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## Chapter 2

### PREVIEWS AND PRELIMINARIES

So I made the transaction the ultimate unit of economic investigation. . . . Transactions . . . are the alienation and acquisition, between individuals, of the *rights* of future ownership. . . . *The transfer of these rights* must therefore be negotiated between the parties concerned, according to the working rules of society, before labor can produce, or consumers can consume, or commodities be physically delivered to other persons. John R. Commons, *Institutional Economics* (Macmillan, 1934), pp. 4 and 58.

IN THIS CHAPTER we examine a highly condensed version of the moneyflows accounts for an illustrative year and pose some of the interpretative questions concerning the more detailed accounts that are to be considered in Part III. We also attempt preliminary but somewhat extensive answers to two technical questions that will already have puzzled the reader: What is the relation of the moneyflows accounts to the equation of exchange? and, What is their relation to the national income and product accounts?

Following Commons's lead we propose to take the transaction as our basic unit in the investigation of the money circuit. Our measurements must reflect moneyflows arising from various types of transaction.

Commons thought of a transaction as "two wills acting on each other".<sup>1</sup> Accepting this conception for the moment we may say that each moneyflows transaction implies two parties — a payer and a recipient. It will be convenient to refer to the parties as transactors. Indeed, we shall think of our economy as made up of a great number of transactors that are continually entering into moneyflows transactions with one another and of the moneyflows transactions as playing a major role in organizing our society into an economy; for it is through these transactions that the detailed market adjustments of production and distribution are made from day to day.

The transactions involve money inflows and money outflows for the transactors; any single transaction means an outflow for one transactor and an equal inflow for another. These moneyflows constitute the money circuit for which it is our purpose to provide measurements. We must

<sup>1</sup> *Legal Foundations of Capitalism* (Macmillan, 1924), p. 79. However, Commons included in his conception of transaction the interests of various third parties; cf. p. 68.

therefore concern ourselves with various kinds of transactor and various kinds of transaction.

A transactor is not necessarily a natural person; transactors include governments, corporations, trusts (in the legal sense), and partnerships. On the other hand, the same natural person may be two transactors at the same time: he may be both a household (if he is a single person) and the sole proprietor of a business. A transactor is an accounting entity that receives and makes money payments. Thus we shall regard as transactors households, various types of private business enterprise including farms, private nonprofit institutions, the various branches of government, etc.

Since we are studying the money circuit of the United States, our consideration will for the most part be confined to the moneyflows of transactors who may be said to reside in the United States. But we shall need to take special account of their transactions with the rest of the world. We shall include the rest of the world among our transactors to the extent that international moneyflows transactions are revealed by the balance of international payments.

Because our domestic economy consists of millions of transactors, it is necessary to deal with them in broad groups. An early step in designing a plan of measurements for moneyflows must therefore be to adopt a scheme of classification for U. S. transactors. We shall face this problem in the next chapter.

Because money plays a major role in organizing our economy, it has frequently been characterized as a money economy. In a significant sense it is also an accounting economy. Our system of moneyflows has become so complex that many transactors must keep detailed accounting records. Such records, and financial statements and reports derived from them, today help significantly to organize economic activity.

Since moneyflows register themselves in the accounts of the various transactors of which our economy consists, we should be able to construct measurements of moneyflows from their accounting reports. We have sought to do this, and as a result we have cast the moneyflows measurements in the form of a set of social accounts.

Not only are there millions of transactors in our economy; there are also millions of kinds of transactions. An accounting report deals in broad groups of transactions. Hence a second necessary preliminary step in designing a plan of moneyflows measurements is to adopt a scheme of classification for transactions. We shall consider the problems of classifying transactions in Chapters 4-9.

## 1 *The Main Money Circuit*

Because the moneyflows measurements here presented deal with broad groups of transactors and with broad groups of transactions, they represent what has been called an aggregative approach.

Heretofore the approach to the measurement of moneyflows has frequently been an aggregative approach in terms of the equation of exchange,  $MV = PT$ . This raises several questions it seems desirable to pose at the outset. How does the aggregative approach here adopted (we shall call it the social accounting reproach) differ from that of the equation of exchange? Does the money circuit include all transactions? If not, what transactions are included and what transactions are excluded? And what are our criteria for inclusion and exclusion?

The second question, Does the money circuit include all transactions? may be briefly answered. We shall not attempt to include all transactions in our measurements of moneyflows. We shall not even attempt to include all money payment transactions.

A large class of transactions — some invented by accountants and some by economists — involve only one transactor each and no money payments. There would appear to be a *prima facie* case for regarding these as not parts of the money circuit. Depreciation writeoffs (debit depreciation expense, credit depreciation reserve) may serve to illustrate this type of transaction. We shall consider various types of non-money-payment transaction more fully later. Suffice it to say here that most of them will be excluded from our estimates of moneyflows.

But our estimates exclude certain money payment transactions too. They are confined to what will be called the *main money circuit*. They omit, in addition to nonmoney-payment transactions, a large class of transactions that will be referred to as *technical transactions*. The equation of exchange approach, as ordinarily interpreted, has recognized such a class of technical transactions. Thus, it has been customary to take the series known as debits to individual accounts to represent most of  $MV$  and to exclude settlements between one bank and another from  $MV$ , although this means excluding a large fraction of money-payment transactions. This practice will be followed to the extent of excluding settlements by one bank with another arising from the interbank clearance of checks. It is wrong, however, to exclude bank transactions from the money circuit entirely. We shall include in the main money circuit various bank expenditures (payrolls, taxes, interest, purchases of supplies and services, etc.).

The equation of exchange formulation, carefully construed, would support the inclusion of such expenditures as bank payrolls and bank purchases of supplies. But it does not afford a satisfactory basis for defining the main money circuit for two reasons: first, historically it has suggested two mutually inconsistent criteria; second, both criteria have reference to formalities rather than to basic economic significance. While it is not our present purpose to offer a critique of the equation of exchange, we may note that, if  $MV$  and  $PT$  are interpreted literally, they are not the members of a true equation. It would be better to write  $MV > PT$ . Attention to  $MV$  has suggested defining the main money circuit as consisting of cash settlement transactions. Many of these are of doubtful general economic significance. Carried to its logical conclusion, this cash settlements view would mean including all money payments in  $MV$ , even debits to bankers' balances. At the same time this view has been construed to call for the exclusion of transactions settled by offset regardless of their significance. On the other hand, attention to  $PT$  suggests a somewhat narrower conception of the main money circuit. On this  $PT$  view, each transaction is to be regarded as the extension of a price times a physical volume. Some years ago the writer pointed out that there is a substantial dollar volume of transactions (taxes, public assistance, personal remittances, charitable contributions, etc.) that cannot readily be construed in these terms.<sup>2</sup> Such non- $PT$  transactions amounted to more than \$75 billion in 1943.<sup>3</sup> They should clearly be treated as parts of the main money circuit.

As a preliminary statement we may say that the main money circuit should be so defined as to include all moneyflows that play a substantive part in effecting over-all economic adjustments; that is, our moneyflows measurements should include all the moneyflows one would need to consider for purposes of an aggregative approach to general equilibrium theory, or to a general theory of employment, interest, and money.<sup>4</sup> But

<sup>2</sup> 43 *Quarterly Journal of Economics* 648-66, and 24 *Journal of American Statistical Association*, 109-12. It is noted in the first of these references that  $MV$  and  $PT$  are not synchronous. We shall have need to establish rules for the fiscal periods to which various types of main money circuit transaction are assigned in our measurements.

<sup>3</sup> This counts as non- $PT$  transactions the types of moneyflow listed in the Catalogue in Chapter 10 under the following numbers: 2, 3, 4, 9, 10, 11, 12, 13.

