

A Paper on Federal Fiscal Policy

DEFICITS AND INTEREST RATES

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ABSTRACT

The government's impact on the loanable funds market and interest rates is not measured by the deficit. The net absorption of loanable funds by the government may be far greater or far smaller than the deficit. The detailed nature of governmental expenditures and revenues, not the deficit alone, is what determines the budget's impact on interest rates. We could have a condition of moderating interest rates despite a massive deficit and a strong private demand for loanable funds. Or we could have a budget that puts an upward pressure on interest rates even without a deficit. Removing or creating a deficit would probably have some impact on the net demand or supply of loanable funds but only by coincidence would it be proportional to the size of the deficit itself.

DEFICITS AND INTEREST RATES

The main budgetary focus in recent years has been on the large federal deficits and their impact on the economy, including their effect on interest rates. The question has been the extent to which the deficit, representing as it does the government's demand for loanable funds, exerts an upward pressure on interest rates. It is understood that the ultimate outcome would be influenced by many things, particularly the policy of the monetary authority.

The general understanding is that the deficit--the government's sale of debt obligations on the loanable funds market--is that aspect of the budget that most directly affects interest rates. It has been shown, however, that there is no relationship between actual or expected budget deficits and interest rates in the United States [e.g., Evans 1985].

It has also been suggested that in addition to high deficits and other traditional explanations, the relatively high real interest rates of the 80's might be explained by a significant new thesis, namely "that the savings and loan crisis contributed to high real interest rates in the past decades" [Shoven-Smart-Waldfoegel, 1991, p.9]. That thesis emphasizes the substitutability of Treasury bills and Certificates of Deposit of insured financial institutions.

This paper does not deal with the question of the best measurement of the deficit itself. We use just a plain vanilla deficit. The variant of the deficit used here may be regarded as "the public sector borrowing requirement (PBSR), which measures government's use of new financial resources, net of repayment of previously incurred debt." [Blejer and Cheasty, 1991, p. 1646]. One may say: "[T]he deficit equals the difference between total public debt outstanding at the beginning and the end of the year." [Ibid. p.1646.] There may, of course be definitional problems associated with "total public debt outstanding".

Another matter not considered in this paper is the intergenerational question as described, for instance, in Auerbach, Gokhale and Kotlikoff 1991.

The contention of this paper is that concentration on the size of the deficit within the budget obscures the fact that many aspects of the rest of the budget, expenditures and revenues, have a direct impact on the demand and supply of loanable funds, hence interest rates. The relevant governmental demand for loanable funds is not the budget deficit; it is the budget deficit bolstered or reduced by the loanable funds components of taxation and expenditures.

A deficit does not necessarily have a greater impact on interest rates than a balanced budget. In fact, some balanced budgets may put a greater upward pressure on interest rates than some deficits, even large deficits. A balanced budget, long declared to bolster the GNP [Cf.

Somers 1977] is not necessarily neutral in its impact on interest rates. Nor does this result rely on changes in money supply or money holdings.

We may seem to be striving for a paradoxical conclusion since a deficit obviously means some net government borrowing (including any money creation by the Treasury itself) while a balanced budget by definition means no net government borrowing. Whence comes the upward pressure on interest rates? It comes from those components of government revenues that reduce the private supply of loanable funds to the the extent that there are no offsets on the expenditure side. In order to see this, we try to isolate the impact of government expenditures and revenues on the the loanable funds market. (Cf. Somers 1966).

The Impact of Government Budgets on the Loanable Funds Market

An examination of the components of expenditures and revenues suggests that the deficit is not the only budgetary item that may be guilty of "crowding out" private borrowing. Some budgets--whether surplus, balanced or deficit budgets--may even have the opposite effect, "augmenting" rather than "crowding out" private borrowing.

The Treasury or "fisc" is a machine that takes in funds through its tax revenues and any net borrowing and pays out funds through its expenditures and any net repayment of debt. The approach here is with what would have been done with the funds by the private economy if the government had not taken them in or "absorbed" them; and with what will be

done with the funds by the private economy when the government pays them out or "releases" them. This is a "what if" analysis--hard to handle empirically but no problem at all theoretically. For the purpose of the analysis it is assumed that there is no change in total funds available in the economy as a whole, private plus government.

