FINANCING THE GOVERNMENT DEFICIT

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The following comments are divided into essentially two parts. In Section I, an explicit financing relationship for the U.S. government is derived, which relates the deficit or surplus (unified budget) plus the deficit or surplus of off budget agencies to changes in the net source base and other factors. I have included a discussion of what items are involved in these other factors, and identified the items which must be forecast in order to make a projection of the impact of a projected deficit or surplus in the private capital markets under different assumptions about monetary policy. I welcome any comment on the appropriateness of the categories which I have devised, and/or the techniques which I propose to forecast some of the components. In addition, I would appreciate any helpful suggestions on forecasting the component of the relationship related to foreign transactions.

In Section II I have made some comments on things which I see as significant factors in recent financing, and make some rough guesses as to what the coming fiscal year may bring.

I. Components of the Financing Identity and Some Forecasting Proposals

At various meetings in the past, I have tried a number of semi-systematic presentations of the relationship between the government deficit or surplus and various components of the financing problem. I have finally made the effort to trace down a systematic relationship between changes in the net source base and the deficit or surplus. The relationship is derived from two basic identities: the first the so called means of financing identity data for which are available in various Treasury publications, and the second the balance sheet of the Federal Reserve System which is presented in the Consolidated Statement of Condition in the Federal Reserve Bulletin. Several other minor definitions also enter into the computations. The details of the development are presented in the Appendix to this paper. The data for fiscal years 1974-1976, and quarterly thereafter, are presented in Table 1. It should be noted that all data are derived from changes in end-of-quarter stock figures and are seasonally unadjusted, hence they are not comparable with the average of daily figures, seasonally adjusted data which are usually cited.

It seems to me that the goal of this type of investigation is to be able to attempt to project the amount of financing through private credit markets which will be associated with a projected deficit and proposed (or projected) growth paths of the base. As can be seen from Table 1, in reality this does not amount to a straightforward subtraction of the change in the base from the projected deficit, as the issue is typically presented in the textbook discussion of the subject. There are a large

number of other components in the relationship, some of which have been and can be quite important in at least short run financing developments. I shall first try to identify what is in the various groupings which I have developed and then discuss how they have affected recent financing and speculate on some future developments.

The first category is an approximation to the volume of funds raised by the Treasury in credit markets from private sources. It is the total amount of Treasury and Agency debt issued outside of the Treasury less the change in debt holdings by the Federal Reserve and Foreign official institutions. The latter is not quite accurate, as it excludes changes in holdings of agency debt by such institutions, since I have been unable to find any published source in which this information is tabulated separately. It is also possible that since this is an attempt to measure on a net basis, changes in acceptances held by the Federal Reserve System (which now appear in category VII) should be subtracted from this grouping.

The second, third and fourth categories are self explanatory. The fifth, which involves foreign transactions probably needs some explanation, particularly with respect to the treatment of "swaps." When the Fed engages in "swap" operations, the two accounts which are involved are the other assets of the Federal Reserve System (denominated in foreign currencies) and foreign deposits at the Federal Reserve. For example, when the Fed obtains foreign currencies in a "swap" operation, it increases both other assets and foreign deposits.¹ Thus, category V is unaffected by foreign currency swap operations.

¹ See Federal Reserve Bank of New York, Glossary: Weekly Federal Reserve Statements, p. 18.

Categories VI and VII are also fairly clear. Category VIII warrents some explanation, since a number of the items are not familiar, and the definitions are not easily available. First, other cash and monetary assets of the Treasury includes Treasury Cash and the Gold Balance as sub items. Thus, VII essentially includes net cash and monetary assets of the Treasury which involves basically time deposits, some cash items in process of collection, and some miscellaneous transit items. The other two categories which are difficult to identify are Miscellaneous Treasury Liabilities and Miscellaneous Treasury Assets. Much of what is included in these entries is of the nature of float.² However, there are two important exceptions which arise out of the peculiarities of the book valuation of Treasury securities.

