Some Illustrative Analytical Uses of Flow-of-Funds Data

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Summary

SECTION 1 offers a tentative consumer capital outlay function in which the independent variables are the "current surplus" of the flow-of-funds (FOF) consumer sector, federal national defense expenditures, time, and the increment in total bank credit other than that extended to the federal government. Section III offers a capital outlay function for state and local governments in which the independent variables are the current surplus of state and local governments and the ratio of federal national defense expenditures to total GNP.

Section IV takes changes in the ratio of United States obligations and securities to all other earning assets of the FOF banking sector as an indication of changes in the banking sector's liquidity preference in three recent business cycles. A nine-stage pattern—a modified Burns-Mitchell type pattern—is presented.

Section II uses FOF data to answer two broad questions: "What were the federal government's sources and uses of funds during World War II?" and "What part in the financing of the war was played directly by consumers, by businesses, and by other nonbank sectors and what part did they play indirectly through the funds they advanced to the banking sector?" The analysis illustrates the proposition that the nonfinancial surpluses of all nonfederal sectors taken together were just large enough to advance exactly the amount of funds through financial channels needed by the federal government to finance the war. The analysis also illustrates the proposition that the banking sector is a financial intermediary, not itself an important source of the funds that finance aggregate demand.

Section V compares annual rates for various financial sources and uses of funds of nonbank sectors during the 1949–53 cyclical upswing, the 1953–54 downswing, and the 1954–57 upswing. Businesses increased their cash balances and their other financial assets during

both upswings and decreased them during the downswing. Both businesses and consumers had markedly larger borrowing rates during the upswings than during the downswing. The following more detailed types of financial flows of funds showed definite cyclical patterns: consumer credit advanced by businesses, by the banking sector (which in this comparison excludes mutual savings banks), and by other financial institutions; trade credit advanced by business corporations; trade-credit funds obtained by business corporations; net trade-credit funds obtained by noncorporate businesses; home mortgage funds advanced by the federal government and by the banking sector. Section V also gives a quarterly picture of the ratio of the increment in consumer credit to consumer expenditures on goods. The ratio declines from $+26$ per cent in the first quarter of 1953 to -3 per cent in the first quarter of 1954. The subsequent rise presumably helped to start the cyclical upswing.

The FOF accounts help to dispel various misconceptions in regard to the role of money and of other forms of credit in the income and money circuit. Among these misconceptions are such ideas as that: (1) it is safe to assume that private nonbank cash balances are mostly consumer cash balances; (2) the banking sector is more than a mere financial intermediary, that by itself it can "create" a substantial amount of "money" that can be used to finance a substantial increase in aggregate demand; (3) a government deficit in a particular year or other period can be considered inflationary without stopping to consider whether it represents a fiscal change from the preceding period that tends to increase aggregate demand or whether it occurs at a time when the economy is operating at or near or far below full capacity; and (4) when the government seeks to raise a large amount of money through financial channels to finance a war, one can ignore the fact that an excess of nonfinancial uses over nonfinancial sources of funds for the government means an equal excess of non-financial sources over nonfinancial uses of funds for the rest of the economy and a consequent equal amount of money that the rest of the economy will necessarily advance to the government through financial channels.

Introduction

The national income and product accounts give us an extremely useful picture of our economy. Much of the usefulness can be attributed to the fact that they show separately the way each of several different sectors, i.e. several different groups of transactors, behave, and so enable us to trace the impacts of each sector's behavior on other

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sectors. The FOF accounts provide both technical improvements in this picture and a major supplement to it. The sectoring is more detailed; each domestic sector consists of transactors that are whole decision-making units, e.g. households, businesses, governments, etc.; and details of financial transactions as well as nonfinancial transactions are included.

It is not easy for us today to imagine what it must have been like to try to understand the workings of our economy in the absence of social accounting information. The workings of those aspects that involve financial transactions seem to have been particularly difficult to understand. Indeed, I think we can say that in the absence of financial transaction social accounting information various mis-understandings were permitted to develop. Let me mention three:

1. One of these relates to the role of trade credit in the business cycle. This is a subject that probably received somewhat less attention than it deserved fifty-odd years ago, but it seems to have greatly intrigued H. J. Davenport, and he came up with this curious con-clusion about the contraction of credit during a commercial crisis—"Side by side with the diminution of bank credit there is taking place an enforced and inevitable expansion of credit relations between producers and consumers, producers and middle-men, and between middle-men and consumers."[1]

2. During World War I Secretary of the Treasury W. G. McAdoo, among others, was greatly concerned about the possibility that the huge wartime increase in the demand for funds would drive interest rates sharply up. As a matter of fact, interest rates did rise but by no means as sharply as McAdoo had anticipated. Railroad bond yields rose from 4.12 per cent in April 1917 to 4.42 per cent in November 1918.[2] During World War II the yields on long-term United States bonds actually declined.[3]

3. There is a view still entertained by quite a number of economists that an increment in the currency and deposit liabilities of the banking and monetary system creates a net addition to the total sources of funds available to finance purchases of GNP and so, a net addition to aggregate demand.[4]

[1] *Economics of Enterprise*, p. 292.
[2] *Historical Statistics of the United States, 1789–1945*, Dept. of Commerce, 1949, Series App. 29.
[3] *Historical Statistics*, Series N 203.
[4] The following passages appear to be illustrations of this view:

"Generally speaking, if expenditures are financed by the banking system, i.e., by the creation of money, total incomes will rise by a greater amount than if expenditures were financed by borrowing or by taxation since the new money represents a net addition to total income payments" (J. Brooke Willis, *Papers and Proceedings, American Economic Review*, May 1947, p. 227).

We think Davenport's idea about trade credit and McAdoo's idea about the pressure exerted by wartime government financing on the money market and the view that "money creation creates new purchasing power" all involve misunderstandings about the way our economy operates and that the information in the flow-of-funds accounts helps to straighten out these misunderstandings. We hope to make clear why in the discussion of illustrative uses of these accounts that follows.

I. A Tentative Consumer Capital Outlay Function

One of the criticisms that has been directed against the national income and product conception of personal income is that not all of it is received by persons. And one of the objectives in the design of the FOF accounts was to meet this criticism. The FOF consumer sector is about as clean-cut a families-and-single-individuals sector as it is feasible to provide figures for.[5]

Revisions in the Department of Commerce estimates of personal income and personal consumption expenditures have resulted in significant revisions of the best-fit parameters of various analytical forms of the consumption function. It is natural, therefore, to wonder whether figures that refer to a purely personal sector would give a more satisfactory consumption function.

But the cleaner nature of the sectoring is not the only reason for wondering about this. A number of economists have suggested that financial variables such as consumer holdings of cash balances and other liquid assets and consumer debts should be included in the consumption function. The FOF accounts provide measures of these financial variables, and the period for which they are available is beginning to be long enough to make some exploration of the nature and importance of their influences on consumption expenditures worthwhile.

Incidentally, the fact that the FOF accounts give sector figures on cash balances should help to dispel a misconception in regard to the

"... common sense proclaims (even to the simple-minded) ... the power possessed by the public and by the monetary authority to alter the rates of income flow—the former by putting money into and out of store, the latter by putting it into and out of existence" (D. H. Robertson, "Saving and Hoarding," *Economic Journal*, September 1933, p. 411).

"Investment can be greater than saving because money may be spent out of other sources than disposable income. Expenditures may be made from newly created bank money or from hoards" (Gottfried Haberler, "National Income, Savings, and Investment," *Studies in Income and Wealth*, Volume 2, National Bureau of Economic Research, 1938, p. 160).

[5] It does include estates and other personal trusts.

income and money circuit that has characterized quite a bit of monetary theorizing. I did not mention this misconception in my opening comments, because it is more nearly an error of omission than of commission. But, despite the rather negative nature of this misconception, it is possible to cite a widely quoted article that illustrates it, Fritz Machlup's "Period Analysis and Multiplier Theory."[6] If one may judge from his repeated references to the receipts of persons and to the cash balances of individuals and from his concern to infer from what he calls "income period E" (number 5) the length of time it takes for the multiplier effect to work itself out, then according to his conception of the income and money circuit, cash balances reflect mainly the decisions of families and individuals. Alfred Marshall's *Money Credit and Commerce*[7] also gives a good deal of emphasis to "the inhabitants of a country" as holders of cash balances, and treats the cash balances of other (nonbank, non-central-government) transactors as relatively small. But the figures in Table 1 make clear the importance of the cash balances of nonindividual, nonbank, nonfederal transactors in recent years in the United States.

In view of what has been said above about the consumption function, I should perhaps have attempted to fit a formula using FOF data. But the area of consumer transactions one might expect to be most affected by the cleaner sectoring is that of capital outlays, and this type of nonfinancial expenditure as it appears in the flow-of-funds accounts includes owner-occupant purchases of homes as well as purchases of consumer durables. The consumer expenditure item for which I have attempted to find a formula then is purchases of durables and homes—gross purchases (including the cost of land) minus receipts from sales of homes and used cars and other durables. Thus, the formula is a function for a large segment of consumer expenditures, but some economists may prefer to regard it as a consumer investment function rather than a subconsumption function.

[6] Reprinted in *Readings in Business Cycle Theory*, ed. Gottfried Haberler, Blakiston Series of Republished Articles on Economics, Vol. II, Philadelphia, 1944. Machlup distinguishes three different transaction periods, noting that "for some persons" transaction periods are determined primarily by "fixed dates of heavy expenditures or, more correctly, by the intervals between these dates," while "for other persons" transaction periods are determined by "fixed intervals between the dates on which they receive the largest payments." In explaining each of his three transaction periods Machlup discusses the ebb and flow in the "balances of the individual cash holder. . . . For persons whose receipts constitute their net income" Machlup also distinguishes five different income periods. Each of the first three is the length of a cycle of ebb and flow in "the cash balances of the individual income recipient." Neither of the other two income periods is "meaningful with respect to individual accounts" because it relates only to the whole economy or to a whole region. Number 4 is the income turnover period of the total of all cash balances; number 5 that of all active balances.

[7] London, 1923, pp. 43–45 (I, iv, 3–4).

TABLE 1

CURRENCY AND DEMAND DEPOSITS HELD BY U.S. NONBANK SECTORS ON
DECEMBER 31, 1929, 1949, AND 1957
(billions of dollars)

	Dec. 31, 1929[a]	Dec. 31, 1949[b]	Dec. 31, 1957[b]
A. Consumers	(11.1)	42.6	46.9
B. Farms and other noncorporate businesses	(1.9)	18.5	20.7
C. Federal government	(0.2)	5.2	5.2
D. Rest of the world	(?)	4.8	4.7
E. All other nonbank sectors[c]	(16.2)	39.9	55.1
F. All nonbank sectors	(29.4)	111.0	132.6

[a] Solomon Shapiro, "The Distribution of Deposits and Currency in the U.S., 1929–1939," *Journal of the American Statistical Association*, December 1943, pp. 441 and 443. The transactor groupings are not entirely comparable with those of the FOF accounts. Farms and certain other noncorporate enterprises as well as nonprofit institutions are apparently included in line A.
[b] Mimeographed Federal Reserve Board FOF release dated June 1958.
[c] Corporate businesses, state and local governments, and private nonbank financial institutions. Does not include balances held by mutual savings banks, which have recently been moved from the banking sector to a savings institutions sector.