<sup>4</sup> It is intended by this language to indicate how inclusive our conception of the main money circuit should be and at the same time to take account of the possibility that a general theory of employment, interest, money, etc., might not be a general 'equilibrium' theory. It is intended to indicate also that data on moneyflows alone are not sufficient for purposes of aggregative general theory.

they should not include transactions that can properly be dispensed with for such purposes:

This statement of the case is, of course, far from an unique specification of the main money circuit. It is not intended as a definition. On the one hand, it does seem to require the inclusion of all moneyflows transactions that appear in the national income and product accounts, regardless of the method by which they are settled or of the possibility of construing them as  $p \times t$ 's. On the other hand, it does permit excluding such moneyflows as debits to interbank balances. But between these limits the criterion of economic significance must be interpreted for a wide range of items. In effect we are proposing something like a common law procedure for defining the money circuit. Instead of propounding a comprehensive, tightly drawn statute we prefer to interpret general language one case at a time, having due regard for the various precedents already established.

The full and precise definition of the main money circuit we propose thus becomes an operational definition. It consists in the detailed specification of the methods of measurement, spelled out in the pages that follow. In outline we aim to include as far as data permit all moneyflows arising from transactions in goods and services, purchases for resale as well as purchases that appear in the national income and product accounts; all transfer payment moneyflows — grants, benefits, etc. — that pass from one sector of the economy to another; and the net moneyflows through financial channels from one sector to another.

This means that our definition of the main money circuit is very inclusive, but it means also that a large volume of money-payment transactions are classed as technical and hence excluded from it. In contrasting what he calls "circular velocity" and "exchange velocity", Angell suggests a broad category of technical transactions. He says in part:

Two men could trade given blocks of securities and of money back and forth between themselves indefinitely, and could thus pile up a tremendous recorded money volume of transactions. But neither the size of this total money volume of transactions nor the movements through space of the money used would have any particular significance for the current unidirectional flow of goods and services or for the general national welfare — except to the extent, usually small, that these operations deprive other types of economic activity of needed supplies of money. Most of the financial classes of transactions are simply whirlpools at the side of the main flow of payments for the production and exchange of goods and services. Such financial transactions, and the money currently used in them, must therefore be excluded from the range of monetary phenomena to which the

concept of circularity is applied. . . . Only new saving and investment and the money used in them, among the financial transactions, should be included.<sup>5</sup>

Clearly Angell would distinguish main money circuit transactions from technical transactions by referring to their economic significance. We shall follow in general the distinction he suggests, undertaking to draw an empirical line between the main stream and the mere whirlpools. In Part II we set forth our operational definition of the main money circuit in some detail; still further detail will be found in Appendices A and B. At this point it may suffice to characterize the included and excluded categories in general terms, and give an idea of the order of magnitudes involved. When we exclude any class of money payment transactions from the main money circuit, the ground will be that they do not play a substantive part in effecting over-all economic adjustments but rather have to do with the particular techniques by which such adjustments are effected. We propose to exclude from the main money circuit three categories of technical transactions that are included in debits to individual accounts:

- a) *Money-changer transactions.* The transactor makes a payment to himself, as when he cashes a check, buys foreign exchange, or transfers a balance from one bank to another.
- b) *Agency transactions.* Transactor P makes a payment to Transactor R through a third party A, who acts either as P's disbursing agent or R's collection agent. Anyone who travels on a reimbursable expense account engages in agency transactions. Each agency transaction involves two payments, P to A and A to R. For purposes of the main money circuit these two are counted as a single payment by P to R, the other payment being classed as technical.
- c) *Financial turnover transactions.* These turnover transactions probably make up the majority of technical transactions. Liquidations of investments in loans and securities and new investments in such portfolio items, to the extent that these transactions offset one another, are regarded as financial turnover transactions; also repayments of indebtedness and new borrowing, to the extent that they offset one another, are regarded as financial turnover transactions.

The proposal to exclude money-changer and financial turnover transactions suggests the question, Just what financial moneyflows are in-

<sup>5</sup>James W. Angell, *The Behavior of Money* (McGraw-Hill, 1936), p. 133. Angell thought of the financial transactions he would exclude as "not more than 10 or 15 percent . . . of all money-using transactions" other than debits to bankers' balances. But compare the present writer's estimate of "two hundred billion dollars, or over 30 percent of the total of cash disbursements in 1919" (24 *Journal of American Statistical Association* 114).

cluded in the main money circuit? The answer is: First, our set of social accounts is not confined to moneyflows; it includes also what we call loanfund balances — cash on hand, trade receivables, portfolios, various forms of debt, etc. Second, we include the net increments and decrements in these various balances in the main money circuit. In other words, it is proposed to define the net increment in a transactor's holdings of loans and securities as a part of the main money circuit, but to treat the turnover of these assets as technical transactions; also, it is proposed to define the net increment in his debts as a part of the main money circuit, but to treat the turnover of these liabilities as technical transactions.

Most economists will probably agree that money-changer and agency transactions should be classified as technical rather than as parts of the main money circuit. It is expedient to treat financial turnover transactions in this way too, because present information regarding the volume of these transactions entered into by various groups of transactors is inadequate; turnovers too frequently are not revealed by financial statements.

But this way of defining the main money circuit would be preferable even if we had plenty of data on financial turnover transactions. It was lack of economic significance, not lack of data, that led Angell to characterize financial turnover transactions as mere "whirlpools at the side of the main flow of payments." If we wish to probe the relations between transactions involved in current business operations and in acquiring new tangible assets on the one hand and transactions in receivables, portfolios, and indebtedness on the other, for nearly all transactors it is precisely the increments in receivables, portfolios, and indebtedness that are significant. Indeed gross figures on security transactions, on credit sales and collections, and on borrowing and debt repayment, unless they are such as to enable us to compute these increments, are almost certain to be highly misleading. But if we know how much a transactor has borrowed from banks as of January 1, and his net additional borrowing during the year, we can determine what contribution such borrowing has made toward financing his expenditures for commodities and services; and (apart from seasonal changes in financial requirements) information concerning the gross volume of his borrowing offset by repayments adds nothing as far as the amount of this contribution goes, though it does tell us something about the particular technique by which this contribution was accomplished. Similarly, if we know a transactor's portfolio of loans and securities on January 1 and the net increment in

it during the year, we know how much of his ordinary receipts has gone to finance such credit extension; knowledge of his portfolio turnover adds nothing on this point, though it throws light on the transactor's technique of portfolio management.

A sweeping claim of significant inclusiveness is made for the definition of the main money circuit here adopted. But it is one thing to say, "All such-and-such transactions are included in the moneyflows accounts" and quite another to say, "All such-and-such transactions are separately disclosed in those accounts". Certainly they are not all separately disclosed; far from it. Because of the small number of transactor groups, the small number of transaction types, and the small number of loan-fund balances distinguished in the moneyflows accounts, the accounts inevitably conceal vastly more than they separately disclose. We lump mortgage companies and pawnbrokers in a single transactor group; purchases of durables and of nondurable goods in the same transaction class; currency and deposits in the same cash balance. If households were drawing down bank balances to increase currency holdings, or if mortgage companies were decreasing their portfolios and pawnbrokers extending new loans, it would take a more detailed set of accounts than we present below to disclose these developments.<sup>6</sup> Our claim of inclusiveness refers to the transactions included in the main money circuit, not to the degree of detail disclosed by the accounts.

## 2 *Main Circuit Transactions and Technical Transactions*

Presumably the equation of exchange in a transactions velocity sense has often been assumed to provide an effective basis for investigating the relation between the quantity of money and the level of commodity prices. As far as available statistical measurements are concerned, this assumption would seem to imply a somewhat stable relation between aggregate debits to individual accounts (possibly corrected for the omission of non-cheque and certain other cash settlements) and aggregate gross national product.

