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# A Study of MONEYFLOWS in the United States

# A Study of Moneyflows in the United States

MORRIS A. COPELAND
*Cornell University*

*These then are the hypotheses on which I am proceeding. But I take it to be useful to present a convenient notation for expressing these magnitudes, and also for expressing other magnitudes which (since they were not fully expressed in the book I addressed to Zeuxippus) should not be left wandering about through failure to discuss them here. Archimedes,* PSAMMITES, *about 230 B.C.*

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TO ALEXANDER MEIKLEJOHN

*Inspiring Prexy, Exacting Teacher, and Dear Friend*

# Introduction

This is an extraordinary inquiry. It is the product of a lifetime of probing into the meaning and significance of money, and of delving into and improving statistical material essential to analysis of how money does, in fact, flow through our economy. Years went into the creation of the grand design of this study so that the vast range of statistical materials could be incorporated into summary totals. Those of us who have been privileged to know Morris Copeland through his lifetime will find that every page of this pioneering manuscript evokes echoes that reach long into the past — echoes from his earlier absorption with accounting and his insistence that studies of national income would never yield their full contribution to understanding until they were subjected to the discipline of the accountant's approach; echoes from his earlier sojourn in the Division of Research and Statistics of the Federal Reserve Board, where he undertook to fill in the equation of exchange from empirically derived data; and echoes from his days as Executive Secretary of the Central Statistical Board where he operated so effectively to improve the quality, the comparability and the coverage of American economic statistics, and thus make it possible for others, as well as himself, to undertake a study as elaborate as this. There are other echoes also in the manuscript, more personal ones, of Copeland's preoccupation with theoretical formulations and his insistence that they be subjected to empirical verification.

We have available, finally, for all of us to ponder, this intricate study of moneyflows in the U. S. during the years 1936-1942. To those of us who have followed the study in its inception and progress, the great achievement is that Copeland has "pulled it off." He has shown that the statistics do exist, on an annual basis at least, to support a construction of moneyflows for the entire economy of the U. S. by major sectors and by significant categories.

The system he has developed incorporates not only current productive activity and the distribution and transfer of income, but also those transactions which help finance income, transfer and production flows. The moneyflows system enables economists for the first time to view an integrated picture of the economy where the functioning of our monetary and credit system can be studied in conjunction with other economic developments. It demonstrates that with judicious and imaginative handling available statistics permit economists to go further than most of us

had thought possible in constructing a sweeping yet detailed picture of economic behavior. Over the past decade, we have become increasingly familiar with the application of accounting to the analysis of economic problems. Also, the use of GNP "models" in explaining relationships between economic variables has become widespread. Copeland's work will expand the frontier of "model building."

This, in itself, justifies not only the outside resources put into the study, but the major effort it represents in terms of the author's professional life. Taken by itself, with no subsequent development of the statistics, no continuing construction of the accounts for subsequent years, it yields a rich dividend, not only in the improved analytical treatment of segments of our financial statistics, e.g., its treatment of the impact of Federal expenditures on the economy, but also in our understanding of the actual role of money in our pecuniary economy. Future teaching of cyclical swings in money and banking cannot help but be affected by Copeland's "bulls," "bears," and "sheep."

Far more important is the promise of results from continuing availability of these estimates of moneyflows and from the uses that may be made of them, the contributions to our understanding that may be expected as they become perfected. In our generation, we have witnessed the rich contribution to economic understanding that flowered from two somewhat analogous undertakings following the first World War. I refer to the development of annual estimates of national income, pioneered by Wesley Mitchell through the National Bureau of Economic Research, and the annual Balance of Payments estimates, pioneered by John Williams in the Harvard *Review of Economic Statistics*. Does this new pioneering approach in the area of moneyflows offer the same promise?

The answer, to my mind, must be sought in two directions. First, we must face frankly the inescapable hurdle that is interposed by the complexity of the statistical analysis. This is not an easy study to read. It makes use of a technique and a vocabulary that must be mastered before it will yield understanding. While it can be maintained that the structure of the moneyflows analysis is not more complex than the present structure of national income accounts, this consideration does not dispose of the issue. The present elaborate structure of our national income accounts evolved gradually from estimates based on much simpler concepts, and in the course of its development carried along the understanding and interest of a wide host of scholars who faced no great intellectual or technical hurdle when first confronted with the earlier estimates. The question remains, therefore, whether the new analysis, for the first time presented in "Moneyflows" in all its complexity, will find its audience

only among the cloistered few, or whether it will "take," in the sense that teachers of money and banking in general will feel an obligation not only to call it to the attention of their students but to train them to the point of familiarity with the technique.