Each instrument of governmental fiscal activity--expenditures, revenues and debt--is considered for its impact on consumption and loanable funds. Where the government absorbs funds, the question is whether the funds would have been spent on consumption or put on the loanable funds market. Where the government releases funds, the question is whether they will augment spending on consumption or augment the supply of loanable funds available to the private economy. The fisc can convert loanable funds into consumption funds and vice versa.

The Deficit as an Absorber of Loanable Funds

Since the private purchase of government debt is voluntary, we can assume that the funds would otherwise have been used to purchase private debt instruments rather than being spent on consumer goods and services. Hence it appears obvious that the deficit as we know it represents an absorption of loanable fund by the government with its resulting impact on interest rates. But that is not necessarily the case in all societies at all times.

The Deficit as an Absorber of Consumption Funds

Consumption funds? This may seem to be a ridiculous suggestion even as a theoretical possibility. After all, the purchase of a debt instrument is by definition a loan transaction.

Yet we must remember that our concern is with what would have been done with the funds if they had not been used for the purchase of those debt instruments. Suppose the purchase of bonds was compulsory rather than voluntary. Then we can assume that at least some of the funds would have been used for consumption if not for the forced purchase of bonds. We cannot assume that all of it would have been spent on consumption because there may simply be some private portfolio switching into the government debt.

This was Keynes' plan in World War II: force people to buy government bonds (actually, give a bond to the taxpayer for part of the income tax). It was designed simultaneously to help finance the deficit and reduce the pressure of consumer demand on prices.

There may also be an element of compulsion in less drastic measures. The peer pressure in war-time bond drives may be of that character. Where low-income, low-asset employees were involved, we cannot assume that consumption was left intact. (By analogy, repayment of such debt--whether originally purchased by compulsion or peer pressure--might represent a release of consumption funds to some extent.)

Absorption of Loanable Funds Through Taxation

Some part of the funds absorbed by the government through taxation would have been saved and put on the loanable funds market if the government had not taken it. This is just as effective in reducing the supply of loanable funds and raising interest rates as if it were caused by the deficit. There is a reduced supply of loanable funds.

Absorption of Consumption Funds Through Taxation

The bulk of the funds absorbed through taxation will generally be at the expense of consumption where taxation looms large in private budgets. Some readjustment in private budgetary categories will undoubtedly occur because of taxation but it is hard to conceive of consumption being left intact.

Release of Loanable Funds Through Government Expenditures

Those who receive money from the government may save part of it and put it on the loanable funds market. Some part of government expenditures may even be in the form of a direct allocation to lending agencies, in which case the release of loanable funds is more obvious and more readily measurable. Private portfolio readjustments between holdings of private and government debt may also occur. The nature of the payment and the recipient will determine the outcome. Welfare payments would presumably have no element of loanable funds unless there is gross abuse; payments to large government contractors and high-salaried individuals would presumably have some element of loanable funds.

Release of Consumption Funds Through Government Expenditures

When we think of government expenditures being used deliberately to stimulate the economy, we generally assume that the impact or, at least, the subsequent stimulus will be mainly through consumer demand--the "demand" side rather than the "supply" side. The latter would operate more through the availability of loanable funds released by reduced taxation.

Net Government Absorption of Loanable Funds

We can now pick up the pieces. The net government absorption of loanable funds, hence the impact on interest rates, is made up of a lot more than the deficit. To the deficit we must add that portion of taxation that also absorbs funds that would have been saved and put on the loanable funds market. This gives us a starting point, a gross government absorption of loanable funds, that may be far in excess of the deficit alone. From this gross amount we must subtract that portion of government expenditures that releases loanable funds. There is no reason to believe that the amounts added and the amounts subtracted will generally offset each other. The resultant is the net government absorption of loanable funds by all aspects of the budget combined: expenditures, taxation and deficit. The net figure may be positive or negative. (A surplus used to repay government debt would contribute to a government release of loanable funds.)

The net government absorption of loanable funds and the net government release of consumption funds will be equal when there is no net change in money supply or money holdings. The process may, of course, be reversed.

A Budget that Augments the Effect of the Deficit on Interest Rates

This discussion is illustrated in the accompanying diagrams. The deficit is given as a separate item here to show how the other budgetary instruments, expenditures and taxation, may combine to accentuate or mitigate the effect of the deficit on interest rates.

In Figure 1 the total demand for loanable funds, D' , is made up of the deficit plus the "private demand", D , which is the demand for loanable funds before we take account of the impact of taxation and governmental expenditures.