Now the definition of the main money circuit here adopted includes all purchases of gross national product, i.e., the entire gross national product except imputed items. It includes also a volume of other trans-

<sup>6</sup> A technical objection can be advanced against our definition of the main money circuit to the effect that it is not unique because it is not entirely independent of the degree of detail of the accounts. The main circuit flow, on our definition, can be increased both by subdividing sectors and by shortening the fiscal period. However, we believe the range of ambiguity this possibility opens up is, as a practical matter, likely to be small. We consider this point further in Chapter 10.

actions somewhat larger than the gross national product. However, the volume of technical transactions excluded from the main money circuit but included in debits to individual accounts is also very large. Debits to individual accounts include all charges of all sorts entered on the banks' books against individual (deposit) accounts, and the individual accounts include substantially all kinds of deposit liability except time deposits in mutual savings banks, deposit liabilities of banks to other banks, and Federal Reserve Bank deposit liabilities to the Federal government.

Table 1 compares total transactions included in the main money cir-

Table 1  
Main Money Circuit Transactions and Technical Transactions  
(Dollar Amounts in Billions)

	1936	1937	1938	1939	1940	1941	1942	Source
<b>TOTAL MAIN CIRCUIT OUTFLOW</b>								
A From Households . . .	63.6	67.8	64.2	67.3	72.0	87.3	110.7	Table 18
B From the Fed. Gov. . . & Banks	12.9	10.8	11.8	12.3	13.9	25.1	67.0	Tables 19 & 40
C From All Other . . . Transactors	213.4	232.2	204.7	225.3	247.9	308.2	350.0	Tables 20-27
D From all Transactors . . . (Total Transactions in the Main Money Circuit)	289.9	310.8	280.6	304.9	333.8	420.5	527.8	A + B + C
E From all Transactors . . . except the Fed. Gov. & Banks	277.0	300.0	268.8	292.6	319.9	395.5	460.7	A + C
F Line E adj. to . . . Report Settlements	274.7	300.2	270.3	291.1	318.7	392.5	462.0	See note
<b>DEBITS AND THE FLUFF IN DEBITS</b>								
G Debits to Deposit . . . Accounts Held by the Public	624.3	646.1	562.1	587.3	621.9	749.0	844.1	See note
H 1st Estimate of the Fluff	349.6	345.9	291.8	296.2	303.2	356.5	382.1	G minus F
J Indicated Ratio of Fluff to Transactions in the Main Money Circuit Based on 1st Esti- mate (%)	121	111	104	97	91	85	72	H ÷ D
K 2d Estimate of the Fluff	383.9	383.4	325.6	332.6	343.0	405.6	439.8	G minus 2/3 of F
L Indicated Ratio of . . . Fluff to Transactions in the Main Money Circuit Based on 2d Estimate (%)	132	123	116	109	103	96	83	K ÷ D

Amounts entered on lines A through E for the several sectors are estimates of what will be called total ordinary expenditures and other dispositions of money. Line B covers two sectors called: (a) the Federal government and (b) Banks and U. S. Monetary Funds.

Lines A through E report sales on open account and other book credit transactions in the years in which they take place, rather than in the years in which the settlements are made. In line F the amounts in line E have been adjusted to reflect the year of settlement. The adjustment was accomplished by subtracting from line E the annual increment in accounts payable for the transactor groups involved.

Line G represents the Federal Reserve Board estimates of total debits to individual accounts in commercial (but not mutual savings) banks minus an estimate of the small item, debits to Federal government accounts in commercial banks. It thus refers to the same transactors as line F. The main component of line G is settlements by check, and we may think of the remainder as checks cashed plus miscellaneous debits. We may think of main circuit transactions on line F as settled by (a) check, (b) currency transfers, or (c) other means.

The first estimate of the fluff in debits (line H) assumes that (b) + (c) = checks cashed plus miscellaneous debits in line G. Hence fluff = G minus F.

The second estimate of debits assumes that a part of (b) + (c) equal to 2/3 of F is not included in debits. Hence fluff = G minus 2/3 of F.

The relation between debits and main money circuit moneyflows is further considered in Chapter 10.

Because of rounding, line D may not precisely equal lines A + B + C.

cuit and two alternative estimates of the fluff or the purely technical transactions included in debits to individual accounts (lines H and K). The amount of fluff cannot be determined precisely but it probably lies between these two estimates and nearer to the higher (second) estimate than to the first.

Two facts stand out clearly. First, the fluff in debits is sometimes as large as the total of all transactions in the main money circuit. Second, the ratio of these technical transactions to the transactions in the main money circuit has varied through a wide range. It was probably at least 1.25 or 1.30 in 1936 and apparently about .75 or .80 in 1942. We do not know what the ratio was in earlier years, but it was probably somewhat more than 1.30 in 1928, and must have been small during a good part of the 19th century. Those who have sought to discover the key to the relation between the quantity of money and the level of commodity prices by a route that requires a stable relation between aggregate debits to individual accounts and aggregate gross national product (at current prices) should bear in mind that the fluff in debits to individual accounts is very large and that its ratio to total transactions in the main money circuit is apparently highly eccentric.

Consideration of Table 1 suggests three significant advantages the social accounting approach to moneyflow measurements has over the equation of exchange approach as that has most commonly been construed:

- 1) A reasonably clear line can — and will — be drawn between main money circuit transactions and technical transactions.
- 2) The main money circuit total excludes the fluff that is included in debits to individual accounts. It is a total of transactions selected for their economic significance and is, therefore, a more useful total than debits for economic analysis.
- 3) In terms of present information the total of debits to individual demand accounts can be analyzed directly into components only by classifying reporting banks (e.g., on a geographical basis). But the total in the main money circuit (Table 1, line D) can — and will — be analyzed in considerable detail into its components by various economic categories. In fact, more work should yield a good deal of detail to supplement that presented in the following pages, if and as it may seem advisable. Moreover, it is the detail here presented that makes possible the crude estimates of the fluff in debits to individual accounts shown in Table 1.

The difficulty in analyzing the debits data is of course a practical, not a logical one. Conceptually the transactions total in the equation of exchange can be — and sometimes has been — analyzed by type of paying and type of receiving transactor as well as by type of transaction.

In a sense, therefore, our social accounting approach is a special form of equation of exchange approach. In considering its advantages we should recognize that we are contrasting it with another form of the equation of exchange approach, the most familiar or one-sector form.<sup>7</sup>

To the three advantages just listed we may add an advantage that will be elaborated in a moment:

4) The one-sector equation of exchange approach affords only a limited analysis of moneyflows, an analysis that would answer the question, What is the dollar volume of flow represented by each type of transaction? In the social accounting approach we undertake, in addition, to determine for each type of transaction the dollar volume of receipts and the dollar volume of expenditures for each group of transactors. This kind of detail facilitates tracing the impact of changes in the moneyflows of one transactor group upon the activities of other groups.

Thus while both approaches to the study of moneyflows are aggregative, the social accounting approach proceeds on a lower level of aggregateness. Instead of treating the economy as a single sector, summing all pt's without grouping them by classes of transactors, we shall divide the economy into eleven sectors, setting up a separate moneyflows account for each. And instead of regarding moneyflows merely as flows, we shall treat each of them both as an inflow for some transactor and as an outflow for someone else.

### 3 *The Moneyflows Accounts in Outline*

Because our moneyflows accounts deal in broad aggregates of transactions and broad groups of transactors they gloss over a vast amount of the detail of our actual economy. Nonetheless the picture they reveal is a very complicated one.