Second, we must ask: "What contribution can this technique make to our analysis of emerging problems?" "How suitable is it as a tool to help in policy decisions such as those, for example, which the Federal Reserve System is required to make?" In this area, there are already some dividends to report. Resort to the moneyflows technique is enriching our knowledge of flows of funds through the investment markets into the economy, and, conversely, of the flows of savings into investment. It may well become an indispensable tool in the analysis of problems of debt management. The answer will depend, to a considerable degree, on the extent to which the computations, based on relatively firm data, can be brought to a current basis, i.e., the amount of lag that can be eliminated, and also on the extent to which the statistics can be established on a semi-annual or even quarterly basis.

Wesley Mitchell is said to have remarked that the moneyflow system might be as popular with economists of the next generation as GNP is with economists of this generation. I hope that he was right, for there is little doubt in my mind that the structure of analysis developed by Morris Copeland should play an important role in the development of economic theory applicable to our contemporary society.

WINFIELD W. RIEFLER

Washington, D. C.,
February 15, 1952.

# Preface

This study is my second investigation of the money circuit in the United States. The reports on the first, which was completed almost twenty years ago, are cited in Chapter 2. That earlier inquiry was conducted along somewhat more modest and conventional lines, more modest because it was so modestly financed, more conventional because I had not yet conceived the approach adopted in the project reported on here.

In that earlier inquiry the rough annual and monthly estimates of the variables in the aggregative equation of exchange that I had developed for a period of years were analyzed to determine probable causal relationships. It was while the work of preparing and analyzing these estimates was in process that I had my first serious encounter with over-all social accounting figures — for an annual (distributive shares) picture of national income had only recently become available. Shortly after this encounter I began to try to put money circuit measurements into social accounting terms. One result of that effort was an estimated consolidated balance sheet for the banking sector (40 *Journal of Political Economy* 20).* Except for the monetary gold stock — data on earmarkings were at that time only in process of being counted as gold movements — these figures agree fairly well with the more recent estimates by Daniel Brill and myself (34 *Federal Reserve Bulletin* 25). Another result was an unpublished memorandum that attempted to fit cash balances into an imaginary set of sector accounts. However, it was not until more than a decade later that I began putting actual figures for sector accounts together on an aggregative basis somewhat along the lines followed here.

Since the present inquiry emphasizes the social accounting approach one other bit of background should perhaps be mentioned. As a graduate student I became intensely interested in the subject of accounting, and that interest led to a study of the cash budget for an individual business enterprise (Seasonal Problems in Financial Administration, 28 *Journal of Political Economy* 793 ff).

When in 1944 the National Bureau of Economic Research invited me to direct an exploratory project to determine what could be done to provide a fuller statistical picture of the money circuit, despite some personal drawbacks, I accepted with enthusiasm. This project was undertaken at

* i.e., Vol. 40, *Journal of Political Economy*, p. 20. It is proposed to use this form of reference to periodicals in the pages that follow.

the request of the Committee for Economic Development and was financed during its first two years (1945-46 and 1946-47) by a generous grant from this Committee. Throughout its progress the project has had the cooperation of and extensive help from the Board of Governors of the Federal Reserve System. Members of the Board's Division of Research and Statistics advised on the planning of the project and the Board provided office space and equipment. After mid-1947 the exploration of the field was continued under the Board's auspices in a special project to construct current statistical measures of the money circuit. Under the Board's generous arrangement it was possible for me to devote part of my time from mid-1947 to the end of 1948 to the preparation of the first draft of this study.

The study presents annual estimates of moneyflows and of cash and related balances for the United States, 1936-42, and attempts a tentative interpretation of these quantitative findings. The estimates take the form of a set of interlocking sector and national accounts. The Board of Governors has made considerable progress with its continuation project; preliminary sets of sector and national accounts are now completed on an annual basis through 1950 and a monthly consolidated balance sheet for the banking sector appears currently in the *Federal Reserve Bulletin*.