The book valuation of all government securities is at par, not at issue price. Hence, the discrepancy between the book value of the debt issue (changes in which are indicated under I above), and the actual revenue raised from a debt sale has to be accounted for somehow. This is handled in the miscellaneous asset and liability accounts. If debt is sold at a discount (as for example with a Treasury Bill auction, then the outstanding value of the debt is increased by the par value of the bills on the books of the Treasury, and the discount is entered as a miscellaneous asset account entitled "deferred interest (discount) on marketable United States Treasury securities." On the other hand, if

²See the Combined Statement of Receipts, Expenditures and Balances of the United States Government.

a note or bond is issued at a premium, then the par value of the issue is added to the value of the outstanding debt, and a miscellaneous liability item entitled "deferred interest (premium) on public debt subscriptions, United States Treasury" is increased by the amount of the premium. I have been unable to determine if these miscellaneous accounts are left unchanged until the time that the debt issue is retired, or if some schedule is used to allocate the discount or premium into interest paid over the life of the security. Judging from the accounting practices of the Federal Reserve, which also carries its government securities at par value, I suspect that the premium or discount is gradually phased out over the life of the security.³ In any case, the changes in these categories, particularly the asset item have been substantial at times in the recent past, and their character is such that their behavior should not be the random kind of behavior that can be expected from the float type items which comprise the remainder of the entry.

The final category is that of deposit funds. Deposit funds are defined as:

combined receipt and outlay accounts established to account for receipts that are either (a) held in suspense temporarily and later refunded or paid into some other fund of the government upon administrative or legal determination as to the proper disposition thereof, or (b) held by the government as a banker or agent for others and paid out at the direction of the depositor. Such funds are not available for paying salaries, expenses, grants, or other outlays of the government.⁴

³ See Federal Reserve Bank of New York, Glossary: Weekly Federal Reserve Statements, p. 13, "Other Liabilities and Accrued Dividends."

⁴ Combined Statement of Receipts, Expenditures and Balances of the United States Government, 1976, p. 3.

I have made a preliminary attempt to reconcile the identity which I have derived with the published information in the Flow of Funds data. I am rather pessimistic that the Flow of Funds source will ever prove useful in tracking down the identity. Some of the items just cannot be identified in the Flow of Funds data; some of the published categories combine items from different categories which I have defined (though this is probably surmountable with the use of unpublished data), and most troublesome of all, in places where the categories would seem to match up, the numbers frequently are completely dissimilar (even when looking at the seasonally unadjusted flows in the Flow of Funds accounts). I intend to pursue this investigation somewhat further, but it may prove that to obtain any sort of time series on the various elements of the financing process, the original sources will have to be painstakingly pulled together.

What about forecasting of the impact of the projected deficits on domestic credit markets? One category, the net source base, is close to the monetary base concept which is of major concern to this committee. We can project our desired growth of this aggregate, or we can project our best guess estimate of what actually will occur, given the existing management techniques for monetary policy. A second category which seems to warrant some consideration from the perspective of economic theory is the foreign transaction category, V. I think that this grouping comes pretty close to the concept which is referred to as the balance of payments in the literature on the monetary theory of the balance of payments, though not being an expert in that area, I may be mistaken. In any case I would like some discussion of how forecasts of this component could be developed.

The remaining items of the identity have large random behavior about which there is very little that economic theory can tell us. It seems to me that these are things for which a pure time series approach to forecasting, such as that of Box-Jenkins is not only highly useful, but also highly appropriate.

II. Some Issues in Recent Government Financing

With the exception of the transition quarter, a common characteristic of the last several years has been the fact that the government has had to go to the private capital markets for considerably less than the total financing which it has required. In part this is due to the rapid growth of the monetary base with which we are all familiar. An additional factor which has made an important contribution is the item which I have entitled changes in Foreign Transaction Balances. In particular, over the last four quarters tabulated in Table 1, over six billion dollars of the deficit has been financed by increases in this item. For the most part this reflects increases in Foreign Official holdings of U.S. Government securities. In the two prior fiscal years, foreign official holdings of U.S. Government securities increased by four billion dollars. Thus, the recent rate of increase reflects a doubling of the rate of acquisition. I suspect that these may reflect changes in holding by the Germans and Japanese for the most part, but I have to confess that I have not tracked things down, and I shall defer to other expertise in this area. The one thing which seems clear is that there is considerable management of the float going on, and if anything it has increased substantially in recent months.

What impact on the private capital markets can be expected in the coming fiscal year? The present official projections of the fiscal 1978 budget deficit are in the neighborhood of 60 billion dollars. In addition, something has to be added for off budget agencies. The major contributors to the off budget deficit are the postal service and the Federal Financing Bank. In the recent past, the deficit in this category has been reduced somewhat because of unexpectedly favorable experience on the part of the postal service. Judging from recent pronouncements, and the political opposition to cost cutting innovations such as the abolition of Saturday delivery and the consolidation of rural postal facilities, the recent experience cannot be extrapolated into the future. Therefore, it is likely that something of the order of 10 billion should be added for required off budget financing. If we scale down the official budget deficit estimates somewhat to account for the positive serial correlation of the OMB forecasting errors in the recent past (the so called budget underruns), then it seems appropriate to conclude that something approaching, but probably not exceeding 70 billion dollars of financing will be required over the next fiscal year.