Let us begin by considering the main money circuit as it appears when the economy is divided into only two transactor groups and when only six transaction categories are recognized. Let us divide the economy into (a) households, and (b) all other transactors, and for the moment, confine ourselves to the following transactions:

- 1) Payrolls before withholdings and other deductions but excluding pay in kind. We shall refer to this type of moneyflow as *gross cash pay*.
- 2) Cash dividend and interest payments.
- 3) Cash withdrawals from proprietorship account by the owners of unincorporated businesses and farms and the lessors of real estate minus new money invested by these owners. We shall call this item *net owner takeouts*.
- 4) Moneyflows arising from sales of business-produced services and from

<sup>7</sup> It is a one-sector form so far as substantive transactions are concerned. Changes in M suggest two sectors, as we shall have occasion to recognize in Chapter 12.

sales and resales of commodities. We shall refer to this category of transactions as *customer moneyflows*.

5) All other transactions in the main money circuit except those in Category 6 below. For the moment we need not concern ourselves in detail with this catchall category — it includes a wide variety of money payments: rents, taxes, insurance premiums, insurance benefits, public assistance, etc., and (to the extent that these items are included in the main money circuit) transactions in loans, securities, and other forms of credit, and transactions in a transactor's own debt and capital stock. We shall refer to the money inflows from this catchall type of transaction as *other sources of money* and to the outflows as *other dispositions of money*.

6) Net increase in cash balances. Strictly speaking, this increase is not a transaction but the result of a large number of transactions. However, accountants often find it convenient to treat a summary entry on the books that records such a result as if it recorded a single transaction. We propose to follow this procedure here. We shall compute this item net for each group of transactors, i.e., increases and decreases within the transactor group will be allowed to offset each other.

In Part II we shall need to go into the various types of transaction in the main money circuit in detail and to replace Category 5 with a bill of particulars. For the moment two general comments may suffice.

First, as has been indicated, we have aimed to include in the main money circuit all moneyflow transactions that play a substantive part in effecting over-all economic adjustments. We can now indicate one of the principal criteria on which we have relied for identifying such transactions. For each transactor we should have a sufficiently comprehensive account of his transactions so that his total sources of money reported in Items 1-5 and his total dispositions of money on account of Items 1-5 can be expected fully to explain the change in his cash balance during any given accounting period. The social accounting approach to the measurement of moneyflows implies that moneyflows can be arranged and presented as a set of financial statements and that we can expect these statements to balance (apart from discrepancies of estimate). If we provide a full balancing statement for each transactor and can check our measurement of outflow from paying transactors on account of each type of transaction against the corresponding measurement of inflow to recipient transactors, we have a definite basis for saying that we have not omitted from the main money circuit any moneyflow transactions of substantive economic significance, assuming we are right in supposing that technical transactions can be dispensed with.

A second general comment is suggested by the six transaction categories listed above. We are accustomed to financial statements for business

enterprises that aim to account for changes in the balance in the proprietorship account, not changes in the cash balance.

This means that the financial statement information to which we are accustomed reports facts on an accrual basis. But for purposes of revealing moneyflows we want facts reported on a cash basis or something very close to it. In particular we wish to know the net owner takeouts not the net income of (unincorporated) business proprietors. Also we wish to know total out-of-pocket business expenditures on account of customer moneyflow transactions, including expenditures charged to asset accounts as well as out-of-pocket current expenses. We shall speak of the financial statements in which we present our moneyflows measurements as being on a moneyflows basis. The expression 'moneyflows basis' is intended to indicate that the basis employed is close to a cash basis but is slightly different. Most of the items in these statements are on a cash basis; but for two types of transaction deviation from a cash basis has seemed advisable (see Chapter 5).

Mitchell emphasized that "these summaries . . . must be distinguished sharply from accounts made to show income and outgo as determinants of profit and loss." The distinction between financial statements that are on an accrual basis and financial statements that are on a moneyflows basis is very important. Unfortunately, it is also tricky. If we give special names to each type of transaction, it will help us to bear in mind that transactions are reported on a moneyflows basis. Gross cash pay, net owner takeouts and customer moneyflows are terms we have adopted with this end in view. The significance of the distinction between a moneyflows and an accrual basis will become clearer when we come to relate estimates of moneyflows and of national income — the latter are to an important extent on an accrual basis.

Let us see what a social accounting view of moneyflows on a two-transactor-six-transactions basis looks like.

Because two transactor groups are recognized, we shall expect a financial statement for each group. But we may expect also a financial statement for each type of transaction summarizing inflows and outflows on this account for each transactor group. The money inflow for any group of transactors on account of any type of transaction thus enters into two accounting relationships: it appears as an item on the financial statement of the transactor group; it appears also as an item on the financial statement for the type of transaction. Similarly, with the money outflow for any transactor group on account of any type of transaction.

To exhibit the various moneyflow interrelationships it is desirable to

show all the flows for an illustrative year in a single table. For purposes of illustration 1942 has been selected. In Table 2, columns 1 and 2 present the financial statement for household transactors; and columns 3 and 4 the financial statement for other transactors. Debit or outflow items (we shall refer to these as *dispositions of money*) are shown in columns 1, 3, and 5. Credit or inflow items (we shall call these *sources of money*) are shown in columns 2, 4, and 6. The financial statements for the various types of transaction appear on pairs of lines: the statement for gross cash pay on lines A and B; the statement for interest and dividends on lines C and D, etc. The debit items (dispositions of money) appear on lines A, C, E, G, etc., and the credit items (sources of money) on lines B, D, F, H, etc.

Each transactor group account and each type of transaction account is a balancing statement. When we have only two transactor groups and six types of transaction some of these statements are very simple. Thus, all net owner takeouts appear as a receipt in line F, column 2, and as an expenditure in line E, column 3. But, of course, various types of enterprise give rise to net owner takeouts and we shall have occasion to recog-

Table 2  
A Condensed Summary of Main Money Circuit Transactions, 1942  
(Billions of Dollars)

TYPE OF TRANSACTION	HOUSEHOLDS		OTHER TRANSACTORS		ALL TRANSACTORS	
	Dis-positions	Sources	Dis-positions	Sources	Dis-positions	Sources
	(1)	(2)	(3)	(4)	(5)	(6)
A Gross Cash Pay Dr	1.1		78.0		79.1	
B Gross Cash Pay Cr		79.1		.0		79.1
C Interest & Dividends Dr	1.3		12.8		14.1	
D Interest & Dividends Cr		6.8		7.3		14.1
E Net Owner Takeouts Dr	.0		15.1		15.1	
F Net Owner Takeouts Cr		15.1		.0		15.1
G Customer Moneyflows Dr	69.7		236.3		306.0	
H Customer Moneyflows Cr		.1		305.9		306.0
J Other Dispositions of Money Dr	31.6		74.9		106.5	
K Other Sources of Money Cr		9.6		96.8		106.4
L Net Increase in Cash Balance Dr	7.0		.0		7.0	
M Net Decrease in Cash Balance Cr		.0		7.1		7.1
N Total Money Outflows Dr	110.7		417.1		527.8	
P Total Money Inflows Cr		110.7		417.1		527.8

In the more detailed tables infra various types of transaction accounts and transactor group accounts show discrepancies. In this table all discrepancies have been absorbed in columns 3 and 4 and in lines J and K.

nize this fact. We shall presently increase the number of transactor groups from two to eleven and the number of types of main money circuit transaction from six to fourteen.