Because the period covered by the FOF accounts is relatively short, I have included the war years in fitting my tentative capital outlay function. It seems better as a matter of principle anyway to include all years for which data are available, rather than to exclude years that are for some reason classed as abnormal—at least it seems better provided a variable can be found to portray the "abnormality." In the present instance the abnormality is wartime limitations on the availability of goods, and the hypothesis embodied in my capital outlay function uses for this purpose national defense expenditures, or more precisely national defense expenditures plus a linear function of time.

The most important determinant of consumer capital outlay was taken to be what the Federal Reserve Board calls the "current surplus" in the FOF account of consumer nonfinancial transactions. This reports the funds that are available either to finance capital outlays or acquisitions of financial assets, or to use in retiring consumer debts. I have assumed that the current surplus is used mainly for capital outlays and that the rest of it—the net financial use of funds by consumers—can be treated as a linear function of time.

Occasionally, total consumer capital outlays have exceeded the current surplus. Presumably, if we could delve below the aggregative level, we would find in every year some consumers whose capital outlays exceeded their current surpluses. In view of this presumption,

it has seemed wise to take account of availability of credit as a third kind of influence on the capital outlays. Credit availability is an elusive kind of thing to measure, but I think it is reasonable to suppose that the extent to which banks are making loans can be taken as an indicator of such availability. Accordingly, one of the independent variables in the consumer capital outlay function is the increment in total bank credit except that part of it extended to the federal government. As in the case of the other independent variables, national defense expenditures and time, the influence of the increment in bank credit has been assumed to be linear.

The form of the capital outlay function, then, is capital outlay = current surplus plus b_1 times national defense expenditures + b_2 times increment in bank credit + b_3 times $(t - 1939)$ times $1 billion + k times $1 billion. The parameters were determined by fitting the formula to the data for the nineteen years 1939–57.

$$b_1 = -.321 \qquad b_2 = .227 \qquad b_3 = .925 \qquad k = -4.07$$

Chart 1 compares actual and predicted outlay.[8] Considering the fact that the war years were included in the fit, it compares reasonably well with the fits considered by Ferber.[9] $r^2 = .963$.[10]

It should probably be noted that the expression $[.925(t - 1939) - 4.07]$ billion reflects the net result of two different types of influence that are not separately identified. In part, it takes account of the fact that $40 billion of national defense expenditures per year exerted a somewhat more restrictive influence on the availability of goods during the Second World War than they did in the mid-fifties. And, in part, it makes provision in the capital outlay function for a change between the war and postwar years in the disposition of consumers to spend the current surplus on homes and durables or to save it. Perhaps it should be added that because the expression is a linear function of time, my tentative capital outlay function can hardly be expected to be a very good one for purposes of extrapolation.

II. How World War II Was Financed

Even before the FOF accounts were developed we had in outline form an answer to the question "How was World War II financed?" On the basis of the national income and product accounts one could, with some netting in the nonfinancial account, determine annual

[8] For the figures on the current surplus, the increment in bank credit, national defense expenditures, and actual and predicted capital outlay see Table A-1.
[9] Robert Ferber, *A Study of Aggregate Consumption Functions*, Technical Paper 8, National Bureau of Economic Research, 1953.
[10] This is the correlation between predicted and actual outlay without any adjustment.

CHART 1

Consumers' Capital Outlays, 1939–57

Billions of dollars
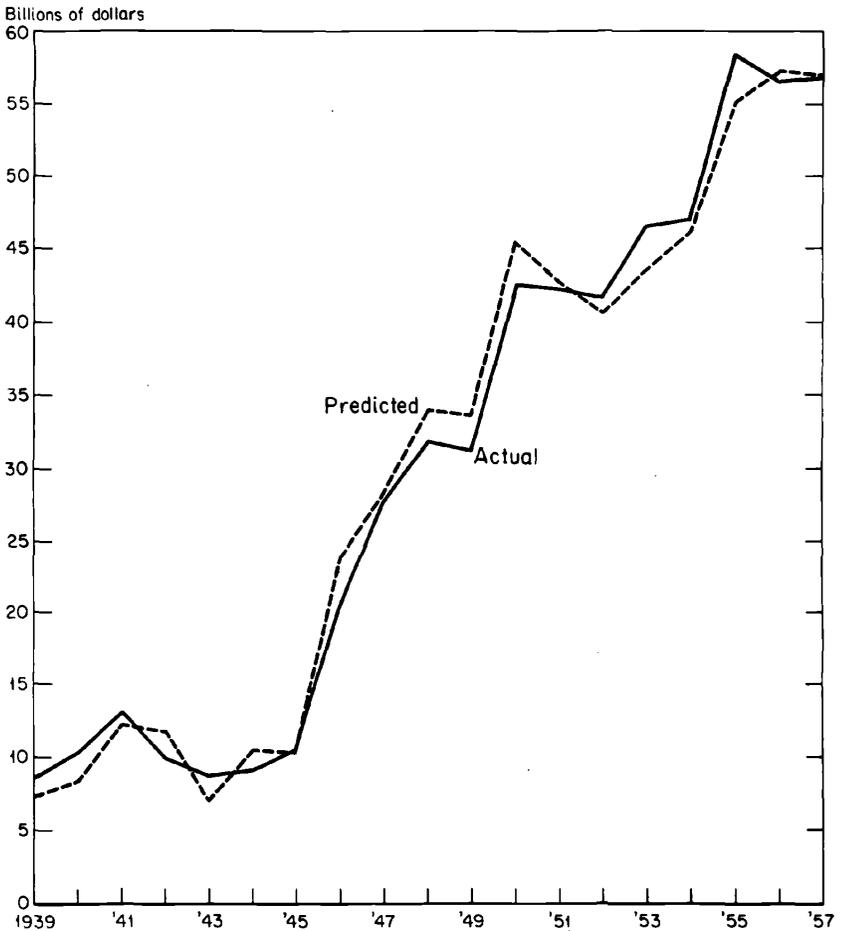
Source: See Table A–1.

figures for federal nonfinancial receipts and expenditures and the resulting surplus or deficit. One could also determine, with somewhat more netting, annual figures on nonfinancial receipts, nonfinancial expenditures, and the resulting surplus or deficit for the other sectors of the economy combined. Such figures are given in Table 2 for 1939 and 1940–45.[11] The deficit in the federal nonfinancial transactions

[11] This table nets tax and interest receipts against transfer payments, grants-in-aid to state and local governments, and interest payments, because there is no need for the purpose in hand to show these debits and credits separately. They could, of course, be shown separately, if that were desirable.

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TABLE 2

How World War II Was Financed—A Summary Statement[a] Based on the
National Income and Product Account, 1939 and 1940–45
(billions of dollars)

	The Year 1939	Total 1940–45
Federal government		
A. GNP expenditures	5.2	320.2
B. Proceeds received from final sales[b]	4.6	102.2
C. Lines A minus B	0.6	218.0
D. Personal taxes minus transfer payments, grants, and net interest	−1.6	34.6
E. NI and P deficit	2.2	183.4
F. Lines D plus E	0.6	218.0
All other sectors combined		
G. GNP expenditures	85.9	682.9
H. Proceeds received from final sales[c]	85.3	895.0
J. Lines H minus G	−0.6	212.1
K. Personal taxes minus transfer payments, grants, and net interest	−1.6	34.6
L. Net funds advanced to federal government[d]	1.1	177.5
M. Lines K plus L	−0.5	212.1

[a] This table is based on *National Income Supplement*, 1954, *Survey of Current Business*, Dept. of Commerce, Tables 2, 4, 5, 8, and 9.

[b] Corporate profits tax liability plus indirect business tax and nontax liability plus contributions for social insurance less subsidies minus current surplus of government enterprises.

[c] Total charges against gross national product other than the statistical discrepancy minus line B, above.

[d] Gross private saving plus state and local government surplus on income and product transactions minus gross investment.

account (federal national income and product account) for the six years ending 1945 was $183.4 billion. The other economic sectors taken together had a nonfinancial surplus (surplus on account of national income and product transactions) of $177.5 billion. Were it not for the statistical discrepancy, the federal deficit and the consolidated net surplus of the other economic sectors would have been precisely equal. Thus, what the federal government needed to borrow to finance the war was just matched by what the other sectors had to lend.

But, of course, the national income and product accounts do not tell us who bought the federal government bonds issued to finance the war, or what part the banking and monetary system played in financing it. For questions such as these we must turn to the FOF

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accounts. Tables 3 and 4 present a summary FOF picture of the way the United States financed the war; Table 3, the funds-raised side of the picture; and Table 4, the funds-advanced side.

TABLE 3

FEDERAL GOVERNMENT SOURCES AND USES OF FUNDS, 1939–46[a]
(billions of dollars)

	1939	1940–45 (av. per yr.)	1946
Sources			
A. Total nonfinancial sources (chiefly taxes and enterprise revenues)	7.5	34.7	54.6
B. Increase in outstanding federal obligations[b]	2.1	35.3	−22.5
C. Increase in trade debt and miscellaneous liabilities[c]	0.0	1.0	−3.2
D. Total	9.6	71.0	28.8
Uses			
E. National security GNP expenditures[d]	1.2	52.4	16.7
F. Other GNP expenditures[e]	3.9	2.3	2.7
G. Grants, donations, and insurance benefits	2.9	4.0	12.6
H. Interest plus tax refunds	1.1	2.6	7.1
J. Enterprise payrolls and current purchases[f]	1.3	5.6	10.5
K. Increase in cash on hand	−0.7	4.2	−22.8
L. Increase in other financial assets	0.0	0.0	2.0
M. Total	9.6	71.0	28.8

[a] Figures are from FOF Table 17 except as noted below.
[b] Excludes obligations held by the federal government sector.
[c] Miscellaneous liabilities are mainly trust and deposit liabilities.
[d] Total GNP expenditures (FOF Table 87) minus line F.
[e] *National Income Supplement, 1954, Survey of Current Business*, Table 2.
[f] Total payroll, plus rents plus other goods and services (FOF Table 17) minus line E minus line F.

Table 3 shows federal government sources and uses of funds in the last prewar-and-war-preparation year and the first postwar year and annual averages for the six years, 1940–45. National security expenditures averaged some $50 billion higher for the six years than in 1939. The FOF government account, unlike the government account in the national income system, includes enterprise payrolls and purchases. These rose sharply during the war. However, they did not add significantly to the financing problem. Enterprise revenues rose also. Other nonfinancial expenditures were not far from the prewar level. It was mainly the increase in national security expenditures that

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TABLE 4

OTHER SECTORS, SOURCES AND USES OF FUNDS, SIX-YEAR TOTALS, 1940–45[a]
(billions of dollars)

Sector	Increase in Federal Obligations Held (1)	Nature of Item in Col. 3 (2)	Source as in Col. 2 (3)	Increase in Liabilities (4)	(3) + (4) − (1)[b] (5)
A. Consumers	46.4	Net disposable nonfinancial sources of funds[c]	661.1	2.7	617.4
B. Businesses	28.1	Current surplus[d]	120.1	3.8	95.8
C. Banking	105.9	Ditto	6.7	112.8[e]	13.6
D. Other (excl. federal govt.)	31.6	Total nonfinancial sources of funds	219.1	4.4	191.9
E. Total above	212.0		1,007.0	123.7	918.7

	GNP Expenditures (6)	Nonfinancial Uses n.e.c. (7)	Increase in Cash on Hand (8)	Increase in Other Financial Assets (9)	(6) + (7) + (8) + (9) (10)[b]
F. Consumers	510.7	59.5	50.5	1.2	621.9
G. Businesses	75.0	0.0	27.7	6.6	109.3
H. Banking	2.1	0.0		10.8	12.9
J. Other (excl. federal govt.)	63.7	117.5	5.4	3.7	190.3
K. Total above	651.5	177.0	83.6	22.3[f]	934.4

[a] Figures are from the following FOF tables: Table 1 (consumers); Tables 11, 13, and 15 (businesses); Table 31 (banking); and Tables 23, 38, 42, and 46 (other sectors except the federal government).