It will be obvious to readers that many persons must have cooperated in the conduct of, or have contributed to, the project here reported on. My obligations to the others who have had a part in it are therefore both great and numerous. Grateful acknowledgments are due to more persons than can be named. I am especially indebted:

To Wesley C. Mitchell not only for the unpublished memorandum, cited in Chapter 1, which he prepared for the guidance of this present study but also for wise counsel on many earlier occasions.

To Theodore O. Yntema, who originally conceived and arranged for the project and whose criticisms of an early draft form of the financial statement here adopted were the most useful I received.

To Walter W. Stewart, who introduced me to the subject of economics, who persuaded me as a graduate student to study accounting, and to whom I am indebted for much good advice during the planning stage of this study. My undergraduate exposure to his teaching of economics was brief, but he has probably done much more to influence my thinking on the subject of moneyflows than I am clearly aware of.

To Winfield W. Riefler. He and Stewart were my most valued advisors during the study's planning stage, and I do not know how to divide between them my indebtedness for advice on technical economic and

statistical questions. But even at this stage (I already had some preliminary estimates) it was apparent there would be a large problem of how to present the results. Riefler suggested I should adopt common sense names for the various sectors and accounts, and proposed a reorganization of the order of presentation I had originally tried, one that after various reworkings became the order here adopted.

To Ralph A. Young, both for his encouragement of the project at various stages and for his helpful criticisms. It was in large measure his continuing interest and support that first made adequate provision for the project's completion possible and later led to the arrangements for the continuation study.

To my wife, who helped greatly on the semantic problems involved in the attempt to carry out Riefler's suggestions.

To Daniel H. Brill, Sylvia Edelson, Melvin W. Reder, Paul Kohn, Diane Davis Kirkinis, Walter Rothschild and the other members of my staff. Without their understanding cooperation this study would have been quite impossible. I am particularly indebted to Brill. He became my chief assistant after the project had been under way for two years, caught onto its intricacies with amazing speed, has always been a sympathetic and highly constructive but severe and objective critic, has had a major hand in managing the preparation of the moneyflows estimates and of Appendix A, and now heads a small unit at the Board of Governors of the Federal Reserve System engaged in the continuation study. Mrs. Edelson, Reder, and Kohn were much the ablest of my other professional assistants. Mrs. Kirkinis, my first secretary, though without professional training in the field, proved to have professional talent — a flare for setting up statistical tables and for spotting sour figures. Rothschild prepared the index for this report and carried through a final checking and cross-checking of text, tables, and appendices.

To Arthur F. Burns, Carl E. Parry, Herbert Stein, Clark Warburton, Gardiner Means, Milton Friedman, and others who read and criticized drafts of this book, both those who have been disposed on the whole to go along with what is here called the social accounting approach to the study of moneyflows and those who have been more or less skeptical about it. My debt to Burns is particularly great. His criticisms were my main reliance in the last rewrite of the manuscript, and they were by far the most useful detailed manuscript criticisms I received.

To Martha Anderson, Marie Bulter, Grace Sahm, and H. Irving Forman. Miss Anderson has helped me to improve a great many of my sentences and paragraphs and to make the book more readable. Miss

Butler gave a number of valuable suggestions that have been incorporated in the tabular presentations. Miss Sahm has admirably expressed in terms of a wiring diagram the electrical analogy I here propose for the money circuit. (And I know from previous sad experience with other artists that this was by no means an easy task.) To Forman I am grateful for his straight forward and easily grasped graphic portrayal of major moneyflows estimates.

Since this study attempts to break new ground both in the area of statistical economic measurements and in the area of monetary economic theory, it would be strange indeed if, in spite of the number of checking processes it has been through, there were not a great many errors of one sort or another.

In acknowledging the help of others, and in particular the great contribution of the staff, I have no wish to shirk responsibility for any of these errors. The responsibility for them is clearly mine.

Despite the probability that they will turn out to be numerous, I venture to believe they will not total up to a result that will require in the calculable future a major revision of the general picture of the money circuit here presented.

Perhaps I should add omissions to errors. Various statistical findings — noted in Appendix A — became available too late to be incorporated in this study. They call for a revision of a good many of the details of the picture of the money circuit but it seems unlikely that they will occasion a significant change in its main outlines. Mention should be made, too, of a study that to some extent parallels the present attempt to organize debt and credit information and relate it to gross national product information, Raymond Goldsmith's study of saving and capital markets in the United States. Had some of the results of Goldsmith's study become available a year or so earlier, my task would have been easier.