Transactions in the main money circuit in 1942 totaled nearly \$530 billion, more than three times the gross national product. The one-sector equation of exchange approach would suggest only the kind of detail for this total that is shown in column 5 or column 6, i.e., it would omit all detail by transactor groups. Also the one-sector equation of exchange approach, since it concentrates on global totals, suggests a question about the meaning of line L, column 1, as a part of the main money circuit. Should an increase in the cash balances of one transactor group, if offset by a decrease in those of another, be counted as a moneyflow? We propose to answer this question in the affirmative. The ground for including such shifts in cash holdings in the main money circuit is partly their economic significance. We shall find that shifts in cash balances from one transactor group to another, when related to certain other transactions, may have an important bearing on business fluctuations. But there is a further reason for counting cash balance changes as main circuit moneyflows. We shall see that these changes enter into the circuit in precisely the same way as certain other items that we must clearly count as moneyflows.

Table 2 lumps together on lines J and K a miscellany of nonfinancial transactions, taxes, gifts, insurance premiums, etc., and various debt and credit transactions. Thus increments in portfolios and decrements in debts are among the components of the outflows recorded on line J, and decrements in portfolios and increments in debts among the components of the inflows on line K. Some economists have attached great separate significance to hoarding and dishoarding, i.e., to an increase in cash balances such as that shown on line L, column 1, considered without relation to the debt and credit transactions included in lines J and K.

Now the significance of hoarding and dishoarding presumably has to do with money considered as a storehouse of value. It has often been said that in our present economy there are various substitutes for money; substitutes for money are particularly important when money is considered as a storehouse of value. While we shall argue that adding to or drawing down one's claims on this storehouse is important, we shall argue also that we must not talk in terms of the accumulation and decumulation of cash balances alone, but rather in terms of the accumulation and decumulation of what we shall call loanfund balances, i.e., cash balances and various other balances related to them. In this connection

we shall have occasion to consider the relation between hoarding and liquid saving.

Those who have emphasized the significance of cash hoarding have often had in mind hoarding in some global sense, i.e., hoarding by the economy as a whole. Under modern conditions this presumably does not mean a net increase in cash balances for all transactors, but rather such an increase for all transactors except the banking and monetary system, or a net increase in the currency and deposit liabilities of the banking and monetary system. We propose to inquire whether, in any significant sense, there can be such a thing as hoarding, or rather such a thing as a loanfund equivalent of hoarding, for the economy as a whole.

Such a summary statement as Table 2 not only fails to disclose many interesting details of moneyflows; it also lumps together items not all of which are clearly suggested by the stub captions. Line M, column 4, is a case in point. The entry here represents the net increment in the cash balances of all transactors other than households and the banking and monetary system, \$14.3 billion, minus the net increment in the currency and deposit liabilities of the banking and monetary system, \$21.4 billion. We shall of course separate these increments in the more detailed accounts. At first thought we might expect the difference between them, \$7.1 billion, precisely to offset the entry on line L, column 1. It obviously would if total cash balances of households and all other nonbank transactors precisely equaled the currency and deposit liabilities of the banking and monetary system. But the two entries differ by some \$100 million. We shall inquire into the cause of this discrepancy in Chapter 8. Suffice it to say here that the disparity between line L, column 1, and line M, column 4, is mainly the result of the fact that transactors do not all record their moneyflows according to one uniform and self-consistent set of accounting rules.

The financial statement for households in columns 1 and 2 is comprehensive, although since only six types of transaction are recognized, it gives little detail. Household money inflows include nearly \$80 billion in payrolls; nearly \$7 billion in interest and dividends; over \$15 billion in net owner takeouts, and nearly \$10 billion of other sources of money. Household expenditures on commodities and produced services amount to nearly \$70 billion, on interest to a billion and a third, and on the cash pay of domestic servants, etc., to a little over a billion. Other dispositions of money, however, were a substantial item — nearly \$32 billion. The increase in cash balances (we may think of this for the time being as the balancing item in the account) amounted to \$7 billion.

The first three items of household moneyflows are components of national income. In fact, they represent substantially all of national income, considered as a total of distributive shares, that takes the form of actual moneyflows to households. Total household money inflows may be designated — to paraphrase Department of Commerce terminology — ‘personal income payments in cash’. Since this total is on a moneyflows basis it differs appreciably from the Department of Commerce total, as we shall see shortly.

The financial statement presented for other transactors in columns 3 and 4 covers such a heterogeneous group of operations that it is difficult to analyze. We shall presently replace it with separate statements for ten transactor groups. But we may here pause to note the following points. This statement is what the accountant calls a ‘combined’ or ‘unconsolidated’ statement. Hence, when products are sold by one business enterprise to another, the transactions appear both as inflows on line H, column 4, and as outflows on line G, column 3. The item, customer moneyflows, line H, column 4, consists almost entirely of business operating revenues, the operating revenues of government enterprises such as the Post Office, and revenue received by the rest of the world a/c of United States imports. It is a familiar type of business financial statement item. On the other hand, the amounts spent by transactors as customers entered on line G, column 3, represent an unfamiliar kind of item from the viewpoint of an ordinary business operating statement. They include out-of-pocket expenditures on commodities and produced services regardless of the character of their use by the purchaser. The cost of merchandise purchased for resale by distributors will be entered here; but so also will the cost of new equipment that is chargeable to capital account. When we come to the detailed transactor group moneyflows statements, we shall find that this type of statement of business operations differs markedly from an accrual basis statement.

#### 4 *Two Economic Perspectives*

Since Table 2 presents a picture of transactions during 1942 on a moneyflows basis, it excludes an important class of nonmoney-payment transactions invented by accountants or economists. The national income and product accounts, in contrast, include nonmoney-payment accrual items and various forms of imputed income.

It is tempting to think of our economy as if it were always viewed from the same angle, to overlook the fact that economists sometimes see our economy in one perspective and sometimes in another.

When we use such concepts as wealth, production, consumption, savings, and money in economic analysis, we necessarily imply a financial statement picture or pictures of our economy.<sup>8</sup> The task of drawing up and interpreting these pictures is something like that of making and reading maps. The difference between the moneyflows accounts and the national income and product accounts may be compared with the differences involved in different kinds of map projection. Both the Mercator map and the ordinary (polyconic) map have their special advantages but we ought not to shift from measurements on the one to measurements on the other without warning. Nor should we shift from statements on an accrual and imputation basis to statements on a moneyflows basis without warning.

If the earth were flat we would not have to worry about the difference between a Mercator map and a polyconic map. And if only our economy were simpler there might be no occasion to distinguish the moneyflows perspective from the accrual and imputation perspective. But as it is we must recognize that some fundamental economic concepts belong to one economic perspective; some to the other. We must not treat our economy as if it were flat.

A concept such as the income velocity of money is essentially a hybrid, and should be clearly labeled as such. It is a ratio, not of incomparables, but of measurements taken from different economic perspectives. It relates an accrual and imputation measurement, national income, and a cash measurement, currency and deposit liabilities of the banking and monetary system. The computation of an income velocity of money may fairly be compared with the computation of a ratio between a measurement made on a Mercator map of Greenland and one made on an ordinary polyconic map (when the scales of the two maps are equalized at the equator). The resulting ratio can doubtless be given a definite interpretation and it may prove to be a useful computation, but its interpretation must clearly be highly involved.<sup>9</sup>

Downright confusion can result from a mixing of perspectives. The

<sup>8</sup> Cf. National Wealth and Income — An Interpretation, 30 *Journal of the American Statistical Association* 377-86.