[b] The differences between columns 5 and 10 reflect valuation adjustments and discrepancies in the flow-of-funds accounts.

[c] Total nonfinancial sources minus sales receipts and taxes.

[d] Total nonfinancial sources minus nonfinancial uses other than GNP expenditures. For corporations, a major component of current surplus is retained income plus depreciation and depletion charges.

[e] $112.5 billion of this amount represents the increase in currency and deposit liabilities; and $25 billion, the increase in currency and deposit liabilities to the federal government.

[f] Including a $6 billion increase in net accounts receivable from and miscellaneous deposit, etc., claims on the federal government.

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required financing. To finance them the federal obligations held by other sectors of the economy were increased from $43 billion at the end of 1939 to $255 billion at the end of 1945, a net increase of $212 billion. Not quite all of this increase was needed to finance national security expenditures; $25 billion was added to the federal cash balance.

The really interesting side of the picture is the funds-advanced side. I have greatly simplified this side by combining the three FOF business sectors into one; by combining the state and local government sector, the several financial sectors (other than the banking and monetary system), and the rest of the world into an all-other sector; and by combining various types of transactions. Column 1 shows for the resulting four broad sector groupings where the $212 billion borrowed by the federal government came from. The rest of the table shows for these four sector groupings a summary analysis of their other uses of funds and their sources of funds.

The two tables together bring out the over-all intersector balance of accounts. For the federal government, nonfinancial expenditures during the six-year war period exceeded nonfinancial receipts by $193 billion, and it made up the difference by net borrowing (lines B and C minus K and L). The other economic sectors together had a nonfinancial surplus that—except for statistical discrepancies—equaled the federal nonfinancial deficit, and the funds that they advanced net of the borrowing among themselves equaled net federal borrowing.[12] This balance is the analogue of that brought out by the national income and product accounts, but the addition of financial detail adds significantly to its meaning. In the national income and product accounts it tells us little more than the Keynesian $C + I = Y$, $S = Y - C$, hence $S = I$. The balance of the gross savings and investment account is just a corollary of the balance of the GNP accounts. But with the financial details added, it is clear that we are dealing with two separately articulating types of market adjustment: not only the adjustment in the nonfinancial markets, as a result of which aggregate demand equals aggregate proceeds (the GNP account), but also the adjustment in the financial markets between the demand for and the supply of loanable funds.

With the financial part of the income and money circuit thus made explicit in the FOF accounts, it becomes easy to see the point overlooked by McAdoo and others, and to see how, because they overlooked it, they were led to an unwarranted concern about the pressure on the loan and security markets of the greatly increased

[12] $212 billion plus the $6 billion included in column 9 minus the $25 billion increase in the federal cash balance.

wartime demand for funds. There is no question about the reality of the increase in demand. What was overlooked was that this increase was necessarily accompanied by a parallel one in the supply of funds.[13] The government's wartime nonfinancial deficit was responsible for the added demand for funds, but this deficit necessarily meant an equal nonfinancial surplus for all the other sectors of the economy taken together and, consequently, an equal increase in funds supplied.

Another important point Tables 3 and 4 together make clear is that, for the economy as a whole including the banking and monetary system, the $112.5 billion increase in the currency and deposit liabilities of the banking sector is not a source of any funds that finance an increase in aggregate demand. The six-year total of GNP expenditures was $980 billion. This total together with the $250 billion of other nonfinancial expenditures was financed—except for the statistical discrepancies involved—by the $1,215 billion of nonfinancial receipts. As has elsewhere been pointed out: "Any level of production . . . at any level of prices . . . will generate the incomes out of which it could be purchased."[14]

But no doubt it should be added that, when we look at the accounts of the several sectors of the economy separately, the $112.5 billion increase in currency and deposit liabilities of the banking sector played a very significant role. The banking sector lent the federal government approximately $106 billion. The currency and deposit increase provided the funds for this investment as well as the funds for most of the increase in the other financial assets of the sector. To the tune of $112.5 billion the banking and monetary system was thus a mere financial intermediary. However, this sector did have some $6.7 billion of inside funds of its own to invest, retained earnings, etc. (column 3).

We have considered two of the three misconceptions regarding the income and money circuit that I noted at the outset, as well as another one that I have characterized as more an error of omission than of commission. There is still another type of misconception that I hesitated to mention in my opening remarks because it is of a rather subtle nature. I would like to comment on it briefly at this point. Let me indicate its nature by quoting from George Leland Bach's *Economics: An Introduction to Analysis and Policy*:

> When private spending on consumption and investment falls short of high production and employment levels, the government

[13] Without this parallel increase in supply government security prices could not have been pegged as they were during either war.
[14] Committee for Economic Development, *Jobs and Markets*, New York, 1946, p. 12.

can increase total expenditures by spending more than it currently collects in taxes. At the extreme, it can finance this net addition by creating new money so as to assure a net addition to private spending. Or it can borrow existing funds from the public, hoping to draw on funds that would not otherwise be spent. . . .

Conversely, when total private spending is too high, with resulting inflation, the government can withdraw funds from the income stream by taxing away more than it spends. At the extreme, it may simply hold or destroy this net surplus. Or it may use the surplus to pay off government debt, hoping that the bondholders will not rush out and spend the funds they receive.[15]

This policy statement seems to imply three propositions that a good many economists have accepted, propositions the validity of which I want to question. The three propositions are:

1. A federal government nonfinancial deficit makes for an increase (or surplus makes for a decrease) in aggregate demand.

2. A federal government nonfinancial deficit financed by an increase (or a federal nonfinancial surplus resulting in a decrease) in currency outside banks plus demand deposits adjusted makes for a larger increase (or for a larger decrease) in aggregate demand than a deficit financed by the sale to the public of (or a surplus that is used to retire publicly held) interest-bearing federal obligations.[16]

3. In considering the effect of a federal deficit (or surplus) on aggregate demand we can afford to neglect the difference between a deficit brought about by an increase in government expenditures and one brought about by a decrease in government receipts (or between a surplus brought about by a decrease in government expenditures and one brought about by an increase in government receipts).

I have said the quoted policy statement implies these three propositions. Perhaps it would be better to say the policy statement implies

[15] Second ed., pp. 305–306.

[16] Elsewhere in a passage that somewhat parallels that cited here, Bach speaks of the alternatives of covering the deficit "by money creation (directly, through the Reserve banks or through the commercial banks)" or "by borrowing from the public" and of money being "destroyed (directly or through redeeming Reserve bank or commercial bank-held debt" versus "taxation to retire publicly-held debt") *Papers and Proceedings,* (*American Economic Review*, May 1947, pp. 237–238). Presumably he means by money creation and destruction increases and decreases in currency outside banks plus demand deposits adjusted. Presumably, also, financing a deficit by money creation means increasing the Treasury's net indebtedness to the banking and monetary system (i.e. Treasury currency outstanding plus federal obligations held by the banking and monetary system minus the federal cash balance while destroying money means decreasing such net indebtedness.

the first two and that those who accept Proposition 1 quite often do neglect the difference in effect between an increase in federal non-financial expenditures and a decrease in federal nonfinancial receipts (or a decrease in these expenditures and an increase in these receipts). Merely making Proposition 3 explicit is probably enough to make clear its questionable nature. But it should be noted that different kinds of nonfinancial receipts and expenditures need. to be distinguished, too. If we are talking about changes in aggregate demand, surely an increase in federal GNP expenditures is the most direct way to push toward an increase in total GNP.

Calling attention to the different ways a deficit (or surplus) may be brought about also suggests the nature of the amendment needed in Proposition 1. There is as much reason to think that our economy could get accustomed to a federal deficit if it were to be continued for some time as there is to think the economy could get used to a continuing export surplus. The nature of the effect of a federal deficit in a given period, like that of a deficit in the account of the rest of the world with the United States, depends on what has gone before. A billion-dollar deficit (or surplus) in a given year presumably has a greater effect when it represents a large increase in nonfinancial expenditures (or decrease in nonfinancial expenditures) than when it represents a small one.

Proposition 2 treats the banking and monetary system as a mere financial intermediary, for it assumes that increases and decreases in the net indebtedness of the federal government to the banking sector are equal to the increases and decreases in the sum of currency outside banks and demand deposits adjusted. This assumption is approximately correct. It is true, however, as I have already pointed out, that it is only an approximation—the banking sector does have, much of the time, a small amount of funds of its own (inside funds) to invest in federal obligations and other earning assets. But this is a minor matter. The main questions about Proposition 2 are (a) that it makes too sharp a contrast between the two methods of financing a federal deficit (or ways of using a federal surplus); and (b) that the words "money creation" and "destruction" suggest that the federal government and the Federal Reserve System acting in concert can manipulate the sum of currency outside banks plus demand deposits adjusted, so that the variations in this quantity can be used as a means of effectuating government credit policy in somewhat the same way that variations in the quantity of Federal Reserve credit can.[17] It seems unwise to assume such a possibility of manipulation

[17] This sort of thing seems to be suggested, too, in the passage from D. H. Robertson cited above.

or control of the quantity of currency outside banks plus demand deposits adjusted. We should, presumably, speak of influencing rather than controlling this quantity, recognizing that it is through manipulation of quantities like Federal Reserve credit and member bank reserve requirements that influence on the quantity of currency outside banks plus demand deposits adjusted is exerted. Furthermore, so far as Question (a) is concerned, it should be borne in mind that a federal nonfinancial deficit financed by an increase in the government debt to the banking sector may not stay financed in that way. If the banking sector holds marketable government obligations, businesses and individuals can elect to buy these obligations from the banking sector, drawing down their cash balances to pay for them. Also, the converse is possible if a federal deficit has been financed by selling marketable securities to the public.

III. A Tentative Capital Outlay Function for State and Local Governments

A great deal of effort has been devoted to experimenting with possible forms of the consumption function; relatively little, to experiments with possible functions for the nonfinancial expenditures of state and local governments.

When Keynes proposed his consumption function he had something to say about "the subjective needs and the psychological propensities and habits" of consumers. Although he did not use the language of the felicific calculus in discussing these "subjective factors" that help to determine "the amount of consumption out of a given income," I suggest that some of the appeal the consumption function has had results from the fact that it can readily be stated in this language. I suggest also that one reason why the idea of an expenditure function for state and local governments has not enjoyed a comparable appeal to economists who are on the lookout for models is that the needs, propensities, and habits of states and cities cannot readily be explained in felicific-calculus terms. Or rather—for they can be so explained if one is willing to postulate a group mind for each unit of government —one reason the idea a state and local expenditure function has not had a comparable appeal is that many economists would find a felicific-calculus account of government policies and actions obnoxious.

Presumably, the consumption function idea has proven moderately amenable to statistical investigation mainly because consumers are cyclically somewhat passive in the sense that they contribute significantly to the cumulative nature of cyclical upswings and downswings but seem not very important at the turning points. $C = chi$ of Y is a

behavioristic equation in the psychological, or Watsonian, meaning of "behavioristic" as well as in the econometric. No calculus of utility is implied. This equation ought to be judged solely in terms of goodness-of-fit criteria.