The reader of this report is sure to find it highly technical, so technical that it may be difficult to relate the parts to the whole. Certainly I make no pretence of being a good expositor. But a major part of this difficulty seems to be inherent in the nature of the inquiry. To help the reader both to relate the parts to the whole and in other ways chapter abstracts are provided. My debt to Carl Parry has been acknowledged in general terms, but not explained. Among other things he not only proposed these chapter abstracts but also prepared a first draft for them.

Morris A. Copeland

Ithaca, N. Y.
February 1952

# Contents

## Abstracts of the Chapters

### 1 *The Project*

This study presents a comprehensive set of annual estimates of moneyflows in the United States during the seven years 1936-42, and some tentative interpretations of these estimates with special reference to monetary theory.

Separate figures are shown for each of a number of broad sectors into which the economy is analyzed, households, industrial corporations, the Federal Government, etc. These figures tell for each of these sectors (1) how much of the gross national product is purchased by the transactors in it; (2) how much of the money for such purchases came from transactions that are part of the process of production, how much from transfer receipts, and how much through financial channels; (3) how much money passed from one sector to another in the form of transfer payments, how much through financial channels; and (4) how the financial flows are related to the changes in each sector's balances of cash, trade receivables and payables, and negotiable instruments and other claims held and outstanding.

The estimates are presented in the form of a set of social accounts for our economy. We will endeavor to show that these social accounts throw new light on the processes of business expansion and contraction and have far-reaching implications for monetary theory.

### 2 *Previews and Preliminaries*

In adopting a social accounting approach to the study of money and moneyflows we shall concentrate our attention on the main money circuit. The aim has been to define this circuit so as to include all moneyflows that play a substantive part in over-all economic adjustments. Main circuit moneyflows in 1942 are estimated at some $530 billion, or more than three times the gross national product.

The main money circuit excludes a large volume of money payment transactions that are mere 'whirlpools at the side of the main flow': money changer transactions, agency transactions, and financial turnover transactions (e.g., the repayment of a loan financed by an offsetting renewal). In 1942 45-50 percent of 'debits to individual accounts' represented such mere whirlpools, in 1937 about 60 percent.

We shall presently distinguish fourteen types of main circuit moneyflow (i.e., fourteen types of transaction). Also we shall presently distinguish eleven economic sectors (transactor groups). But the nature of the main money circuit accounts can be illustrated with two transactor groups, households and all others, and six types of moneyflow. Table 2 (which gives a two by six picture of the circuit for 1942) brings out four major points of contrast between the social accounting approach to moneyflows and the more familiar equation of exchange approach: (1) While both are aggregative, the former does not carry the aggregating process so far as the latter;

the additional detail in the social accounts is extremely useful for economic analysis; (2) In the social accounting approach we are able to show detail for both money inflows and money outflows by transactor groups; (3) There is place in the social accounts for transactions that do not fit into the equation of exchange. Thus there are in the main money circuit in 1942 some $75 billion of transfer payments and other transactions not easily thought of as p x t's; and (4) Accumulations and decumulations of cash balances by themselves are less significant than changes in a more comprehensive item which takes account of trade receivables, portfolios, and debts (net loanfund balances).

Table 3 compares the moneyflows account and the gross national product (or national income and product) account for 1942. In this connection we note: (1) A sharp distinction must be drawn between the moneyflows basis for financial statements here employed (this is a modification of the cash basis) and the accrual basis which is the conventional one for business corporations; (2) The present analysis relates moneyflows to gross (not net) national product; (3) The social accounting approach to the study of money and moneyflows yields a number of accounting equations appropriate for economic impact analysis; all the variables in each such moneyflows equation are substantially synchronous.

3 *Dividing the Economy into Sectors*

Part II is concerned with the kind of social accounts needed to portray moneyflows and cash on hand and related asset and liability balances, and with the annual estimates of the moneyflows and related balance accounts for the various groups of transactors during the seven-year period. Each of the following is a transactor: a business proprietorship, a business partnership, a business corporation, a state, a city, a household, the Federal government.