<sup>9</sup> Technically there is no mixing of perspectives in the ratio of gross national product purchased (excluding imputed items) to total cash balances of nonbank transactors, or in the ratio of personal income payments in cash to total cash balances of household transactors. However, as we shall explain more fully in Chapters 4 and 5, the money settlements required for gross national product purchases do not all take place in the same fiscal period as the purchases and the gross cash pay in personal income payments in cash includes rather more than take-home pay. We shall not have occasion to use either of these ratios in this study.

personal saving of the national income and product accounts is an accrual and imputation concept. If one seeks to visualize personal saving as a total of components, starting with the increments in household cash balances and portfolios and the decrements in household debts, one will shortly find oneself in a quagmire of technical difficulties. Yet it is natural to wish to relate gross national product purchases to changes in the cash balances of the various economic sectors, in trade credit, in the portfolios of financial institutions and of households, and in our internal debt structure. The moneyflows accounts are adapted to serve precisely this purpose. When one attempts to trace such relationships in the accrual and imputation perspective he encounters serious difficulties at least with the data now available.<sup>10</sup>

When we consider national income as a sum of distributive shares, something like one-sixth of the total consists of accrual and imputed items. Because accrual items are a substantial fraction of national income it is difficult to construe this total as a sum of items we can visualize concretely. Probably for this reason in part it has been deemed advantageous to conceive another total, personal income. We can more closely approximate this total from the household statement in Table 2. In 1942, according to the Department of Commerce, personal income amounted to some \$122 billion. Lines B, D, and F of column 2 total \$101 billion. All of this is personal income in a money income sense; and our more detailed accounts disclose about six billion more of personal money income (included in line K, column 2). The \$15 billion difference between total personal income and personal money income is largely a matter of accrual and imputed items; the Department of Commerce total includes pay in kind and unincorporated business savings. But there are various items (e.g., life insurance benefits) not included in personal income that we count as household receipts.

National income may be considered either as a total of distributive shares or as total net national product,<sup>11</sup> but the net national product is also a total it is difficult to visualize in concrete terms. In this respect gross national product is much easier to handle conceptually. A large part of this total is accounted for by customer moneyflow expenditures for goods and services (final purchases only) and instalments to contractors for new construction (included in line J of Table 2). Household

<sup>10</sup> On these difficulties see Daniel H. Brill, *Measurements of Savings*, 35 *Federal Reserve Bulletin* 1310 ff.

<sup>11</sup> Net national product is here used in the sense commonly attributed to it before 1947. Current Department of Commerce usage makes net national product equal to total distributive shares plus indirect taxes and certain other adjustments.

Table 3

Relations between the Moneyflows Accounts and the National Income and Product Account in 1942 (Billions of Dollars)

	National Income & Product (1)	Money- flows (2)	Differ- ence (1) mi- nus (2) (3)	Chief Accrual and Imputation Items in Column (1)		
				Amount (4)	Nature (5)	
<b>DISTRIBUTIVE SHARE SIDE OF THE ACCOUNTS</b>						
<i>National Income</i>						
A	Wages & Salaries . . . . .	81.7	79.0 <sup>a</sup>	2.7	2.4	Imputed value of food, clothing, & shelter furnished employees
B	Supplements to Wages & Salaries . . . . .	3.0	2.3 <sup>a</sup>	.7	.5	Govt. contributions to Social Insurance funds plus payroll tax accruals minus collections
C	Income of Unincorp. Enterprises plus Inventory Valuation Adj. . . . .	22.7	15.1	13.0	1.9	Imputed net rent
D	Rental Income of Persons . . . . .	5.4				
E	Corporate Profits Tax . . . . .	11.7	7.6 <sup>d</sup>	4.0	4.0 <sup>b</sup>	Excess of tax accruals net of refunds over tax collections
F	Dividends . . . . .	4.3	4.3	-1	-1	Dividends received by endowments & unincorp. businesses
G	Undistributed Corp. Profits Plus Inventory Valuation Adj. . . . .	3.9	.0	3.9	3.9	Retained earnings
H	Net Interest . . . . .	3.9	1.6 <sup>c</sup>	2.3	2.3	Net imputed interest
J	Total National Income . . . . .	136.5	110.0	26.6	26.1	
<i>GNP Items not in National Income</i>						
K	Indirect Business Taxes . . . . .	11.8	11.5 <sup>d</sup>	.3	.3 <sup>b</sup>	Excess of tax accruals net of refunds over collections
L	Business Transfer Payments . . . . .	.5	.1 <sup>e</sup>	.4	.4	For bad debt reserves
M	Capital Consumption Allowances . . . . .	9.9	.0	9.9	9.9	Amount accruing
N	Statistical Dis- crepancy . . . . .	1.1	.0 <sup>f</sup>	1.1	.0	
O	Subtotal, J through N . . . . .	159.8	121.5	38.3	36.7	
<i>National Income Item not in GNP</i>						
P	Subsidies Minus Current Surplus of Govt. Enterprises . . . . .	.2	.9 <sup>g</sup>	-.7	-.7 <sup>b</sup>	Here estimated to be the surplus accruing
Q	GNP (line O minus line P) . . . . .	159.6	120.6	39.0	37.4	As above
<b>FINAL PRODUCT SIDE OF THE ACCOUNTS</b>						
<i>Personal Consumption Expenditures</i>						
R	By Households <sup>h</sup> . . . . .	81.8	77.1 <sup>j</sup>	4.7	4.8	Imputed food, clothing, fuel, & financial services
S	By Nonprofit Institutions . . . . .	1.5	1.3 <sup>j</sup>	.2	.2	Institutional depreciation
T	By Security & Realty Firms et al . . . . .	1.8	1.8 <sup>j</sup>	.0	.0	
U	For Imputed Rent . . . . .	5.8	2.2 <sup>j</sup>	3.6	1.2 1.9	Depreciation Net imputed rent
<i>Other GNP Expenditures</i>						
V	New Pvt. Residential Construction . . . . .	1.5	1.4 <sup>j</sup>	.1	.0	
W	Other New Pvt. Construction . . . . .	1.8	1.7 <sup>j</sup>	.1		
X	Other Pvt. Domestic Investment . . . . .	6.1	6.3 <sup>j</sup>	.2	m	
Y	Govt. Expenditures on GNP . . . . .	59.7	62.2	-2.5	n	
Z	Rest of the World . . . . .	-.2	.1	-.3	p	
a	Gross National Product . . . . .	159.6	154.0	5.6	8.2	As above

expenditures under these heads exceeded \$70 billion in 1942. Other household gross national product expenditures for gross cash pay and interest (lines A and C, col. 1) and for gross cash rents and miscellaneous items (included in line J) bring the total up to about some \$80 billion. Most of this total can be readily identified in the detailed moneyflows account we present below for households. But there are problems in separating out the final purchase expenditures in case of some types of household transaction and much more extensive problems of this nature for other transactors. When we resolve these problems in Part II, we shall find that in 1942 gross national product purchases by all transactors totaled nearly \$155 billion. Total gross national product amounted to just under \$160 billion. During the seven years under observation all except some three to five percent of gross national product involved moneyflows.

We shall take up the relations between moneyflows and gross national product in Chapter 9. They are outlined in Table 3; 1942 is again taken as an illustrative year. The stub follows somewhat closely that in the *Survey of Current Business*, July 1947 Supplement, Table I. The De-

#### Footnotes to Table 3

<sup>a</sup> Directors' fees are excluded from the entry A(1) and included in the entry B(1). In the moneyflows accounts they are part of gross cash pay. B(2) appears in the moneyflows accounts mainly as a component of taxes collected from various employing sectors.

<sup>b</sup> Residual estimate.

<sup>c</sup> The item in the detail underlying the moneyflows accounts that most nearly corresponds to H(1) is interest receipts of households and government, \$3.1 billion, minus interest expenditures of government, \$1.9 billion, plus interest receipts of certain noncorporate businesses and nonprofit institutions, \$0.4 billion.

<sup>d</sup> This appears in the moneyflows accounts as a component of taxes collected from various sectors.

