is the principal fear of those who oppose further increases in the interest-bearing government debt.

Conclusion

Compared with the recent past, current monetary and fiscal policy in the United States places relatively more weight on deficit finance than on taxation, with the deficit being financed more by government debt than by money creation. What effects this policy stance should be expected to have on the economy in the long-run depends on how one decides the main issues discussed in this *Letter*. In other words, which Ricardo does one believe? The "practical" Ricardo expects present policy to crowd out investment, but the "theoretical" Ricardo expects few ill effects to result from the large government deficits currently facing the U.S.

Kevin D. Hoover and Joseph R. Bisignano

Research Department
Federal Reserve
Bank of
San Francisco
 Alaska • Arizona • California • Hawaii
 Idaho • Nevada • Oregon • Utah • Washington

BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding	Change from	Change from year ago	
	9/28/83	9/21/83	Dollar	Percent
Loans (gross, adjusted) and investments*	161,743	- 304	- 1,304	- 0.8
Loans (gross, adjusted) — total#	141,658	- 294	- 951	- 0.7
Commercial and industrial	43,058	- 208	- 2,675	- 5.8
Real estate	57,113	48	- 509	- 0.9
Loans to individuals	24,724	153	1,206	5.1
Securities loans	2,662	272	23	0.9
U.S. Treasury securities*	7,417	6	837	12.7
Other securities*	12,667	- 16	- 1,191	- 8.6
Demand deposits — total#	39,693	- 582	1,208	3.1
Demand deposits — adjusted	28,669	7	1,915	7.2
Savings deposits — total†	65,527	45	34,632	112.1
Time deposits — total#	67,111	- 125	- 33,922	- 33.6
Individuals, part. & corp.	61,481	- 4	- 29,474	- 32.4
(Large negotiable CD's)	17,344	- 21	- 20,679	- 54.4
Weekly Averages of Daily Figures	Week ended 9/28/83	Week ended 9/21/83	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves (+)/Deficiency (-)	107	98		254
Borrowings	103	118		70
Net free reserves (+)/Net borrowed(-)	4	- 20		185

* 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.