The net source base amounted to about 120.6 billion dollars (seasonally unadjusted) at the end of June, 1977. If we assume a growth rate of the order of six percent per annum for the next fifteen months (on the assumption that this is a likely outcome, not a desirable outcome), about seven billion would be financed by increases in the base (given growth in the money stock over the last two months, this might be regarded as

too high for a likely outcome, although care should be taken to distinguish growth in the monetary base in the last few weeks because of increases in borrowing which does not count in the net source base). If we assume that changes in foreign transaction balance increase at somewhere between the four billion annual rate of 75-76, and the eight billion rate of recent months, and further assume that the net impact of the remaining components is of the order of one billion dollars one way or the other, then the total borrowings which will be required in the private capital markets can be projected at somewhere around 55 to 60 billion dollars.

APPENDIX

DERIVATION OF THE U.S. GOVERNMENT

FINANCING IDENTITY

The basic identity and data for the financing requirement are found in the Monthly Treasury Statement of Receipts and Expenditures, and in the Federal Reserve Bulletin.¹ The first relationship is found in a table entitled "Means of Financing." This equation indicates that the

	Unified Budget Deficit(+) or Surplus (-)
plus	Transactions not applied to the current year's deficit or surplus
equals	Changes in U.S. Government and Agency Securities held by the Public (net of securities held as investments by government accounts)
plus	Change in accrued interest payable on public debt securities
plus	Changes in deposit funds
plus	Changes in miscellaneous liability accounts of the Treasury

¹ Other helpful, though not necessarily complete or accurate tables can be found in the monthly Treasury Bulletin. Additional sources of information of a fiscal year basis are the Annual Report of the Secretary of the Treasury and the Combined Statement of Receipts, Expenditures and Balances of the United States Government. The latter is the most comprehensive, informative, and probably the most accurate.

- less Changes in U.S. Treasury Operating Cash (including
 balances held at Federal Reserve Banks + Tax and Loan
 account balances + demand balances held at other
 depositories)
- less Changes in total holdings of SDR's net of changes in
 SDR certificates issued to Federal Reserve Banks
- less Changes in gold tranche drawing rights
- less Changes in other cash and monetary assets
- less Changes in miscellaneous asset accounts of the Treasury

The second identity is the balance sheet of the Federal Reserve System found in the Consolidated Condition Statement. This identity can be solved for the Treasury Balances with the Federal Reserve System and substituted into the Means of Financing identity. Two additional identities are useful:

- (1) Gold Stock = Gold Certificates held by Federal Reserve
 Banks + Balance of Gold
- (2) Treasury Cash = Federal Reserve Notes held in the Treasury
 + Treasury currency held in the Treasury.

Finally the definition of Transactions not applied to current year's deficit or surplus is required. This is perhaps the most elusive component of the whole problem; as far as I can discover, the only place where the data are regularly published is in the Monthly Treasury Statement. This aggregate consists of:

- Deficit(+) or Surplus(-) of Off Budget Agencies (including
the Federal Financing Bank in recent years)
- plus Seigniorage
- plus Increment on gold

- plus Net gain/loss from U.S. currency valuation adjustment
- plus Net gain/loss from IMF loan valuation adjustment (starting fiscal 77)
- plus Change in interest receipts on government accounts to accrual.

Manipulation of these identities gives the nine categories listed in Table 1, where the components of each category are as follows:

- I. Borrowing from Private Capital Markets
 - Ia. (+) Borrowing From the Public
 - Ib. (-) Changes in Federal Reserve Holdings of U.S. Government Securities
 - Ic. (-) Changes in Federal Reserve Holdings of Agency Issues
 - Id. (-) Changes in U.S. Government Securities Held by Foreign Official Institutions (from Table 3.13, Federal Reserve Bulletin. Foreign official holdings of agency issues are not published separately)
- II. Change in Net Source Base
 - IIa. (+) Change in Member Bank Deposits at Federal Reserve Banks
 - IIb. (+) Change in Currency in Circulation
 - IIc. (-) Change in Member Bank Borrowings From the Federal Reserve
- III. Change in Federal Reserve Float
 - IIIa. (+) Change in Deferred Availability Cash Items
 - IIIb. (-) Change in Cash Items in Process of Collection
- IV. Change in U.S. Treasury Cash Balances
 - IVa. (+) Change in Tax and Loan Account Balances
 - IVb. (+) Change in Balances at Other Depositories (demand)
- V. Change in Foreign Transaction Balances
 - Va. (+) Change in Foreign Deposits at the Federal Reserve System
 - Vb. (-) Change in Other Federal Reserve Assets Denominated in Foreign Currencies (swaps)
 - Vc. (+) Change in U.S. Government Securities Held by Foreign Official Institutions
 - Vd. (-) Change in the U.S. Gold Stock
 - Ve. (-) Change in SDR Holdings
 - Vf. (-) Change in Gold Tranche Drawing Rights
 - Vg. (-) Change in Loans to I.M.F. (fiscal 1977 only)

- VI. Change in Interest Accruals
 - VIa. (+) Change in Accrued Interest Payable on U.S. Government Securities
 - VIb. (-) Conversion of Interest Receipts on Government Accounts to Accrual
- VII. Change in Excess of Miscellaneous F.R. Liabilities Over Misc. Assets
 - VIIa. (+) Change in Other Deposits at Federal Reserve Banks
 - VIIb. (+) Change in Other Liabilities of Federal Reserve
 - VIIc. (+) Change in Federal Reserve Capital Accounts
 - VIIId. (-) Change in Other Federal Reserve Loans
 - VIIe. (-) Change in Acceptances Held by Federal Reserve Banks
 - VIIIf. (-) Change in Bank Premises and Operating Equipment
 - VIIg. (-) Change in Other Federal Reserve Assets (excluding those denominated in foreign currencies (swaps))
- VIII. Change in Miscellaneous Treasury Accounts
 - VIIIa. (+) Change in Treasury Cash
 - VIIIb. (+) Change in Balance of Gold
 - VIIIc. (+) Change in Misc. Treasury Liability Accounts
 - VIIId. (-) Change in Other Cash and Monetary Assets of the Treasury
 - VIIIe. (-) Change in Misc. Treasury Asset Accounts
 - VIIIIf. (-) Seigniorage
 - VIIIg. (-) Increment on Gold
 - VIIIh. (-) Net Gain or Loss From U.S. Currency Valuation Adjustment
 - VIIIi. (-) Net Gain or Loss From IMF Loan Valuation Adjustment
 - VIIIj. (-) Change in Treasury Currency Outstanding
- IX. Change in Deposit Funds
 - IXa. (+) Change in Allocations of SDR's
 - IXb. (+) Change in Other Deposit Fund Balances

TABLE I

FISCAL YEARS

		1974	1975	1976	TQ 1976	76 IV	77 I	77 II
1	UNIFIED BUDGET DEFICIT (+) OR SURPLUS	3960	43604	65605	12700	22785	18692	-8620
2	OFF BUDGET AGENCY DEFICIT (+) OR SURPLUS	2675	9546	3016	2005	-415	4269	-106
3								
4	TOTAL FINANCING REQUIRED	6135	53150	73621	14705	22370	22961	-8726
5								
6	SOURCES OF FINANCING							
7								
8	I (+) BORROWING FROM PRIVATE CAPITAL MARKETS	-2146	40422	67069	14813	15014	16493	-11269
9								
10	II (+) CHANGES IN NET SOURCES BASE	9890	5897	9413	-577	3403	2076	-305
11								
12	III (+) CHANGES IN F.R. FLOAT	-249	506	-1786	580	390	-685	48
13								
14	IV (+) CHANGES IN U.S. TREASURY CASH	-2293	-4424	1045	1258	-2342	597	-844
15								
16	V (+) CHANGES IN FOREIGN TRANSACTION BALANCES	-3863	2805	2646	851	1325	2164	2475
17								
18	VI (+) CHANGES IN INTEREST ACCRUALS	46	349	915	144	1207	-647	477
19								
20	VII (+) CHANGES IN MISC. F.R. ACCTS.	214	-2202	-85	433	178	645	-133
21								
22	VIII (+) CHANGES IN MISC. TREASURY ACCTS	-35	319	-1884	-319	-2642	3512	-557
23								
24	IX (+) CHANGE IN DEPOSIT FUNDS	-17	579	-1024	34	657	-33	-262
25								
26								

a) PRELIMINARY - BASED ON TWO MONTHS DATA ON FOREIGN OFFICIAL DEBT HOLDINGS.