If one is looking for behavioristic equations, it would seem worthwhile to investigate the behavior of state and local governments. They are cyclically somewhat passive—contributors to the cumulative processes of expansion and contraction, not very important at the turning points. It should be possible to discover a pattern in their behavior that can be stated as an equation. By way of making this suggestion more concrete I offer a tentative function that relates the following variables:

1. State and local capital expenditures (net real estate purchases plus new-construction expenditures)
2. The state and local current surplus (total nonfinancial sources of funds minus capital expenditures)
3. Federal national defense expenditures
4. Total GNP

The formula assumed is: increment in capital expenditures $= b_1$ times increment in current surplus $+ b_2$ times increment in ratio of national defense expenditures to total GNP $+$ a constant, k. Fitting this equation to the data for 1940–57, I found $b_1 = .607$, $b_2 = -3.42$, $k = \$.317$ billion. When actual and predicted outlays are correlated $r^2 = .974$. The relationship is graphed in Chart 2.[18]

I propose this formula—and the consumer capital outlay function as well—not so much to demonstrate as to suggest the possibilities of the flow-of-funds accounts for such purposes. I should be very much gratified if my tentative state and local capital outlay function were to stimulate somebody to produce a better one.

IV. A Cycle in Liquidity Preference

In his chapter on the trade cycle, Keynes indicated that he thought "fluctuations . . . in the state of liquidity preference" should play a significant part in an explanation of the cycle. The flow-of-funds accounts provide information that—for one sector of the economy—throws an interesting light on the nature of that part in recent cycles.

Specifically, we can determine for the banking and monetary system as a whole the pattern of the cyclical variation of the composition of the portfolio of earning assets of this sector during the

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[18] See Table A-2 for the figures on actual and predicted state and local capital expenditures and state and local current surplus.

CHART 2

State and Local Government Capital Outlays, 1940–57

Billions of dollars
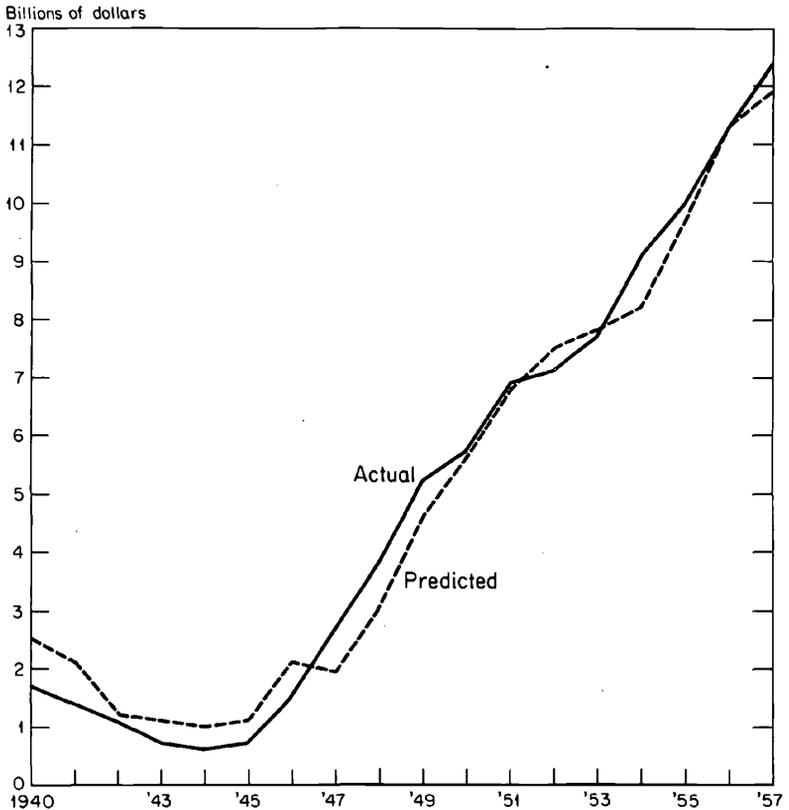
last three completed cycles. For the purpose in hand it is convenient
to use a modified form of the Burns-Mitchell nine-stage technique.
The modification has been adopted here partly because the pattern
it gives us is a particularly informative one and partly because it is
easier to calculate.[19] In this modified form absolute dollar magni-
tudes replace reference cycle relatives. In effect, we establish for each
stage of the cycle a typical average dollar level for each of the two
components of the total earning assets of the banking and monetary
system: (1) loans, net, and (2) United States government obligations

[19] This modified form was originally developed to deal with a kind of cyclical variation
for which the unmodified technique is not very suitable—a variation involving both plus
and minus values, as does the inventory increment component of GNP.

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and other securities. The cyclical pattern with which we are here concerned is that traced in the nine stages by the ratio of (2) to (1).[20]

In the General Theory, Keynes emphasized the choice between holding money and holding interest-bearing debt. But he made it clear that this was an oversimplification, that there are different degrees of liquidity and a complex of different rates of interest corresponding to these different degrees.[21] There was a period during the thirties when banks had extensive holdings of excess reserves, but the form of liquidity preference which led to this situation has not been very important in more recent years. The interesting question during the past three cycles, 1945–49, 1949–54, 1954–58, relates to the preference by the banking and monetary system for marketable federal government obligations and other securities and, alternatively, the willingness of this sector to hold loans advanced to private trans-actors. Does the nine-stage pattern of the ratio of United States and other securities—this item is mostly marketable United States obligations—to loans decrease from Stage I to Stage V and increase from Stage V to Stage IX? If so, does this mean liquidity preference varies perversely with the cycle?

For the three recent cycles Chart 3 gives the nine-stage pattern of the ratio. The solid line shows that this ratio declines from 2.31 in Stage I to 1.43 in Stage V, and remains relatively stable thereafter. This pattern reflects two types of variation, a variation with the cycle and a marked downward trend. In 1945—largely because of

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[20] Month-end figures on these two items appear each month in the *Federal Reserve Bulletin* in the table entitled "Consolidated Condition Statement for Banks and the Monetary System."

The computation of the average dollar level for each stage for each of the two components involved the following eight steps:

1. Eliminating the seasonal variation.
2. Dividing the series into reference cycles, and each cycle into the nine stages. (Since the data are month-end figures, two-month averages were used for Stages I, V, and IX.)
3. Computing the average of the seasonally adjusted figures for each cycle.
4. Computing the average of these cycle averages.
5. Computing step 4 minus step 3.
6. Computing the average of the seasonally adjusted figures for each stage in each cycle.
7. Adding to the result in each case the remainder for the cycle involved that is obtained under step 5 above so as to get stage averages for each stage in each cycle that are adjusted to the level of the over-all average for the three cycles.
8. Computing for each stage the average of the three-stage average figures that have been so adjusted.

For the following months figures were not available: September–November 1945; January–May 1946; July–November 1946; January–February 1947; and April–May 1947. The missing items were estimated by linear interpolation.

[21] See especially page 167.

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CHART 3

U.S. Banking Sector: Ratio of U.S. Obligations and Other Securities
to Net Loans, Reference Cycle Patterns, 1945–58

Average ratio for stage

1949-54 and
1954-58 cycles

3 postwar
cycles
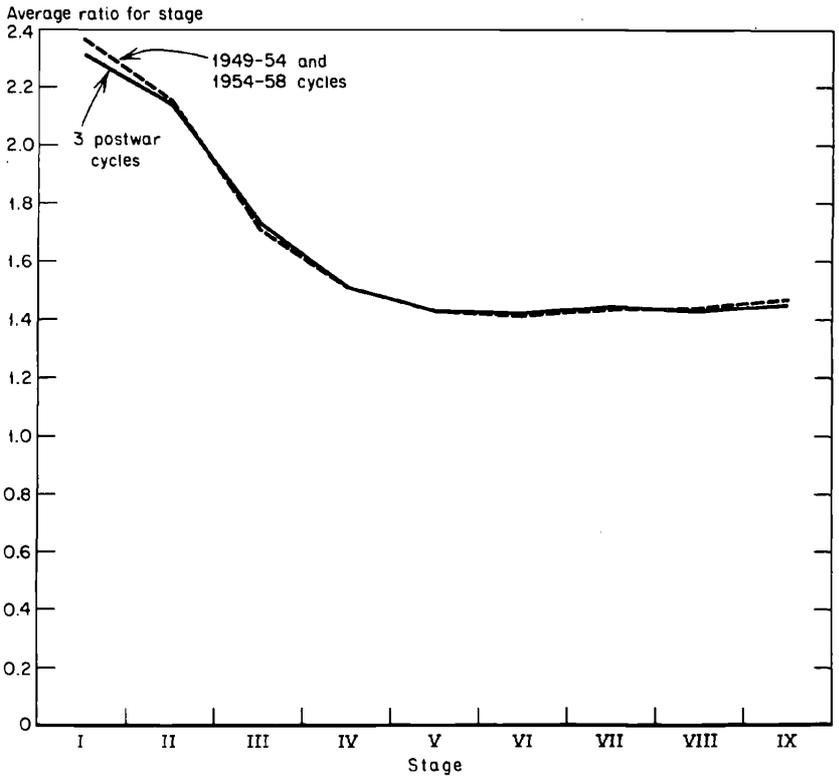
Stage

Source: See Table 5.

the extent to which the banking sector was involved in financing
government borrowing during the war—the ratio was very high. It
was 4.54 in Stage I of the 1945–49 cycle.[22] The downward trend may
fairly be characterized as a descent from this postwar peak, but the
descent has continued. In fact, the average for the 1949–54 and
1954–58 cycles is quite similar to the three-cycle pattern (see the
dash line in Chart 3).

The Burns-Mitchell technique does not attempt a separation of
cycle from trend. I can understand why it was felt unwise to attempt
to eliminate trend along with seasonal variation as an early step in

[22] This is the figure for Stage I before the level adjustment (step 7 in the procedure as
explained in note 20).

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the process of computing a cycle pattern. There is no way to determine a trend at this point in the computation without being thoroughly arbitrary about it. But as a final step it would seem to be not only very reasonable but also highly desirable to separate out the trend. Table 5 shows the cycle pattern with trend eliminated.[23] It seems

TABLE 5

U.S. BANKING SECTOR: RATIO OF U.S. OBLIGATIONS AND OTHER
SECURITIES TO NET LOANS, REFERENCE CYCLE PATTERNS, 1945–58

	Stage								
	I	II	III	IV	V	VI	VII	VIII	IX
Ratios based on figures adjusted to average level of the three cycles									
1945–49	2.20	2.11	1.75	1.52	1.43	1.43	1.44	1.40	1.40
1949–54	2.27	2.06	1.71	1.56	1.49	1.48	1.48	1.47	1.48
1954–58	2.46	2.25	1.71	1.46	1.37	1.35	1.39	1.41	1.46
Three-cycle average ratios	2.31	2.14	1.73	1.51	1.43	1.42	1.44	1.43	1.45
Three-cycle average ratios adjusted for trend	1.88	1.81	1.51	1.40	1.43	1.53	1.66	1.76	1.88

clear that the liquidity preference ratio with which we are here concerned has—for the three postwar cycles—a markedly perverse cyclical pattern.

It has been suggested that the Federal Reserve System has been able during the postwar period to make some reduction in the cyclical perversity of liquidity preference. Table 5 shows the adjusted stage averages for each cycle separately. The tables gives no reason to think the amplitude of the third cycle is less than that of either of the others, but the fact that there is no apparent improvement may be due in part to the greater severity of this cycle.