For such a set of social accounts it is necessary to divide the economy into broad, somewhat homogeneous transactor groups. In the interests of group homogeneity we have to split some transactors in two. Thus we estimate separate accounts for the businesses and for the families of business sole proprietors. And we regard the Federal government's monetary gold account and three other Federal funds not as government but as part of the sector we call banks and U. S. monetary funds (the banking sector). Further we treat the banking sector, the Federal government (apart from its monetary and local government funds), and the rest of the world as if each of these three were a single transactor; i.e., we present a consolidated sector financial statement. But other transactor group statements are combined statements; they reflect both intrasector and intersector transactions. The eleven sectors are briefly defined in a Cast of Transactors.

A more clean-cut and elaborate sectoring of our economy is needed for a study of moneyflows than that which has been customary in the study of national income. It is inadvisable to split transactors in two so frequently; and it is necessary to distinguish a somewhat larger number of sectors. The input-output analysis of Leontief requires a third kind of sectoring. It uses a still larger number of sectors than are distinguished here and it tends to

carry the transactor splitting process even further than ordinary national income and product accounting.

The chapter concludes with a condensed graphic presentation of the moneyflows estimates for the seven years and a preview of the tentative interpretations elaborated in Chapters 12 and 13.

4 *When Moneyflows are Primary Distributive Shares*

Figures for each type of moneyflow can be summarized in a balancing national account, showing the inflows and the outflows for each sector on this account.

Household receipts from four types of moneyflow are primary distributive shares: gross cash pay, cash interest, cash dividends, and net owner takeouts. However, these receipts differ significantly from the corresponding items in the national income account. This is partly due to the exclusion of accruals and imputations, partly to the way the economy is divided into sectors. The moneyflows social accounts show the economy in one perspective, the national income and product accounts show it in another. In both perspectives the economy is viewed as a circuit and many transactions are common to both. But the main money circuit includes a very large volume of transactions that are not part of the two sector circuit of the national income and product perspective.

The reasoning that leads to the inclusion of transactions settled by check in the moneyflows accounts leads also to the inclusion of transactions settled by offset.

5 *Moneyflows and Commodity Flows*

In general the four types of moneyflow considered in Chapter 4 and the four types considered here — customer moneyflows, gross rents, instalments to contractors, and net payments for real estate transfers — reflect product transactions (i.e., transactions that help in organizing production); but the concept 'product transaction' has been given a somewhat technical definition in national income and product accounting. We can go only part of the way toward identifying 'product transactions' through a grouping of moneyflows by type of transaction.

Partly because of the technical definition of 'product transaction' and partly because of the way the social accountant distinguishes between final and nonfinal product expenditures by business, it is something of a problem to relate the moneyflows estimates to estimates of gross national product. But it is essential to identify in the sector moneyflows accounts both final product expenditures and the final distribution among the sectors of the sources of funds derived from final product sales (i.e., the primary distribution). We can give only part of the solution of this problem here. We give the full solution in Chapter 9.

Nearly all household expenditures on account of the eight types of transaction considered in this and the preceding chapter are final product expenditures (GNP expenditures). Most business expenditures under these heads are nonfinal or intermediate product expenditures. In the national income and product accounts the line between final and nonfinal product

business expenditures is not drawn by type of transaction; it is an accrual distinction between charges to capital and charges to current operating accounts.

To make the problem of identifying GNP expenditures in the moneyflows accounts as simple as possible we shall report customer moneyflows and instalments to contractors on a cash-and-book credit basis, i.e., a sale on open account will be reported when made, not when the account is settled. Apart from technical exceptions considered in Chapter 8 other moneyflows will be reported on a cash basis.

If the national moneyflows account for each main type of transaction is to balance, every transaction must be handled in the same way on the books of the two transactors that are parties to it; i.e., there must be over-all accounting uniformity.

6 *The Secondary Distribution and Moneyflows*

The eight types of moneyflows previously considered and five others constitute what we call ordinary (or nonfinancial) receipts and ordinary expenditures. These others are: insurance premiums, insurance benefits, taxes collected, tax refunds, and public purpose payments (charitable contributions, the veterans' bonus, cash subsidies, etc.). In general these five types of moneyflow belong to the secondary distribution (i.e., are 'transfer payments'); but the national income accountant includes corporate income taxes in corporate distributive share expenditures and a part of household tax and insurance premium expenditures in the gross national product expenditures of households.

Anticipating consideration of the fourteenth major type of moneyflow — the flow through financial channels — we take up an illustrative balancing sector moneyflows account at this point.