On the supply side, we begin with the gross private supply of loanable funds, S . We subtract from that a hypothetical amount of loanable funds absorbed by the government through taxation (less that released through expenditures.) In this example, we assume that the absorption through taxation substantially exceeds the release through expenditures. The result is that there is a reduced supply of loanable funds, S' , available.

The actual market interest rate is shown at point A, the intersection of the two market curves, D' and S' . It is higher than the interest rate that we would have estimated if we had ignored the governmental impact on loanable funds through taxation and expenditures. The latter rate, the

"false" market rate, is shown at point "F", the intersection of the D' and S curves.

A Budget that Mitigates the Effect of the Deficit on Interest Rates

Figure 2 shows the net impact of the government on the loanable funds market in a hypothetical case where there is a substantial release of loanable funds through governmental expenditures net of absorption through taxation. The market interest rate is shown at point "A", the intersection of the two final curves, D' and S'.

Only the initial impact is reviewed here. Any positive or negative economic effects that might have consequences for income and savings--as through the operation of the multiplier--are ignored as are any effects of higher or lower interest rates on exchange rates.

Also ignored are intertemporal shifts in, for instance, labor effort. [Cf. Carlstrom and Gokhale, 1991.]

If we assumed that government consumption was a perfect substitute for private consumption and taxes were lump-sum imposts rather than based on income or spending, the government would have no effect on either output or interest rates. [Cf. Carlstrom and Gokhale 1991].

If the government were spending its money on actual "public" goods like national defense (rather than acceptable substitutes for private goods), then some change in the consumption-savings break-down would be expected. We frequently forget that true "public" goods are resorted to

because there are no feasible private substitutes. [Somers 1971, pp. 573-4].

If the future taxes required to pay off the debt incurred by the deficit were fully perceived and discounted, the resulting supply of savings would completely offset the deficit's impact on the loanable funds market. Moreover, the public's perception of the deficit-financed portion of government expenditures, whether on consumption or investment goods, will also affect current consumption and saving, hence the availability of funds on the loanable funds market. [Cf. Kormendi 1983 p. 994].

Tables 1 and 2 provide a numerical illustration, using purely hypothetical figures. A thorough, detailed analysis of the actual budget would be required to get a realistic estimate of the net effect of the budget as a whole on interest rates.

In both tables it is assumed that a deficit of \$300 billion results from expenditures of \$1200 billion and revenues of \$900 billion. The deficit provides a demand for \$300 billion of loanable funds through the sale of government bonds, notes and bills.

In Table 1 it is assumed that the \$1200 billion of expenditures bolsters consumption by \$1000 billion and provides loanable funds of \$200 billion. The revenues of \$900 billion withdraw \$600 billion that would have been spent on consumption and \$300 billion that would have been available on the loanable funds market.

The net impact of the budget as a whole on the loanable funds market is then a withdrawal of \$400 billion: \$300 billion through revenues and another \$300 billion to finance the deficit, partly offset by \$200 billion of loanable funds provided on the expenditure side of the budget, leaving a net withdrawal of \$400 billion from the loanable funds market though the deficit itself is only \$300 billion.

In Table 2 it is assumed that the \$1200 billion of governmental expenditures supplies \$900 billion of consumption funds and \$300 billion of loanable funds; and governmental revenues of \$900 billion withdraw \$700 billion of consumption funds and \$200 billion of loanable funds. Here the negative effect on the availability of loanable funds is only a net of \$200 billion despite the deficit of \$300 billion. Though the deficit's withdrawal impact is augmented by \$200 billion of loanable funds withdrawn through revenues, that is offset by the \$300 billion of loanable funds released through the particular expenditures involved here (such as direct student, veteran, farm and home loans). [Direct student loans were under consideration in Congress in October 1991. Wall Street Journal, October 23, 1991, p. C19.] The direct loans have all the trappings of ordinary loans, including going bad. For instance, between October 1, 1990 and June 30, 1991, five major governmental lenders referred \$520 million in bad debts to the Justice Department for collection. They came from the Small Business Administration and the departments

of Housing and Urban Development, Veterans Affairs, Education and Agriculture. [Wall Street Journal, November 5, 1991, p.B8].

The tables presented here implicitly assume certain "givens"; otherwise, the single numbers would not be available in place of the schedules and shifts in the schedules implied in the graphs in Figures 1 and 2. The tables just give an instant picture of *ex post* data under an assumed set of conditions.