V. Cyclical Variations in Sector Financial Transactions, 1950–57

For 1952–57 we now have the FOF accounts on a quarterly basis; and, of course, we have annual data for the two preceding years. The period January 1, 1950 to June 30, 1953 includes nearly all of one cyclical upswing, the fiscal years 1955–57 practically all of another. The fiscal year 1954 approximately coincides with the 1953–54 contraction. We can, therefore, on the basis of the quarterly figures

[23] The adjustment for trend is a linear one.

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now available, make comparisons of the behavior of various sectors in the economy in the two upswings and the downswing.

A major reason for dealing with the FOF figures in terms of these three whole-cycle swings rather than on a more detailed quarterly basis is that there are marked seasonal variations in a number of the financial flows of funds. Table 6 gives a very general picture of

TABLE 6

CYCLICAL SWINGS IN CASH BALANCES, OTHER FINANCIAL ASSETS, AND
LIABILITIES OF CONSUMERS, BUSINESSES, FINANCIAL INSTITUTIONS,[a] 1949–57
(annual rates in billions of dollars)

INCREASES IN	1949–53 Upswing[b] Sources	Uses	1953–54 Downswing[c] Sources	Uses	1954–57 Upswing[d] Sources	Uses
Currency and demand deposits						
Consumers		0.8		0.1		−0.2
Business incl. farms		1.3		−0.1		0.9
Financial and nonprofit institutions[e]		0.7		0.6		0.6
Other financial assets						
Consumers		14.1		13.7		19.3
Business incl. farms		7.0		−1.9		7.2
Financial and nonprofit institutions[e]		12.8		17.4		19.3
Liabilities						
Consumers	10.8		9.4		16.0	
Business incl. farms	18.3		8.4		17.6	
Financial and nonprofit institutions[e]	11.0		11.5		14.4	

[a] This table is compiled from preliminary data in Federal Reserve memoranda on quarterly flow-of-funds accounts, dated January 7 and March 17, 1959.
[b] January 1, 1950 to June 30, 1953. Data for the fourth quarter of 1949 are not available. Computing the average annual rate for these fourteen quarters has the effect of eliminating six-sevenths of the seasonal variation.
[c] July 1, 1953 to June 30, 1954.
[d] July 1, 1954 to June 30, 1957.
[e] Mutual savings banks, savings and loan associations, credit unions, insurance companies, self-administered pension plans, financial enterprises n.e.c., and nonprofit organizations.

financial transactions during each of the three swings. Uses of funds, for additions to cash balances and for acquisitions of other financial assets, and total financial sources of funds are shown for each of the three broad sectors—consumers, businesses, and private financial institutions (other than commercial banks) and private nonprofit institutions. The financial flows are shown on an annual-rate basis. Adjustments are not needed in the figures for the downswing and the

second upswing to eliminate seasonal variation, and the averaging process for 1950 through mid-1953 eliminates most of the seasonal variation in the figures for this earlier swing.

There are definite cyclical patterns in the increases in business holdings of cash and of other financial assets and in the borrowings of both businesses and consumers. Consumers' uses of funds for additions to their other financial assets seem to have been only mildly influenced

TABLE 7

CYCLICAL SWINGS IN CONSUMER, TRADE, AND RESIDENTIAL
MORTGAGE CREDIT,[a] 1949–57
(annual rates in billions of dollars)

	1949–53 Upswing[b]		1953–54 Downswing[c]		1954–57 Upswing[d]	
	Sources	Uses	Sources	Uses	Sources	Uses
Consumer credit						
Consumers	3.3		1.3		4.1	
Nonfarm businesses		0.7		0.1		0.6
Commercial banking and						
monetary sector[e]		1.4		0.2		1.5
Savings and financial						
institutions n.e.c.		1.3		0.9		2.1
Trade credit						
Business corporations	2.6	4.9	−0.3	−0.8	3.7	5.4
Farms	0.3		−0.2		[f]	
Nonfarm, noncorporate						
businesses		−1.1		−0.7		−0.9
Governments[g]	0.8	0.7	−0.3	−0.1	0.1	0.1
Financial n.e.c. and nonprofit	0.1		0.0		0.1	
Insurance		0.1		0.0		0.1
Mortgages on 1- to 4-family						
properties						
Consumers	6.9	0.3	7.5	0.2	11.1	0.5
Nonfarm businesses	0.1		0.0		0.0	
Federal government		0.5		−0.3		0.5
Commercial banking and						
monetary sector[e]		1.0		0.8		1.3
Other sectors[h]		5.3		6.6		8.9

[a] This table is compiled from preliminary data in Federal Reserve memoranda on quarterly flow-of-funds accounts, dated January 7 and March 17, 1959.

[b] January 1, 1950 to June 30, 1953. Data for the fourth quarter of 1949 not available. Computing the average annual rate for these fourteen quarters has the effect of eliminating six-sevenths of the seasonal variation.

[c] July 1, 1953 to June 30, 1954.

[d] July 1, 1954 to June 30, 1957.

[e] In this table mutual savings banks are excluded from the banking sector and included with other financial institutions.

[f] Less than $50 million.

[g] Federal, state, and local.

[h] Other financial institutions plus state and local governments (see note e on Table 6).

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by the ups and downs of the cycle. The use of funds for additional cash shows mainly a downward trend. The financial sources and uses of funds for the broad financial and nonprofit sector show little response to the cycle.

Table 7 gives annual detail on various sector financial sources and uses of funds in connection with three forms of credit during the same three cyclical swings—consumer credit, trade credit, and mortgages on one- to four-family properties. All three of the sector sources shown for consumer credit participated in the cyclical swings in flows connected with this type of credit. In the case of trade credit, most of the swings are accounted for by business corporations (both as debtors and as creditors) and by nonfarm, noncorporate businesses. If one were to judge from this table he might conclude that cyclical

CHART 4

Ratio of Increment in Consumer Credit to Consumers' Durable Goods Expenditures, Quarterly, 1952–57
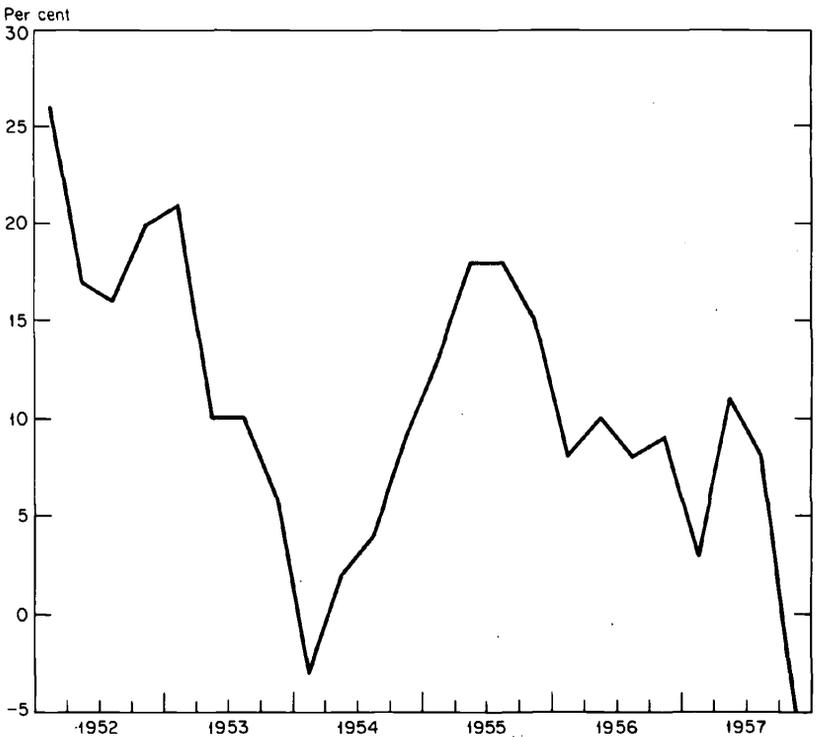
Source: See Table A–3. The ratio for each quarter is computed on the basis of seasonally adjusted figures.

variations in the financial flows connected with mortgages on one- to four-family properties are not very significant. In view of the comment on 1954 below this conclusion would probably not be safe.

We have long had enough information about various forms of credit to make extremely doubtful Davenport's idea that a cyclical contraction in bank credit might be so fully offset by an expansion of trade credit that the aggregate volume of credit would, at least for a time, be maintained. Table 7 seems to clinch the point so far as the three cycles it covers are concerned. However, Davenport, in the passage cited, was concerned with financial crises, not entire cyclical downswings.

Chart 4 presents a computation—the ratio of the quarterly increment in consumer credit to consumers' quarterly expenditures on durable goods (including a rough adjustment for seasonal variation[24])—which strongly suggests that changes in the consumer credit situation may have something to contribute to an explanation of the upper turning point of the cycle in 1953. The downward movement in this ratio to the first quarter of 1954 is marked. The subsequent increase from the trough to mid-1955 may also have helped to get the upswing under way. While there is a possibility that consumer credit may have had something to do with the 1957 turning point, the cyclical significance of the behavior of the ratio in 1956–57 is by no means clear.

I had hoped to be able to show a similar ratio computation for funds obtained through one- to four-family mortgages by consumers and their capital outlays on homes, but the computation was not completed in time. A preliminary computation seems to indicate a rise in the ratio during 1954 that may have helped to start the cyclical upswing.

VI. Concluding Comment

These scattered discussions of the various aspects of FOF accounts seemed to me the best way to give some indication of the wealth of analytical possibilities these accounts offer.

The two tentative capital outlay functions I have developed may perhaps be characterized as halfway stations between consumption functions and investment functions. They clearly suggest that further work with FOF data on functions for both the consumer sector and the state and local government sector should be worthwhile. And I would hope that they would stimulate efforts on investment functions for each of the three FOF business sectors.

[24] For the seasonally adjusted figures see Table A-3.

I have been able here to do only a little to indicate how the FOF figures can be used in interpreting recent cycles. Each quarter that passes will add to what can be done with the FOF data in cyclical analysis. With the aid of these data I venture to think that we should shortly be able considerably to improve our understanding of the cycle.

I have said nothing about the use of FOF data in connection with Federal Reserve and other policy questions. I think that this type of use is only just on the verge of a beginning. If we may judge by our experience with the national income and product accounts, it will really begin when we have—as we will shortly—quarterly data on a current basis.

Appendix Tables

TABLE A-1

CONSUMERS' ACCOUNT FIGURES AND RELATED ITEMS, 1939–57
(billions of dollars)

	Consumers' Current Surplus (1)	Increment in "Bank Credit minus Federal Obligations" (2)	National Defense Expenditures[a] (3)	Consumers' Actual Capital Outlay (4)	"Predicted" Consumers' Capital Outlay (5)
1939	11.7	0.5	1.3	8.6	7.3
1940	11.8	1.6	2.2	10.2	8.3
1941	18.2	2.4	13.8	12.9	12.1
1942	29.7	−3.4	49.6	9.9	11.7
1943	33.6	−1.3	80.4	8.7	7.1
1944	38.8	2.4	88.6	9.0	10.4
1945	32.0	5.1	75.9	10.4	10.3
1946	26.0	6.3	18.8	20.3	23.8
1947	26.3	9.1	11.4	27.7	28.0
1948	32.1	5.8	11.6	31.9	34.0
1949	32.2	2.6	13.6	31.2	33.6
1950	41.1	12.6	14.3	42.5	45.5
1951	44.7	8.5	33.9	42.2	42.8
1952	45.4	9.5	46.4	41.6	40.6
1953	49.0	6.2	49.3	46.5	43.5
1954	47.7	7.4	41.2	46.9	46.0
1955	53.5	14.2	39.1	58.4	54.9
1956	56.1	10.3	40.3	56.6	57.2
1957	56.9	7.0	44.3	56.7	56.9

[a] *Economic Report of the President*, January 1959, p. 139.