7 *Ten Statements of Payments and Balances*

The statement of payments and balances is a type of sources and uses statement specially devised to provide measurements of main circuit moneyflows, and to relate them to what we call loanfund balances. Such balances consist of claims, each claim being a loanfund receivable item for the holder and a loanfund payable item for the obligor. For most transactors loanfunds receivable consist of cash, trade receivables, and portfolios.

This chapter considers statements of payments and balances for ten of the eleven sectors. Part One of each statement is the moneyflows account. Part Two gives the cash balance, related balance sheet items, and the computation of the net financial moneyflow (money obtained through financing or money advanced or returned to others).

We are accustomed to thinking of international moneyflows in terms of a balance of international payments exhibit. Our statement for this sector is therefore a very familiar one. However, since we are portraying the moneyflows to and from the rest of the world (rather than to and from the United States), the debits and credits have been reversed. Moreover, since World War II the official balance of international payments exhibit

has been recast to include various imputed items, and we must put it back onto a moneyflows basis.

The statements of payments and balances for other sectors are intersector balance of payments exhibits. While numerous technical changes from the published statements for governments and insurance companies are necessary to bring them into conformity with our standard rules, a familiar pattern remains. Reports for these transactors are customarily presented on what is essentially a moneyflows basis. The statements of payments and balances for business and miscellaneous financial enterprises contrast with but can be derived from the more familiar accrual basis financial statements for such transactors, if sufficient detail is available.

8 *Loanfund Balances*

Financial moneyflows arise out of changes in the claims held by and the obligations outstanding against the various transactors. The claims and obligations can be summarized in a set of national balance sheets. The main types of claim (loanfund) that give rise to financial moneyflows are: currency and deposits; book credit; bonds, notes, debentures, mortgages, etc.; corporate stock; and the monetary gold and silver stocks. Theoretically, total loanfunds receivable by all transactors in connection with each type of claim should equal total loanfunds payable. But we must make allowance for deviations from a uniform scheme of social accounts.

Such deviations are due partly to inadequate data and partly to the conflicting social accounting conventions for different sectors. They are especially important in the national loanfund balance sheet accounts. The three main types of deviation from accounting uniformity are (1) those due to differences in timing of transaction entries; (2) those due to differences in account classification; and (3) those due to differences in the valuations put on claims and obligations.

The financial moneyflows arising from changes in cash balances enter into the main money circuit in the same way as changes in other loanfund balances do. The principal financial moneyflows for the banking sector are those arising from changes in its currency and deposit liabilities, from changes in bank credit (portfolios) and from changes in the gold stock. The financial moneyflows for all sectors can be summarized in a national account of money obtained and money advanced or returned.

9 *Buying the Gross National Product*

To correlate the moneyflows perspective of our economy and the accrual and imputation perspective of national income and product accounting we adopt a set of rules for the classification of the ordinary expenditures of each sector into (a) final product (or GNP) expenditures, (b) transfer items, and (c) others (nonfinal product expenditures). Since we have already determined the recipient sector for each type of transfer expenditure, these rules enable us to distinguish transfer receipts from product transaction receipts. We next compute that part of the value of total final product distributed to each sector. We take this to equal the total product transaction receipts minus the nonfinal product expenditures of the sector.

For households it consists almost entirely of distributive shares; for industrial corporations and business proprietors and partnerships et al it is an inside funds computation.

We can now set up a conspectus of the whole money circuit comprising summary moneyflows accounts for the various sectors (Table 33). This table shows for each of ten sectors (one of them is a combination of Groups VIII and IX):

i) GNP expenditures
ii) Product receipts minus nonfinal product expenditures (a net item)
iii) Net transfer expenditures (or net receipts)
iv) Net money advanced or returned to others (or net money obtained through financing)

Through these summary accounts we can trace where the money comes from to finance an increase in GNP expenditures, and where the unspent money goes when GNP expenditures contract. When the gross national product account is thus seen in its proper place in the money circuit, we can relate GNP transactions — both receipts and expenditures — to changes in cash balances and in the debt and credit structure of the economy, for Item iv resolves itself into just such changes.

10 *The Moneyflows Account vis-a-vis the Cash Account*

A transactor's moneyflows account is a statement of his sources and uses of funds. It must not be confused with his cash account. The moneyflows account includes transactions settled by offset; the cash account does not. Much larger in volume are the technical transactions that are included in the cash account but excluded from the moneyflows account and from the main money circuit. The chief types of technical transactions are: financial turnover transactions, money changer transactions, and agency transactions.