Balanced Budgets and Interest Rates

Now suppose that we decide to balance the budget. Will that not automatically relieve the upward pressure on interest rates? Not necessarily. The reason is that the deficit can be eliminated only by changing expenditures or revenues or both, absent money creation by the Treasury itself. Those changes may in themselves have loanable funds components and increase or decrease the upward pressure on interest rates.

To elaborate. One would certainly think that a reduction in the deficit would in and of itself mean a commensurate reduction in the governmental impact on the demand for loanable funds. Not so. The deficit is an arithmetic contrivance, the excess of expenditures over revenues; an excess that requires government borrowing. There is no such thing as a reduction in the deficit "other things being equal." Either expenditures have to go down or revenues have to go up, or both, absent money creation by

the Treasury. The details of these changes could partially or wholly offset the deficit- borrowing's direct impact on the loanable funds market.

The hypothetical example in Table 3 might clarify this point. Suppose, as in Table 2, we have a deficit of \$300 billion through expenditures of \$1200 billion and revenues of \$900 billion. Now if we wiped out the \$300 billion deficit we might think that we were obviously reducing the upward pressure on the interest rates by the same amount or close to it. Not necessarily. Suppose the balancing of the budget has been accomplished by cutting expenditures by \$300 billion and the cut came about entirely by removing governmental loan programs as in Table 3. Then it's a wash as far as the pressure on interest rates is concerned. Table 4 illustrates the removal of the same deficit through a different set of expenditure cuts.

Tables 3 and 4 indicate that even a balanced budget, i.e., a zero deficit, may have some impact on the loanable funds market, hence, interest rates. Further consequences appear if we invoke the balanced budget multiplier theorem. The traditional theorem concentrates on income expansion through spending and respending on consumption. [Somers 1977]. There is also a savings component that has been regarded as a "leakage"; but we must recognize that savings form a supply of loanable funds and affect interest rates. These multiplier consequences go beyond the "impact" shown in Tables 3 and 4. (The possibility that there are savings

that are kept indefinitely in the cookie jar or under the mattress is ignored here.)

These extreme examples are not suggested as being realistic but merely as illustrating the points made here:

1. *The deficit is not the measure of, nor even always a good first approximation to, the governmental impact on interest rates.*

2. *A balanced budget does not ensure, nor always even imply, interest rate neutrality.*

The Variety of Interest Rates and Risk Premiums

The single "interest rate" considered here is a homogeneous rate stripped of the plethora of different risk premia and terms actually prevalent in the markets. Project risks obviously affect the risk premia. Inflationary and resulting tax premia also affect market interest rates (Darby 1975) as do government guarantees such as those covering savings and loan deposits (Shoven-Smart-Waldfoegel 1991). These practical considerations would alter the results shown in the simple markets depicted in Figures 1 and 2.

Conclusions

The government's impact on the loanable funds market and interest rates is not measured by the deficit. The net absorption of loanable funds by the government may be far greater or far smaller than the deficit. The detailed nature of governmental expenditures and revenues, not the deficit alone, is what determines the budget's impact on

interest rates. We could have a condition of moderating interest rates despite a massive deficit and a strong private demand for loanable funds. Or we could have a budget that puts an upward pressure on interest rates even without a deficit. Removing or creating a deficit would probably have some impact on the net demand or supply of loanable funds but only by coincidence would it be proportional to the size of the deficit itself.