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TABLE A-2

State and Local Government Capital Outlays, 1939–57
(billions of dollars)

	Current Surplus	Actual Capital Outlay	Predicted Capital Outlay
1939	2.2	2.1	
1940	2.3	1.7	2.5
1941	2.7	1.4	2.1
1942	2.8	1.1	1.2
1943	3.1	0.7	1.1
1944	3.2	0.6	1.0
1945	3.2	0.7	1.1
1946	3.4	1.5	2.1
1947	3.4	2.7	1.9
1948	3.4	3.8	3.0
1949	4.2	5.2	4.6
1950	4.4	5.7	5.6
1951	6.1	6.9	6.8
1952	6.8	7.1	7.5
1953	7.5	7.7	7.8
1954	7.6	9.1	8.2
1955	8.0	10.0	9.7
1956	9.6	11.3	11.3
1957	10.2	12.4	11.9

TABLE A-3

CONSUMER CREDIT AND CONSUMER EXPENDITURES ON DURABLES, 1952–57

	Quarter			
	I	II	III	IV
QUARTERLY INCREMENTS IN CONSUMER CREDIT (billions of dollars; seasonally adjusted)				
1952	1.8	1.25	1.15	1.6
1953	1.7	0.85	0.85	0 5
1954	−0.2	0.15	0.35	0.8
1955	1.2	1.85	1.85	1.5
1956	0.8	0.95	0.75	0.9
1957	0.3	1.05	0.85	0.5
Seasonal adjustment	1.70	−0.75	0.05	−1.00
QUARTERLY EXPENDITURES BY CONSUMERS ON DURABLE GOODS (billions of dollars; seasonally adjusted)				
1952	6.85	7.2	7.1	7.95
1953	8.15	8.3	8.6	7.85
1954	7.85	8.0	8.0	8.55
1955	9.55	10.0	10.2	9.85
1956	9.55	9.3	9.5	10.05
1957	9.85	9.9	10.1	10.05
Seasonal adjustment	0.85	−0.20	0.40	−1.05
RATIO OF THE QUARTERLY INCREMENT IN CONSUMER CREDIT TO QUARTERLY DURABLE GOODS EXPENDITURES[a] (per cent)				
1952	26	17	16	20
1953	21	10	10	6
1954	−3	2	4	9
1955	13	18	18	15
1956	8	10	8	9
1957	3	11	8	−5

[a] After rough adjustments for seasonal variation.

COMMENT

EDWARD S. SHAW, Stanford University

Professor Copeland's paper makes two modest claims on behalf of flow-of-funds analysis. First, it is therapeutic, correcting misunderstanding and demolishing old shibboleths. Second, it is innovative, providing new insights into economic behavior. By aggregating behavior units more homogeneously and by supplying information regarding the financial aspect of economic activity, FOF opens the way to correction of old errors and determination of new truths.

Every economist must consider himself a more socially useful technician now that FOF is at his disposal. For this technological progress, his debt to Professor Copeland is profound. The economist's satisfaction with his new prowess must be qualified, however, until theoretical models are developed to accompany his financial input-output table. Professor Copeland's present paper obviously leads the way toward theoretical sophistication.

I

Professor Copeland undertakes to demonstrate the therapeutic qualities of FOF, first, at the expense of H. J. Davenport. At the cost of no little embarrassment then, but to my permanent advantage, I was a member, many years ago, of a Davenport seminar, and undertook, just once, to demonstrate something at Professor Davenport's expense. Still respectfully terrified of the old gentleman, I know he would have had a formidable rejoinder for Professor Copeland.

Davenport alleged that loans terminated by banks in a commercial crisis would necessarily be shifted to other creditors. Professor Copeland finds no evidence of such a shift during the cyclical swings of 1949–57. Davenport might point out that the financial structure has changed since his day. To appreciate his point, assume first that there are three sectors—banking, consumers, and nonfinancial firms—and assume also that national income is given. Assume, next, a rightward shift in liquidity preference by banks, involving a reduction in their commercial loan portfolios. At the given level of national income, firms are incurring deficits, cannot reduce debt, and hence must shift debt driven from bank portfolios to the consumer sector. The consumer sector can absorb such debt only by giving up money claims on banks, which it is prepared to do at the sharply rising rates of interest that denote a commercial crisis. Nothing else could happen, in the given context, unless income were to fall without lag to levels sufficiently low for consumers to run deficits and, hence, for firms to run surpluses applicable to debt repayment. In the given context, with some lag assumed in the downward adjustment of price level and output, Professor Davenport would be right. And the context I have sketched was less alien to his day than to ours.

In our time a more complex model is relevant, and I suspect that Professor Davenport would be aware of it. Consider the second half of 1957 as the locus of a "crisis": it was then that interest rates reached their short-cycle peak. Nonfinancial business managed a notable adjustment in its financial position. In contrast with

Professor Davenport's model, firms added to their own net financial assets at a rate higher by $14.1 billion in the second half of the year than in the first. Consumers and the foreign sector behaved in similar fashion. The loan portfolio of the banking system was approximately constant until the closing weeks of 1957, and then it rose. How could Professor Davenport be so wrong? The answer is essentially that the federal government managed a notable adjustment in its financial position, reducing its net financial assets at a rate higher by $16.4 billion in the second half of the year than in the first. At a relatively stable level of national income, the federal government succeeded to the role of borrower and, through its deficit finance, set the stage for a reduction in debt by business firms and consumers relative to their financial assets. Professor Davenport's mistake is that he did not foresee compensatory fiscal policy.

There is even a word to be said in Secretary McAdoo's defense. Undoubtedly it was not clear to him that the new monetary system was capable of the vast growth in nominal money that would stabilize the Treasury bond rate despite mounting public and private expenditure. The Federal Reserve was shiny new, and the inflationary thrust of which it was capable was not generally understood. One may add that the Treasury of World War II was not very quick to appreciate what had to be done with money to keep interest rates low and stable. A mild indigestion struck the government security markets in 1942–43, and rather emphatic measures were taken in a hurry to strengthen the security markets by inflationary devices. If Mr. McAdoo worried too much about the Treasury bond rate, Mr. Morgenthau worried too little.

As we see it now, Mr. McAdoo was slow to comprehend how the federal debt would find a lodging place, at stable rates of interest, as someone's financial asset. If his problem was entirely a matter of marketing nominal debt, the solution was easy. But one may conjecture that he had a glimmering of a more complex problem, namely, of mobilizing *real* savings by private sectors at a stable interest rate *and* price level. This problem went unsolved. Nominal money created to finance government borrowing was in excess supply, and the public's resistance to excess money manifested itself in price inflation. As the price level rose, progressively larger amounts of nominal money were needed for the transfer of any given amount of real savings. FOF analysis in nominal terms does not disclose the strains on the price structure that accompany transfers of real funds from lenders to borrowers. Mr. McAdoo's problem of real transfers at a stable interest rate and price level went unsolved, and nominal FOF analysis does not provide the answer.

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It may be observed, in this connection, that Professor Copeland's experiments in fitting FOF data to behavior equations are all in nominal terms, even though the period that he studies is defaced by a doubling of the price level. As a result, we cannot be quite clear regarding the extent to which behavior that Professor Copeland discloses in, say, the consumer and the local government sectors is responsive to real stimuli, and the extent to which amounts demanded were merely adjusting to changes in the purchasing power of money. In order that we may distinguish effects of changing relationships between real variables from the effects of moving the decimal point in nominal values, someone must experiment with FOF in real terms.

In our excitement over pioneering in FOF, it is important to remind ourselves now and then that FOF tabulates *ex post* nominal values of completed transactions. FOF is blind to transactions excluded by price adjustment and, as a corollary, to the role of price in balancing supply and demand. Professor Copeland remarks (see his footnote 13) that equality between sources and uses of funds in FOF accounts implies stability in the price of funds—that is, in interest rates. That this cannot be so is apparent when one realizes that the accounts balance during inflation or deflation of the price level, during periods of easy money or tight money, when money-wage rates are rising or falling or constant. The flow accounts report equality of purchases and sales without reference to *ex ante* inequalities that have been dissipated by changes in price.

In our excitement over pioneering in FOF, it is important to remind ourselves, too, that traditional theory is not wholly outmoded. A little familiarity with Wicksell, Marshall, or Fisher would have helped Mr. McAdoo with his financial puzzle. Simple, old-fashioned monetary theory could have told him that the nominal and the real market rates of interest could be held at low levels by sufficient growth in the stock of nominal money. The theorist in his armchair would have known the answers that the Secretary was seeking.

Professor Copeland is quite right in intimating that FOF analysis clarifies the multiplier process. An upward shift in the spending function, as the result of federal budget policy, generates an increase in debt and in demand for financial assets. In FOF we have, for the first time, a technique of tracing these financial shadows of the changes that are induced by federal policy in total demand on the markets for goods and labor.

Professor Copeland is on shakier ground in so far as his other dicta on the multiplier are concerned. He suggests that traditional multiplier doctrine predicts an indefinitely large and persistent response

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of national income to federal deficit spending. Professor Bach and others fortunately do not make this mistake. They demonstrate that the multiplier is finite and, in terms of comparative statics, that it relates a permanent shift in the spending function to a permanently higher level in total real demand for goods and output. They agree completely with Professor Copeland that an economy "get[s] accustomed to a federal deficit" and that ". . . the effect of a federal deficit in a given period . . . depends on what has gone before" (see page 208, above).

With regard to Professor Copeland's comments on alternative methods of financing federal deficits—by money-issue or by bond-issue—two considerations come to mind. His impression is that too sharp a distinction has been drawn between the two methods of federal finance. Now, one can imagine demand functions for money and bonds of such a character that the public's response on markets for goods and labor would be unaffected by the government's choice of the financing medium. But this is a special case. More generally, finance of federal deficits by money-issue must mean, if only in the short run, an excess supply of money and an excess demand for bonds, leading to a rise in bond prices. Finance of federal deficits by bond-issue alone must usually mean excess demand for money and excess supply of bonds, in the short run, with a tendency for bond prices to fall. A federal deficit associated with a rise in bond prices must ordinarily do more to stimulate private demand for goods and labor than a federal deficit associated with a fall in bond prices. Professor Copeland's special case is a little too Keynesian for my taste.

The second consideration relating to deficit finance bears on techniques of monetary control. Professor Copeland's point is that somehow the Treasury and Federal Reserve in combination are less efficient than the Federal Reserve alone in regulating the nominal quantity of money. I find the point worrisome, partly because it is not quite coordinate with Professor Copeland's confidence that in wartime a Treasury, collaborating with the central bank, can rig the market for its securities. Furthermore, since precisely the same instruments of control are applied to monetary expansion, whether monetary ease is linked with federal deficits or not, it is difficult to identify any special obstacles in the way of money issue to finance federal deficits.

Before we leave Professor Copeland's remarks on multiplier analysis, it may be advisable to sound once more the note of warning that FOF still works with nominal flows and stocks. The multiplier, on the other hand, is a real phenomenon. It measures increments in

real demand for real national product in response to an autonomous shift in real spending. When nominal data are used for demonstrations of the multiplier, there is always the chance that the results tell more about the money-demand function than about the consumption function, and more about the price level than about real income.