When a transaction appears in both the moneyflows account and the cash account it is as a debit entry in one and a credit entry in the other. The two entries will be synchronous for many such transactions but will not be synchronous for a sale on open account.

Technical transactions are not always reflected in the cash account, or in 'debits to individual accounts'. The volume of technical transactions may vary from one period to the next somewhat independently of changes in the volume of ordinary transactions. But a part of the volume of technical transactions arises from the use of portfolios and debts as money substitutes in the conduct of ordinary transactions.

11 *The Quantitative Functions of Money*

In Part III are offered interpretations — some of them quite tentative — of the moneyflow accounts and the cash and related balance sheet accounts.

A necessary preliminary to these interpretations is a re-examination of the quantitative functions of money, the medium of exchange function and the storehouse of value function. In an economy that is organized through a system of exchange coordination, i.e., through a system of moneyflows, a system of prices, and various related institutions, there is need for a score-keeper or accountkeeper. The important role played by money in this ac-

countkeeping function is considered, also the relation between the storehouse of value function and the accountkeeping function. A revision of the usual hypothesis concerning the evolution of our money economy is proposed.

The Angell-Lutz theory of active cash balances (i.e., of the medium of exchange function) implies a sources and application of funds statement for measuring moneyflows. An elaboration of this theory is offered, which makes the medium of exchange function that of cushioning short term discrepancies between ordinary (nonfinancial) receipts and ordinary expenditures (by short term is meant seasonal and other within-the-year discrepancies and sporadic discrepancies). The storehouse of value function becomes that of cushioning longer term discrepancies between ordinary receipts and ordinary expenditures, i.e., cyclical and secular discrepancies are cushioned through the hoarding and dishoarding of loanfunds.

Portfolios and debts serve to economize the use of cash for both the short term cushioning function and the longer term cushioning function. The use of these balances as money substitutes has long been recognized in connection with the balance of international payments.

Variations in the active cash requirements by kind of business, by size of business, and with changes in general business conditions are considered. The nature of a transactor's discretion over idle balances and over his total ordinary (nonfinancial) expenditures is specified.

12 *Moneyflows and Business Fluctuations*

Our findings up to this point in regard to moneyflows and loanfund balances are summarized in a statement of the five key features of the money circuit. The first two features assert accounting balances. The equations that can be derived from them, together with certain other equations, are offered as a substitute for the equation of exchange. Five important implications of these two features are examined.

The other three features deal with the accountkeeping function of money and the discretion transactors have over their moneyflows and loanfund balances. Attention is directed to two main implications of the accountkeeping function of money and three in regard to transactor discretion.

There is a widely held view that the money circuit resembles an hydraulic circuit and that increases and decreases in the volume of moneyflows can be explained in terms of the resemblances. The hydraulic analogy conflicts with the five key features and their implications in a number of ways. We propose an electrical analogy instead of the hydraulic.

To understand how increases and decreases in moneyflows come about one must clearly distinguish the moneyflows perspective from the accrual and imputation perspective of national income accounting and deal with moneyflows accounts for three or more sectors, preferably more.

A discretionary hypothesis is tentatively offered as an explanation of how fluctuations in moneyflows come about and as one part of an explanation of the business cycle. This hypothesis requires identifying three classes of transactors according to the way they exercise discretion over their ordi-

nary expenditures, and a fourth class as influencing the moneyflows of other transactors (discretion modifiers). The first three classes are nonoverlapping; together they account for all transactors. They are bulls or transactors with whom substantial additions to main circuit moneyflows originate; bears or transactors with whom a substantial volume of moneyflows terminates; and sheep. Sheep are chiefly expansion and contraction amplifiers. The composition and relative importance of these three classes of transactors change from one period to another. A transactor may be a bull at one time, a sheep at another, and a bear at still another. Most of the time during the seven years covered by this study it is possible to identify several sectors as belonging predominantly to one or another of these three classes. Even with the broad transactor groups and annual data their moneyflows patterns are somewhat distinctive.

The fourth class of transactors overlaps the other three. Bulls, bears or sheep may influence the moneyflows of other transactors. The Federal government and the banking sector are important discretion modifiers.