<sup>e</sup> In the moneyflows accounts this item appears as public purpose payment expenditures by private sectors other than households.

<sup>f</sup> The statistical discrepancy most nearly comparable with that in the GNP account is that in the national account of customer moneyflows. In 1942 this was \$3.4 billion.

<sup>g</sup> Federal cash subsidies to farms and other businesses.

<sup>h</sup> Excludes imputed rent, line U.

<sup>j</sup> In the moneyflows accounts a single figure is shown for the GNP expenditures of each sector. The total for all sectors except government and the rest of the world is here analyzed to provide a comparison with the Department of Commerce figures. T(2) reports landlord purchases of household items. U(2) reports out of pocket expenses of owner occupants for their homes (mainly repairs, mortgage interest, and real estate taxes). Household expenditures for residential construction are included in line V.

<sup>k</sup> Less than \$50 million.

<sup>m</sup> In the moneyflows accounts Mint purchases of silver and additions to our monetary gold stock from domestic production are treated as GNP expenditures by Banks and U. S. Monetary Funds. They are included, therefore, with other private domestic investment on line X, column 2. In the Department of Commerce accounts, Mint purchases of silver are considered to be government expenditures on GNP, and the net domestic production of gold is treated as a GNP expenditure by the rest of the world.

<sup>n</sup> In the moneyflows accounts government purchases of gross national product are estimated directly. The estimates used in the Department of Commerce's national income and product accounts for the Federal government are arrived at by deducting nonfinal-product-purchase items from expenditure totals. Differences in the year to which a given purchase is assigned (purchases may appear in the moneyflows accounts earlier or later than in the national income and product accounts) are the chief explanation why line Y, column 2, is greater than line Y, column 1 in 1942.

<sup>p</sup> Line Z, column 2, is greater than line Z, column 1, because of a conceptual difference explained in the text.

Because of rounding columns may not precisely downtown and cross total.

partment of Commerce figures<sup>12</sup> are entered in column 1. Figures from the detailed moneyflows accounts are entered in column 2. Columns 4 and 5 give the size and nature of the chief accrual and imputation items. The differences between columns 3 and 4 are due in part to small imputation or accrual items omitted from columns 4 and 5, and in part to minor differences in the basic estimates and to technical difficulties in fully reconciling the two perspectives.

Although in general we follow somewhat closely the Department of Commerce definition of gross national product in identifying final product expenditures in the moneyflows accounts, some conceptual modifications have seemed advisable. One of these that stands out clearly in Table 3 does not affect the two GNP totals on line a, but does affect the part of gross national product purchased by the rest of the world (line Z) and the parts purchased by other sectors. This conceptual difference arises from the handling of international cash transfers. The largest item of this type in 1942 was international aid advanced in the form of a cash grant. In the Department of Commerce national income and product accounts this appears as a GNP expenditure by the Federal government; in the moneyflows accounts such aid is shown as a transfer expenditure by the Federal government and as a transfer receipt by the rest of the world, and goods and services to the amount of such aid are included in final product expenditures in the United States by the rest of the world. There are analogous differences between columns 1 and 2 in connection with other international cash transfers.<sup>13</sup> Our treatment of these items seems more revealing.

It has sometimes been assumed that to move from the accrual and imputation perspective to the moneyflows perspective one need only omit transactions in kind from the computation of national income or of gross national product. Table 3 shows that, for the gross national product, this is an ambiguous procedure. When we look at the distributive share side of the account, we find in column 2 a total some 24 percent less than gross national product. When we look at the final product side, we find a total, line a, column 2, only some three to five percent less than gross national product. A similar but somewhat more complicated situation prevails in the case of the national income account. We shall attempt to find a way to correlate the gross national product account and the moneyflows accounts in Chapter 9.

<sup>12</sup> It has not been possible in this study to take account of the revisions made in the Department of Commerce figures since 1947.

<sup>13</sup> International aid extended in kind under the lend-lease program is treated in both sets of accounts as a Federal GNP expenditure.

### 5 *Does Money Flow like Water or like Electricity?*

Up to this point we have examined a very condensed form of the moneyflows accounts for an illustrative year and have contrasted this approach to the study of the money circuit both with the equation of exchange approach and with the accrual and imputation perspective. We contend that the main money circuit as we define it includes all moneyflow transactions that play a substantive part in over-all economic adjustments. But this does not mean that our accounts — particularly the condensed version of Table 2 — disclose anything like all the details of moneyflows that are needed for economic analysis. Nor does it mean that the economic analyst can be satisfied with moneyflows information alone. On the contrary, there is need in addition for separate price and physical volume measurements; and we have insisted that both the accrual and imputation perspective and the moneyflows perspective are essential for an understanding of our economy.<sup>14</sup>

The two contrasts we have drawn help to characterize our moneyflows accounts, but they do not give any hint of their interpretation. It has often been said that the equation of exchange is quite colorless: it connects four variables in a functional relation but does not tell us which variables are active and which passive. However, the equation of exchange approach has frequently been combined with something that is not so colorless. It has been customary, at least since Herbert Spencer, to portray the money circuit in terms of an hydraulic analogy.

This analogy likens the money circuit to a system of reservoirs and connecting conduits (pipes or canals). It assumes that money resembles water in taking an appreciable time to flow around the circuit and that, in theory at least, one can trace the progress of a particular dollar from one instant to another and from point to point in the circuit.

We will urge in Chapter 12 that the hydraulic analogy has fostered a number of serious misconceptions concerning the nature of the money circuit, and will suggest comparing that circuit with an electrical circuit instead. The electrical analogy is by no means complete, but it is essentially as complete as the hydraulic analogy and it avoids the hydraulic misconceptions. In this electrical analogy the reservoirs become batteries and the conduits become wires. A major advantage of an electrical over

<sup>14</sup> We do not imply that these two perspectives are the only ones possible. Various intermediate views of the economy can readily be conceived. The distinction between the cash and the accrual basis is one of degree. Also there is reason to believe that a somewhat more highly developed accrual basis than that of present accounting conventions could and perhaps should be devised.

an hydraulic analogy is that the velocity of an electric current is so great that for most practical purposes one can assume transmission to be instantaneous. There are some technical difficulties in regarding transmission in the money circuit as instantaneous that we shall consider in Chapters 7 and 12. But on the whole, instantaneous transmission is a far better assumption than a significant transmission lag.

One corollary of the assumption of instantaneous transmission is that we must expect the outflow of net owner takeouts from other transactors, Table 2, line E, column 3, and the inflow of net owner takeouts to households, line F, column 2, to be equal for any accounting period, and similarly with the flows of gross cash pay and interest and dividends and with customer moneyflows. On the assumption of instantaneous transmission an increased outflow from one transactor on account of any type of transaction must be immediately balanced by a corresponding increased inflow to some other transactor. What one transactor spends is a receipt for someone else; what one transactor receives is an expenditure by someone else.<sup>15</sup>

But this is only half the story. It asserts that in general we may expect the type of transaction accounts to be approximately in balance. We may expect transactor accounts also to balance because each transactor statement is based on the double entry system. Thus a cash purchase by a household transactor means a debit to his customer moneyflows account and a simultaneous credit to his cash account.

Now moneyflows accounting is more complicated than ordinary business accounting. Such a statement as Table 2 is based on a quadruple entry system. We must recognize that the illustrative household cash purchase involves, as well as the household double entry, another and approximately simultaneous double entry for some business enterprise, a credit to customer moneyflows and a debit to cash. In our system of moneyflows accounts it takes four entries, two debits and two credits, to record each transaction.