II

My comments until now have related to Professor Copeland's illustrations on the therapeutic value of FOF. From here on, I will be concerned with his illustrations of the innovative uses to which FOF may be put.

Anyone whose wry memories of forecasting in the first years after World War II are still clear must look upon Professor Copeland's version of the consumer capital outlay function with envy, and with regret that it was not available long ago. And, despite Professor Copeland's warning that his function may extrapolate inefficiently, economists fishing in the murky waters of economic behavior are unlikely to hook an r^2 of .963 and then throw it back in the hope of catching a bigger one.

Why should Professor Copeland be so skeptical? He begins his analysis at a point in consumer planning where expenditures on nondurables and services have been determined and where the choice is being made between real property and net financial assets. This choice is conditioned, first, by a trend favoring goods in the consumer budget at the expense of claims. In Professor Copeland's function, consumers *en masse* are heading relentlessly for a deficit budget on income and product account, with consequences for industrial capital formation and real growth that are not difficult to foresee. Before one projects this trend, it would be appropriate to test the temporary effects of shortages in durables after World War II, of the acceleration in population growth and family formation, of the wartime liquidation of consumer debt, of price inflation and inflationary expectations. In the interval that Professor Copeland has worked with, quite extraordinary forces were twisting consumer choice between financial and real assets, first in favor of one and then of the other.

The consumer-capital demand is negatively responsive, in Professor Copeland's formulation, to swings in national defense expenditure, presumably because defense means shortages in wartime and adverse change in relative prices of goods and financial assets in peacetime. The increasing stability of defense expenditure in recent years and its decline relative to business investment and other variables affecting the terms of trade for consumer capital goods are among the factors

which, Professor Copeland warns us, may render his function obsolete.

Consumer choice between tangible and financial assets is alleged to depend, finally, on credit availability—that is, on the various resistances that consumers encounter in selling financial assets and incurring debt. The principle underlying Professor Copeland's measurement of credit availability recurs in other connections. The principle is that bank purchases of government securities do not ease credit availability to private sectors, and may even signify a rise in bank liquidity preference against extensions of private credit. Only private loans in bank portfolios imply that consumers are having an easier time of financing expenditure on credit terms.

This principle is open to challenge on a number of counts. First of all, it does suggest that Professor Copeland may have been infected with the McAdoo illusion. The Secretary, we recall, feared the pressure of government borrowing on the loan and security markets, only to discover that bank purchases of government securities reduced the debt of private sectors and added to their liquidity. Professor Copeland argues that bank purchases of government securities divert funds from consumer spending by tightening the terms of private credit. Yet, in his comments regarding finance in World Wars I and II, he demonstrates that an increase in the security portfolio of the banking system adds to the liquid assets and reduces the debt burden of the private sectors. Granted that the market for consumer credit is not isolated from other parts of the market for loanable funds, it is not highly persuasive to argue that, given the total change in bank credit, bank preference for federal government securities over, say, state and local securities or business term loans makes credit less accessible to consumers.

In 1949, 1954, and 1958 increments of bank credit were predominantly in the form of government securities. The structure of explicit rates of interest fell to its minimum level in each of these years. This certainly does not suggest a rightward shift of banker liquidity preference. The decline in borrowing by both consumers and business in each of these years reflects, it seems, a leftward shift in the supply of private consumer and business debt rather than a decrease in banker demand for these forms of debt. Recession implies retardation in private demands for loanable funds, and the response of the banks is to apply their lending power to government securities.

Professor Copeland might rephrase his account of the credit-availability variable in the consumer-capital demand function. Banks have been adding to their portfolios and to the money supply during recession by purchase of government securities. In view of the

decline in consumers' demand for credit during recession and of immobilities on the loanable-funds market that result in some lag in the easing in consumer credit terms behind explicit rates of interest, extensions of consumer credit do not respond to easy money at once. Extensions of consumer credit in boom years are stimulated by the retardation of consumer debt; and in recession years, by bank purchases of government securities. When sales finance companies and dealers in durable goods do realize that consumer income has turned the cyclical corner to recovery and that banks are eager to displace government securities with consumer loans, "credit availability" accelerates consumer spending. Briefly, any inverse relationship one finds between consumer credit and bank purchases of government securities is attributable to a lag rather than to bankers' distaste for a type of loan which, most of them know, bears very low risk under even the gloomiest of economic skies. This suggests a generality, that there is exploratory work to do in lagged relationships between FOF variables.

Professor Copeland counts both consumers and state and local government as passive participants in the business cycle: both are "contributors to the cumulative processes of expansion and contraction, not very important at the turning points" (page 210). The cycle would be easier to understand if this were so. As Professor Copeland himself points out (page 218), consumer demands appear to have played a more active role in postwar turning points; and they have taken a dramatic part in getting each boom off to a rollicking start. State and local governments have reached their peak rates of increase in spending during trough years, retarding growth in their demand for goods and services as booms have matured. My impression is that the business sector has been more aggressive in maintaining the momentum of expansion and contraction.

Professor Copeland invites competition with his function explaining incremental capital expenditures of state and local government. At the same time, his coefficient of determination is due warning that any competition should not have skimped on its road work and shadow-boxing. Assuming that military spending takes a constant share of national product, Professor Copeland predicts a secular decline in the ratio of state and local capital outlays to state and local surpluses on income and product account. This implies a shift of state and local government from a borrower to a lender status. Since the forecast, in the paper before us, is that consumers will tend toward a net borrowing position, Professor Copeland evidently foresees a rather profound change in the financial interrelationships of the various sectors, depending on the size of future federal defense

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spending. Implications for the economy's structure of debt, financial assets, and financial institutions are significant indeed.

We may regret that Professor Copeland lacked time to experiment with financial variables in his work on state and local government demand for capital goods. Since many local ordinances do put debt restraints on capital outlays, this sector may be a relatively soft spot on which to begin intensive study of reciprocal influences between debt and spending. In principle, every transactor has his debt ceiling, though in many cases the ceiling may be only a forbidding cloud instead of a rigid roof. The effect of the ceiling on market behavior should be the easier to study when more or less fixed rules are laid down concerning limits on the transactor's spending in excess of revenues. I am confident that Professor Copeland would not deny the possible long-run importance of demand for state and municipal securities on social capital formation, and I suspect that he would not disregard the short-cycle concentration of state and local borrowing that occurs in years of easy money.

In a purely financial experiment, Professor Copeland measures short-cycle variations in liquidity preference on the part of the consolidated banking and monetary system. A decrease in the proportion of loans (net) to federal and other securities, in the portfolio of the banking and monetary system, signifies an increase in liquidity preference, while an increase in the proportion represents an increase in illiquidity preference. The result of the experiment, we are told, is that the proportion changes perversely in the short cycle, attesting to rising liquidity preference as recession sets in and falling liquidity preference as the boom takes over. Professor Copeland chides the Federal Reserve for its inability to turn this cycle pattern about so that declining demand for liquidity may damp recession and increasing demand for liquidity may inhibit the boom. Needless to say, I am volunteering my services in the Fed's defense.

The first issue I wish to raise is that the institutions whose portfolios are summed in this experiment are not a homogeneous decision-making group—at least for the problem under analysis. They include the commercial banks, savings banks, Federal Reserve Banks, Postal Savings System, and Treasury currency funds. The result is that an open-market buying operation by the central bank raises the proportion of government securities to loans in the total portfolio and temporarily raises the index of liquidity preference. So it seems that operations undertaken to reduce marginal liquidity preference are interpreted as evidence of a rightward shift in the liquidity preference function of the banking and monetary system. Conversely, the central bank's open-market selling seems to mean easier terms for "loans,

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net." Most of us are bound to be puzzled by this interpretation of open-market operations.

Professor Copeland indicates that he attaches the same meaning as Lord Keynes to increases and decreases in liquidity preference. Hence, one is surprised to find that each rise in Professor Copeland's index of liquidity preference—the ratio of securities held by the banking and monetary system to loans—coincides historically with a fall in loan rates of interest, and that each decline of the index coincides with a rise in loan rates of interest. Where Lord Keynes would put a *plus* sign to describe the relationship between liquidity preference and rates of interest, Professor Copeland seems to substitute a *minus* sign.

There does appear to be a cyclical swing in the proportion of securities to loans in the monetary system's portfolio, but my suspicion is that it reflects something other than Professor Copeland's "perverse" behavior of liquidity preference. Taking the commercial banks alone, one observes a cyclical flow and ebb of government securities to and from their portfolios. It is reminiscent of tidal waves of similar cyclical form that involved brokers' loans in the 1920's, excess reserves in the thirties and forties, and—in more remote times —the classic sterling balances and gold. At each let-up in the community's demand for bank loans, accompanied by an increase in total bank assets, the banks turn to open-market securities; and the structure of interest rates declines. At each renewal of active demand for loans, the banks release government securities—partly to the Federal Reserve as collateral for rediscounts but mainly to other investors; and the structure of interest rates rises. In short, the phenomenon that Professor Copeland translates into shifts of banker liquidity preference, others among us would translate into responses by the banking system to cyclical changes in the community's demand for bank loans relative to changes in aggregate bank assets. From this latter point of view, the perverse variations in liquidity preference originate not in the banking system but in the world outside it. And bank acquisitions of government securities perform the useful function of satisfying the public's liquidity preference so that some less desirable solutions, such as more extreme contraction in national income and price deflation, are unnecessary.

Professor Copeland's final exercise in FOF concerns cyclical variations in sector financial transactions. Other studies bear out his conclusions. Each cyclical upswing is marked by an increase in budget imbalances on income and product account—by an increase in the division of labor between saving and investment. The imbalances are cleared by transfers of assets and by quickened growth of debt

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and financial assets. Each cyclical downswing implies a reversion of the various sectors toward a balance of income and spending, that is, toward increasing reliance on self-finance of expenditures at the expense of external finance. The downswing rarely involves net cancellation of debt and assets in the aggregate, but it does reduce the flow of loanable funds and securities from freshet to trickle. The growth of debt and financial assets reflects inequality in the distributions of income and spending throughout the community, and this inequality has a notably strong and repetitive cyclical pattern.

Professor Copeland concludes on a note of optimism regarding the knowledge to be wrung from FOF series, once quarterly data are available for a considerable span of years. My optimism is no less fervent, though I would put less emphasis on the accessibility of quarterly data than on the development of theoretical models, into which the data may be fed, as the precondition of FOF's coming of age. These models will require, as I have suggested, some interlocking of FOF data with price series, some deflation of nominal values to real terms, and some ingenious detection of lagged relationships.

REPLY by Mr. Copeland

When I heard that Professor Shaw had been invited to comment on my paper, my first reaction was, "That is very nice indeed because there is such a broad area of agreement between us on the role of the monetary and banking system in our mainly private enterprise type of economy." My second reaction was that perhaps the invitation was a mistake if those organizing the meeting wanted to get a good discussion in the sense of a discussion that involves a clash of viewpoints. But I need not have worried. I had not realized how far apart our viewpoints are. Professor Shaw apparently did not realize this either when he wrote his comments. His *Weltanschauung* and mine are quite different.

When Mr. X undertakes to comment on a paper by Mr. Y under such circumstances, he is apt to draw inferences from what Mr. Y has said that seem to follow from his (Mr. X's) point of view but that do not follow from Mr. Y's at all. Professor Shaw has made a number of misinterpretations of this sort. In fact, he repeatedly attributes to me, by inference, propositions I want specifically to renounce. Let me list seven such misinterpretations in the order in which they appear in his comments:

1. ". . . Copeland remarks (see his footnote 13) that equality between sources and uses of funds in FOF accounts implies stability in the price of funds . . ."