A note appended to this chapter examines further the conflicts between the hydraulic analogy version of the quantity theory and the five key features. A series of theses and antitheses points up these conflicts. The possibilities of a nonhydraulic equation of exchange interpretation of moneyflows are explored. And it is suggested that, as economies become wealthier and more highly industrialized, it becomes less reasonable to assume that changes in the total cash balances of nonbank transactors cause changes in the volume of moneyflows.

13 *The Banking Sector and the Moneyflows of Other Transactors*

The banking sector can substantially modify the way other transactors exercise their discretion over expenditures, but its role as a discretion modifier has often been misrepresented.

The statement of payments and balances for the banking sector shows its ordinary receipts and expenditures to be small but not negligible. The sector handles these transactions with its negative cash balance (currency and deposit liabilities). The rest of the world also formerly did business on a negative cash balance, but its cash balance has recently been positive. Theoretically, other transactors could operate on an overdraft or customer's debit balance basis; but by present law and custom they are required to maintain positive cash balances.

We have presented a consolidated statement of payments and balances for banks and U. S. monetary funds to highlight the relations of this sector to all other transactors. But it is not intended to suggest that banks and U. S. monetary funds always behave like a single transactor. That could hardly be expected. However, a good deal of the influence exerted by this sector on others has become a matter of unified policy under the guidance of the Federal Reserve System. But the Federal Reserve guides rather than controls the banking sector. It exerts its guidance chiefly through buying and selling loans and securities and through fixing the minimum reserves that member banks must maintain.

The banking sector influences other transactors in various ways. Its chief channel of influence is through its participation in financial moneyflows. This participation is two sided. Its main form during an expansion is a concomitant increase in bank credit (portfolios) and in currency and deposit liabilities. The group of transactors whose cash balances are increasing and the group of those whose obligations to banks are increasing are likely to be somewhat different. The first group is ordinarily a very inclusive one; the second has sometimes been a single transactor, the Federal government. The concomitant increases in bank credit and currency and deposits constitute a financial moneyflow from the first (more inclusive) group to the second through the banking sector. There is a converse financial moneyflow during a contraction. In both expansion and contraction the influence of the banking sector on other transactors' moneyflows is not evenly diffused throughout the money circuit but is somewhat selective.

The processes by which moneyflows expand and contract are asymmetrical.

*At or near the trough of a depression* if the banking sector is willing to lend and to lend at low rates, the availability of credit is a condition favorable to a turning point, and the high bond prices accompanying low interest rates may be some encouragement to a more optimistic business psychology. But the banking sector alone cannot initiate a turning point in the cycle, cannot compel any group to borrow and spend.

*During a recovery and expansion* if banks are willing to lend and are seeking customers, those who wish to borrow to finance increased spending will be able to do so, no matter how other nonbank transactors exercise their discretion. The availability of bank credit at relatively low rates can greatly facilitate an expansion of moneyflows.

*At or near the cyclical peak* the banking sector can, through higher rates and higher credit standards, retard the further expansion of moneyflows. And it is possible for credit to become so tight as to induce a downturn.

*During a recession banks,* through still higher rates and/or still higher credit standards, can greatly accelerate a contraction of moneyflows. On the other hand easier credit can retard the contraction up to a point; but by itself it cannot halt the recession.

In addition to this, because of its strategic position in the money circuit, the banking sector influences expansion and contraction of moneyflows through the kind of leadership it exercises in the business world.

The chapter proper concludes with a summary of the tentative discretionary hypothesis.

An appended note considers further the role of international moneyflows in the money circuit of a national economy and comments incidentally on the meaning of a 'return to the gold standard'.

## 14 *Addenda*

In an exploratory study of this kind it is necessary to be selective. We have endeavored to choose the most promising alternatives, but it may be worth while to set down some of the directions in which we elected not to pursue

the inquiry. These include: setting up the moneyflows accounts in other forms, e.g., on a to whom from whom basis, or with more sectors, or with more detail by type of transaction; and providing accounts for 1929 and 1933, for selected quarters, for a group of large corporations, for rich and poor households, and by regions within the United States. Also in a broader sense they include investigating the composition of cash balances; habit patterns in moneyflows (e.g., the moneyflows correlate of the consumption function); price and physical volume relationships; the Federal government as a discretion modifier; the applicability of the discretionary hypothesis to inflationary spirals; and those theoretical implications of the analysis that go somewhat beyond the field of monetary theory.

# Part I

# INTRODUCTION