<sup>15</sup>The qualifications that attach to the assumption of instantaneous transmission are not materially affected by the length of the fiscal period, whether annual, quarterly, or monthly. The nature of these qualifications can be indicated in general terms if we refer to the fact (noted in the next paragraph) that each transaction implies a quadruple entry, i.e., two pairs of entries. If P and R are the parties to any transaction, the debit and credit entries on P's books can fairly be regarded as synchronous, as can also the debit and credit entries on R's books. But the pair of simultaneous entries on P's books and the pair on R's books may not be synchronous. We shall find that the effects of such a difference in timing of entries are largely confined to the national cash balance account and the national book credit (trade receivables and payables) account. No effects on other accounts will be discernible in our estimates.

In terms of the electrical analogy, because velocity of transmission through the conduits (wires) is considered to be very great, substantially the entire stock of nonbank cash balances is to be thought of as always located in the reservoirs (batteries). Thus what has been called the 'velocity of money' becomes preponderantly a matter of the rate of turnover in the reservoirs. This leads us to doubt the wisdom of the term 'velocity of money', for it seems to imply that transmission is not instantaneous, that most of the money outside the banking and monetary system is in the conduits (in circulation), not in reservoirs (storehouses of value), and that the ratio of moneyflows to cash balances can be taken as a measure of conduit velocity. We much prefer the term 'turnover'.

If money took time to flow it would be reasonable to think of active cash balances as money in the conduits and idle balances as money in reservoirs. But if the process of making a money settlement is substantially instantaneous, the amount of money required as means of payment, i.e., tied up in the payment process, must be extremely small. Active cash balances cannot be like water in the conduits. In Chapter 11 we take up the problem of distinguishing between active and idle balances.

The hydraulic analogy suggests that increases and decreases in the volume of moneyflows are brought about by increasing and decreasing the quantity of money in the conduits. We contend in Chapter 12 that this view misconceives the nature of the discretion transactors have over their moneyflows, and we tentatively advance another explanation of cyclical variations in moneyflows which we call the discretionary hypothesis. Chapter 13 is largely concerned with the implications for monetary and credit policy of the social accounting approach to the study of moneyflows and of the discretionary hypothesis.

One difficulty with the hydraulic analogy is that it suggests relatively fixed lags in moneyflows, lags of a mechanical nature dependent upon the velocity of flow through the conduits (pipes or canals). Just as the crest of a flood reaches Pittsburgh days and hours before it reaches Cairo, so, according to this misleading analogy, an increment in, say, the gross cash pay outflow from other transactors may be presumed to precede a resultant increment in household customer money outflows by an interval, significant for understanding business fluctuations, that is fixed by the conduit velocity of money.

We quite agree it is desirable to seek to discover lags in moneyflows. But we deny that we are likely to find significant mechanical lags in such types of transaction as gross cash pay and customer moneyflows deriv-

able from the conduit velocity of money, and we reiterate that the functional relationships among economic variables portrayed in Table 2 are accounting relationships involving approximately synchronous pairs of debit and credit entries.

### 6 *Patterns for Economic Impact Analysis*

In current economic analysis an important tool has come to be patterns that can be expressed as equations relating various economic variables. Two sharply different types of pattern should be clearly distinguished; we may call them habit patterns and accounting patterns.<sup>16</sup> The latter type asserts an equality between a debit total and a credit total. The former are psychological or habitual in nature in that they depend upon trade practices, established legislative and administrative procedures, consumers' buying habits, etc. As an illustration of this type of pattern we may cite the 'consumption function'. Opinions are likely to differ widely concerning what equation best describes such a pattern. The pattern may or may not involve time lags.

As an illustration of an accounting pattern we may cite the equality between gross national product considered as a total of sources of funds (employees' compensation, 'net interest', dividends, entrepreneurial net income, inside funds, etc.) and total final expenditures (on consumption, on gross private domestic capital formation, on net exports, and on government services). In this type of pattern there is room for disagreement, too, but the range of permissible disagreement is somewhat narrowly confined. All the variables in the equation are approximately synchronous. The equation, an accounting balance of debits and credits, is really a summing up of the journal entries representing individual transactions. Economists may differ about the precise list of transactions to be used in defining gross national product; they should concur in the proposition that the journal entry for each transaction consists of a debit and an equal, opposite, and synchronous credit.

If one seeks lags in such moneyflows as gross cash pay and customer moneyflows, he will do well to look for habit patterns. And if he is interested in the velocity of money in this connection he will be well advised to investigate the degree to which transactors' habits affect the extent and nature of the control they exercise over their cash balances.

Accounting patterns have a special advantage for economic analysis. The economic variables they link together in equations may fairly be

<sup>16</sup> This is not intended to be a complete catalogue of the types of equation appropriate in model analysis; see, for example, Jan Tinbergen, *7 Review of Economic Studies* 75.

characterized as independently measurable empirical magnitudes.<sup>17</sup> Yet because they are based on double entries for individual transactions, the equalities they assert are firm and objective. When moneyflows measurements are approached from a social accounting viewpoint, they can be made to yield a good many such patterns, one for each transactor group into which the economy is divided and one for each type of transaction account the financial statements for various transactor groups employ. Table 2 gives us eight patterns, the financial statements for two transactor groups and six type of transaction accounts.<sup>18</sup>

The number of accounting patterns yielded by moneyflows estimates can be increased either by subdividing transactor groups or by a more detailed classification of transactions (and of what we call loanfund-balance accounts).<sup>19</sup> We shall increase the number of accounting patterns from eight to 27 — eleven transactor group statements, fourteen national type of transaction accounts, and three imperfectly separated national loanfund balance accounts that divide one type of transaction into three subtypes. Theoretically national income accounting can be similarly, if not quite as extensively, elaborated. But from the current national income and product accounts the accounting patterns that can be derived are somewhat fewer. The annual estimates of the Department of Commerce provide nearly all (but not all) of the detail needed for a Table 2 in the accrual and imputation perspective expanded to show five sectors in the box and nine types of transaction in the stub.

Moneyflows accounting patterns are especially well adapted for ana-

<sup>17</sup> Except where lack of data for such an equation has made it necessary to resort to estimating one variable as a residual.

<sup>18</sup> Any one of these eight is deducible from the other seven.

<sup>19</sup> The advantages of increasing the number of accounting equations must be balanced against the accompanying disadvantages. When we expand Table 2 by making the box and stub more detailed, the number of accounting equations increases with the sum of the number of items in the box and the number in the stub. The greater detail has the disadvantage of greater complexity and cumbersomeness. Also the mathematical model analyst will probably be impressed with another disadvantage: The number of unknowns in the model increases much more rapidly than the number of accounting equations. Each (nonrecap) cell in the table (unless it can be counted on to show a zero every year) represents an unknown. Expanding Table 2 gives rise to an arithmetic increase in the number of accounting equations, a geometric increase in the number of unknowns. This multiplies the model analyst's problem of supplying enough habit pattern equations to make his model determinate or else of resorting to exogenous variables.

The advantages of increased detail lie partly in the fact that the new accounting equations yielded are all relatively firm, partly in adding to the meaning of the accounts and in facilitating their interpretation to the extent that the increased detail is well conceived.

lyzing business conditions. Not only are they stable accounting balances of summations of the equal double journal entries that portray individual transactions, but the transactions on which they are based are moneyflows transactions. National income patterns include various accrual and imputed items. Many of these represent transactions a transactor enters into with himself; for purposes of tracing the impact of one transactor group upon another such items are not so clearly relevant. Moneyflows accounting patterns may be said to portray relationships among transactions that have been selected for their special relevance in economic impact analysis.

In Part II we shall consider the various types of moneyflows accounting pattern, both the type of transaction accounts and the financial statements for transactor groups.

Part II

USING FINANCIAL STATEMENTS  
TO MEASURE MONEYFLOWS