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2. ". . . Copeland is quite right in intimating that FOF analysis clarifies the multiplier process. . . . He suggests that traditional multiplier doctrine predicts an indefinitely large and persistent response of national income to federal deficit spending."

3. ". . . Copeland's point is that somehow the Treasury and Federal Reserve in combination are less efficient than the Federal Reserve alone in regulating the nominal quantity of money."

4. ". . . Copeland argues that bank purchases of government securities divert funds from consumer spending by tightening the terms of private credit. Yet . . . he demonstrates that an increase in the security portfolio of the banking system adds to the liquid assets and reduces the debt burden of the private sectors."

5. "Assuming that military spending takes a constant share of national product, Professor Copeland predicts a secular decline in the ratio of state and local capital outlays to state and local surpluses on income and product account."

6. ". . . The forecast, in the paper before us, is that consumers will tend toward a net borrowing position . . ."

7. ". . . Copeland chides the Federal Reserve for its inability to turn this cycle pattern about . . ."

Each of these seven quotations embodies a misunderstanding of my paper.

Let me try briefly to correct the misunderstandings these seven quotations embody.

1. There is no remark of the sort in this footnote. In every FOF social account, sources must always equal uses except for the statistical discrepancies. No such social accounting balance implies stability in any price.

2. I do not use the multiplier concept, and I suggested no such prediction. The multiplier concept has proven to be an extremely bad one to try to use, in *empirical* cyclical analysis. Mitchell's cumulative process as it operates through the consumption function (with a lag in it) ought to be used instead.

3. What I said was, "We should, presumably, speak of influencing rather than controlling . . . the quantity of currency outside banks plus demand deposits adjusted . . ." I meant this to apply to the Federal Reserve System and the Treasury acting in concert. It applies also to the Federal Reserve taken by itself.

4. I cannot identify the statements I made that led Professor Shaw to advance this charge of logical inconsistency. I emphatically renounce both of the propositions he here attributes to me.

5. I do not so assume, and I made no such prediction. The ratio of state and local capital outlays to state and local surpluses on

income and product account was not one of the variables in my formula. In any case, it would not be reasonable to use the period 1939–57 to infer a secular trend toward deficit financing.

6. I did not use the consumer formula for extrapolation. I think it should not be so used.

7. I was discussing a situation I do not think the Federal Reserve is in a position to control very effectively. I most certainly did not chide the System for not having controlled it.

Professor Shaw objects to my statement that both the consumer sector and the state and local government sector "are cyclically somewhat passive—contributors to the cumulative processes of expansion and contraction, not very important at the turning points." He says, "The cycle would be easier to understand if this were so." A part of the force of his objection derives from his omission of the adverb "somewhat" that qualified the word "passive" in my statement. But more broadly, he seems to have forgotten that what I had in mind was that in the case of both these sectors "it should be possible to discover a pattern in their behavior that can be stated as an equation." I take it discovering such patterns is a significant aspect of what we mean by understanding the cycle.

Despite his emphasis on the autonomous nature of the behavior of these sectors, Professor Shaw seems greatly impressed with the two outlay functions that I presented, and also puzzled because I have suggested that the consumer function I proposed is unlikely to be much good for purposes of extrapolation. I thought I had made the reason for the warning against extrapolation clear. Any linear, behavioristic equation fitted to a relatively short time series that includes time as an independent variable with a substantial regression coefficient is likely to give poor extrapolations. My purpose was not to present a formula that I thought would fit a somewhat longer period, only to make a prima facie case for the existence of a pattern in which credit availability plays a significant part and which includes the war years, when an index of the availability of durable goods is included. I think I did make a prima facie case for the existence of such a pattern—also for the existence of a state and local government capital outlay pattern.

Professor Shaw is apparently unhappy about the variable I chose as an indicator of credit availability in the function for the consumer sector. Obviously, I needed a variable that would show bank extensions of credit to private parties but not necessarily to consumers. I thought the increment in the nongovernment component of bank credit, therefore, would be the most appropriate available measure. But I will be happy, if someone can suggest a way to provide a better one.

Professor Shaw says ". . . Copeland undertakes to demonstrate the therapeutic qualities of FOF, first, at the expense of H. J. Davenport." Let me make it clear that I am a great admirer of Davenport. His *Economics of Enterprise* was in many respects far better than any other contemporary general text on value theory. An outstanding feature was the treatment it accorded the business cycle. It was a passage from this treatment that I cited. Professor Shaw apparently did not check his recollection of the context of this passage, for he defends Davenport by imagining a situation in which ". . . firms . . . shift debt driven from bank portfolios to the consumer sector." In the passage cited Davenport was not concerned with a situation in which loans to business by consumers replaced loans by banks. Rather, he was concerned with a situation in which business credit replaced bank credit, specifically by an expansion of the trade receivables of some businesses through a lengthening of their collection periods.

Professor Shaw raises three objections to the section of my paper entitled "A Cycle in Liquidity Preference":

1. ". . . An open-market buying operation by the central bank raises the proportion of government securities to loans in the total portfolio . . ." during the part of the cycle in which I find this proportion high, and lowers it during that in which I find this proportion low. I assume he means that government securities held by the Federal Reserve banks were high in Stage I and Stage IX and low in Stage V during the three cycles covered by my figures. Actually, the average Federal Reserve bank holdings of governments for these three cycles were (in billions of dollars):

Stage I —21.9
Stage V —23.7
Stage IX—22.0

2. Each cyclical ". . . rise in Professor Copeland's index of liquidity preference . . . coincides historically with a fall in loan rates of interest, and . . . each [cyclical] decline of the index coincides with a rise in loan rates of interest." My index of liquidity preference for the three cycles after a rough adjustment for trend fell from Stage I to Stage V, and rose from Stage V to Stage IX. Mitchell found for various earlier cycles that the trough for interest rates— long and short—in most of his average-cycle patterns came in Stage I (and Stage IX) or in Stage II; the peak, in Stage V or Stage VI.[1] Of course, Keynes assumed that the cyclical patterns of interest rates

[1] Wesley C. Mitchell, *What Happens During Business Cycles: A Progress Report*, National Bureau of Economic Research, 1951, pp. 319–320, series 77–86.

were of this general nature.[2] If Professor Shaw's point here is that my findings are not easy to reconcile with a theory of interest rates that puts all the emphasis on liquidity preference, I agree with him.

3. But, apparently, he questions whether my index really reflects liquidity preference. He says, what ". . . Copeland translates into [cyclical] shifts of banker liquidity preference, others among us would translate into responses by the banking system to cyclical changes in the community's demand for bank loans relative to changes in aggregate bank assets." Professor Shaw and I can probably agree (a) that during the three cycles under consideration there was on the average a substantial cyclical increase in the private loan portfolio of the banking system from Stage I to Stage V, but only a comparatively small increase from Stage V to Stage IX, and (b) that these cyclical portfolio changes were changes in the adjustment between the supply of and the demand for funds in the loan markets involved. My problem was to find some measure that would separate out the supply-of-funds influences. I agree that the ratio I chose as my index is not exactly satisfactory for this purpose. Certainly its denominator, probably also its numerator, do to some extent reflect the private demand for funds as well as the willingness of banks to supply them. For this reason the index after the rough adjustment for trend no doubt exaggerates the cycle in liquidity preference. But surely one cannot rightly conclude that it shows a marked cyclical pattern in liquidity preference when there is none. Since Professor Shaw suggests excluding Federal Reserve credit from the computation, let me cite the figures for the month-end average portfolios of all commercial and all mutual savings banks for Stages I, V, and IX for the three cycles in question. They are:

	Stage I	Stage V	Stage IX
Billions of dollars			
U.S. government obligations and other securities	94.3	85.7	89.7
Loans	55.7	80.0	84.3
Ratio			
Governments and other securities to loans	1.70	1.07	1.07

In my paper I offered a quantitative analysis of World War II financing, using FOF data. Incidentally, I made this comment about World War I:

[2] John Maynard Keynes, *The General Theory of Employment Interest and Money*, New York, n. d., especially pp. 315–316.

With . . . the FOF accounts, it becomes easy to see the point overlooked by McAdoo and others, and to see how, because they overlooked it, they were led to an unwarranted concern about the pressure on the loan and security markets of the greatly increased wartime demand for funds. There is no question about the reality of the increase in demand. What was overlooked was that this increase was necessarily accompanied by a parallel one in the supply of funds.

Professor Shaw does not discuss my analysis. He does say ". . . McAdoo's problem of real transfers at a stable interest rate and price level went unsolved, and nominal FOF analysis does not provide the answer." Professor Shaw could be right about the way McAdoo conceived his problem. But certainly Studenski and Krooss have a very different view. They say "McAdoo seems to have paid little attention to the long-run effects of wartime policy, for at all times he considered the immediate money cost as the primary problem."[3] In any case, shortly after World War II the *Treasury Bulletin* carried an analysis of wartime finance that pointed out the parallel increase in the supply of funds to which I refer.[4]

In discussing my statement that ". . . too sharp a contrast between the two methods of financing a federal deficit . . ." has been drawn, Professor Shaw asserts, without offering any statistical support of his assertions, that

> . . .finance of federal deficits by money-issue must mean, if only in the short run, an excess supply of money and an excess demand for bonds, leading to a rise in bond prices. Finance of federal deficits by bond-issue alone must usually mean excess demand for money and excess supply of bonds, in the short run, with a tendency for bond prices to fall. A federal deficit associated with a rise in bond prices must ordinarily do more to stimulate private demand for goods and labor than a federal deficit associated with a fall in bond prices.

Since the question between us is, thus, one of the sharpness of the contrast between the two methods of financing and between their respective effects, there would seem to be need for an empirical exploration of the quantitative importance of the difference in interest rates they entail and, likewise, of the quantitative importance of this difference for differences in the private demand for goods and labor.

[3] Paul Studenski and Herman E. Krooss, *Financial History of the United States*, New York, 1952, p. 287.
[4] *Treasury Bulletin*, April 1946, pp. A-11 ff.

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Even if the quantitative difference of the two methods of financing for government bond prices can be clearly demonstrated statistically —I do not think it has been—surely Professor Shaw will agree that the problem of the relation between differences of interest rates and differences of aggregate demand is one that currently needs a good deal of further statistical investigation. I venture to think it is one on which the use of FOF data will prove profitable.

Professor Shaw makes a number of suggestions for further work in analyzing FOF data. There will, no doubt, be quite general agreement on the desirability of investigating the influence of variations in the prices of consumers' durable goods on consumer capital outlays, likewise on the desirability of investigating the influence of variations in interest rates on the capital outlays of state and local governments. There should be agreement, too, on the desirability of investigating various possible lags. It may be added that there are several variables Professor Shaw did not mention whose influence on consumer capital outlays should be considered, among them the stocks of consumers' durables and consumers' debts and liquid asset holdings. There are, also, a number of additional lines of inquiry that are desirable for the capital outlays of state and local governments. What is more important, the dependent variables I selected for consideration are, of course, just a beginning. Now that the FOF accounts are on a current quarterly basis, there should be a rapid increase in the various uses to which these accounts are put.

But I am disposed to add a word of caution. Professor Shaw speaks of ". . . transfers of real funds from lenders to borrowers" and urges that ". . . someone must experiment with FOF in real terms." If he means that someone should deflate all the various financial sources and uses of funds reported in the FOF accounts and experiment with the results, I think the suggestion of such wholesale deflation is bad advice.