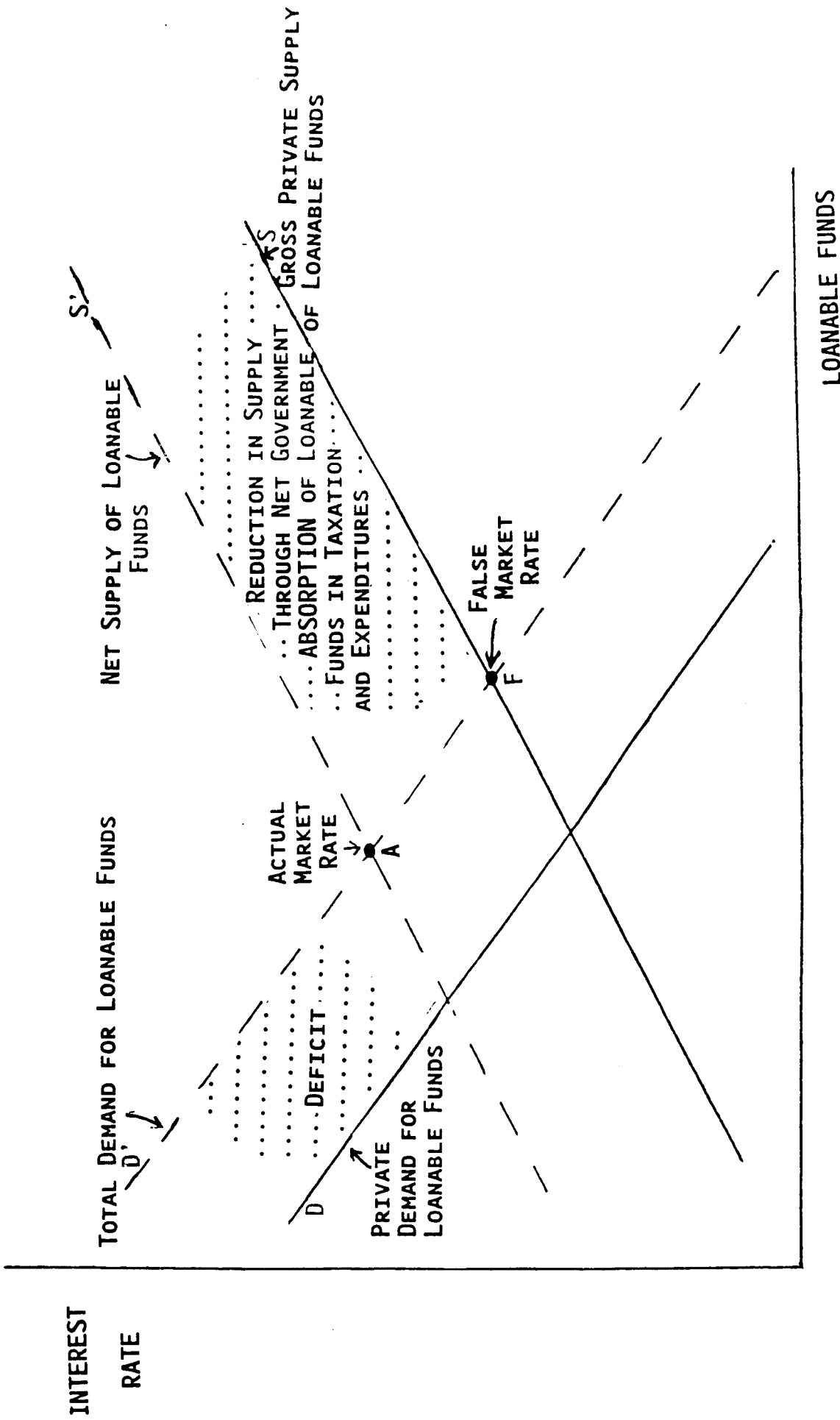


FIGURE 1. BUDGET ACCENTUATES THE EFFECT OF THE DEFICIT ON INTEREST RATES

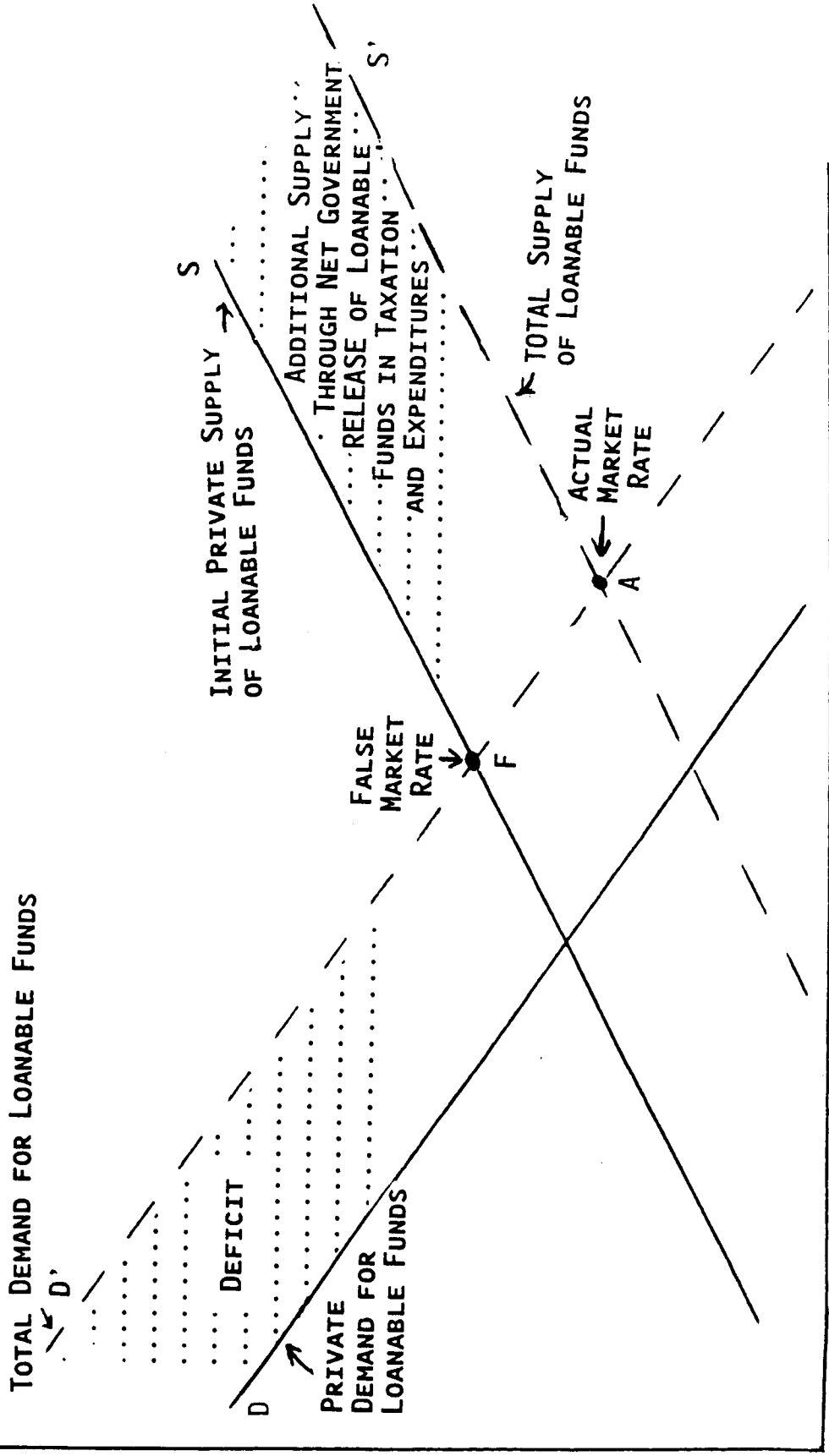


FIGURE 2. BUDGET MITIGATES THE EFFECT OF THE DEFICIT ON INTEREST RATES

Table 1

Budget Accentuates the Effect of the Deficit on Interest Rates
A Hypothetical Illustration
(In Billions)

	BUDGETARY TOTALS	ASSUMED IMPACT	
		ON CONSUMPTION	ON LOANABLE FUNDS
EXPENDITURES	\$1200	+\$1000	+\$200
REVENUES	900	- 600	- 300
DEFICIT	<u>300</u>	0	- 300
NET IMPACT		<u>+ 400</u>	<u>- 400</u>

Table 2

Budget Mitigates the Effect of the Deficit on Interest Rates
A Hypothetical Illustration
(In Billions)

	BUDGETARY TOTALS	ASSUMED IMPACT	
		ON CONSUMPTION	ON LOANABLE FUNDS
EXPENDITURES	\$1200	+\$900	+\$300
REVENUES	900	- 700	- 200
DEFICIT	<u>300</u>	0	- 300
NET IMPACT		<u>+ 200</u>	<u>- 200</u>

Table 3

Balancing the Budget-

Example: Deficit Removal Leaves Interest Impact Unchanged
A Hypothetical Illustration
(In Billions)

	BUDGETARY TOTALS	ASSUMED IMPACT	
		ON CONSUMPTION	ON LOANABLE FUNDS
EXPENDITURES	\$900	+\$900	0
REVENUES	900	-700	- 200
DEFICIT	<u>0</u>	0	0
NET IMPACT		<u>+ 200</u>	<u>- 200</u>

[Compare with Table 2]

Table 4

Balancing the Budget-

Example: Deficit Removal Reduces Interest Impact
A Hypothetical Illustration
(In Billions)

	BUDGETARY TOTALS	ASSUMED IMPACT	
		ON CONSUMPTION	ON LOANABLE FUNDS
EXPENDITURES	\$900	+\$800	+\$100
REVENUES	900	- 700	- 200
DEFICIT	<u>0</u>	0	0
NET IMPACT		<u>+ 100</u>	<u>- 100</u>

[Compare with Table 2]

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