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# Financial Accounts in Countries Other Than the United States and Canada

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INTERNATIONAL MONETARY FUND

"The last few years have seen a large and interesting development of financial statistics . . . These developments have breathed a welcome new life into social accounting statistics" (J. J. Polak, "Financial Statistics and Financial Policy," *Staff Papers*, International Monetary Fund, April 1959).

## *I. Basic Differences*

IN A number of countries, the last ten years have seen the development of a wide range of financial and related statistics. The accounts prepared in seventeen countries are reviewed in the appendix to this paper.<sup>1</sup> Much of the most interesting work is an attempt to combine older ideas, the origin of which lie in the springs of monetary theory, with a further flow of ideas based on national income concepts. Much of the work may be viewed as an incorporation of "pre-Keynesian" methods of thought into the now popular "post-Keynesian" stream.

NOTE: This paper is a major revision of one, with the same title, presented to the 1959 Conference on Research in Income and Wealth. It is similar, in many places, to a paper on "The Present Status of Financial Accounts: A Review of Recent Developments," to be published in *Income and Wealth*, Series IX, London, Bowes and Bowes. The latter is intended to be a more general review of the problems raised by a survey of the accounts, whereas the present one is directed toward an outline of the major differences between the accounts published in North America and those prepared elsewhere at the time it was written (early 1960).

The author is an officer of the International Monetary Fund. None of the views expressed here should be interpreted as the views of the IMF or of members of the IMF Department of Research and Statistics.

<sup>1</sup> The criteria used in choosing the seventeen countries included in this sample are outlined in the introductory statement to the appendix. The self-imposed limitations on this selection should be emphasized. More detailed descriptions of the accounts for these countries are available, on request, from the Finance Division, Research and Statistics Department, International Monetary Fund, 19th and H Streets, N.W., Washington, 25, D.C., U.S.A. This review is limited to statements published in Western Europe and Yugoslavia, Asia, and the Americas. Financial analyses are prepared in the U.S.S.R. and in most of the planned economies; the author has not been able to obtain access to English versions of the latter accounts. However, they are reviewed in Michael Kaiser, "A Survey of the National Accounts of Eastern Europe," a paper presented to the Sixth European Conference of the International Association for Research in Income and Wealth, at Portoroz, Yugoslavia, 1959.

## INTEGRATION OF SOCIAL ACCOUNTING SYSTEMS

The "developments [which] have breathed a welcome new life into social accounting statistics" may, in the broadest of terms, be considered to fall into two major categories. In the United States and Canada, the most significant work stems almost directly from Morris A. Copeland's pioneering project, *A Study of Moneyflows in the United States*. Copeland conceived money-flow accounts as a form of analysis wherein the entire economy is viewed from a different observation point from that adopted in the more traditional income-expenditure accounts.<sup>2</sup> Thus, the original Federal Reserve presentation of the flow of funds envisaged the accounts as a set which "encompasses all transactions in the economy that are effected by a transfer of credit and/or money,"<sup>3</sup> in a way which would "broadly distinguish the flow-of-funds accounts from other national accounting systems which have different aims."<sup>4</sup> In some respects, the subsequent revisions of the accounts have tended to bring them closer to traditional economic accounts,<sup>5</sup> but they still retain their existence as a set, in which the entries "differ in several respects from corresponding series published by the United States Department of Commerce in the national income and product accounts."<sup>6</sup> The Canadian accounts are designed with the object of recording "within a standardized system of classification all economic transactions taking place in the national economy"<sup>7</sup> in a form which "incorporates those transactions which are recorded in the national income and expenditure accounts . . . , and presents in addition a record of financial transactions which are excluded there."<sup>8</sup> Yet this system entails some reclassification of the traditional national accounts in order to produce a complete and integrated system.<sup>9</sup>

Elsewhere, particularly in Europe,<sup>10</sup> the most significant developments are based on a somewhat less omniperceptient view of the problems facing the financial analyst. Most of the accounts reviewed

<sup>2</sup> National Bureau of Economic Research, 1952, Chap. 2, Sect. 4, and Chap. 9.

<sup>3</sup> Board of Governors of the Federal Reserve System, *Flow of Funds in the United States, 1939-1953*, 1955, p. 1.

<sup>4</sup> *Ibid.*, p. 15.

<sup>5</sup> For an argument in favor of using the term "economic accounts," rather than "national" or "social" accounts, see the comments of Richard Ruggles in *Problems in the International Comparison of Economic Accounts*, Studies in Income and Wealth, Princeton (for NBER), Volume 20, pp. 101-102.

<sup>6</sup> *Federal Reserve Bulletin*, August 1959, p. 842.

<sup>7</sup> Royal Commission on Canada's Economic Prospects, *Financing of Economic Activity in Canada*, 1959, p. 467.

<sup>8</sup> *Ibid.*

<sup>9</sup> See *ibid.*, pp. 481-492.

<sup>10</sup> Of the countries for which accounts are reviewed in the appendix, two are the North American countries, eleven are in Europe, two are British Commonwealth countries, one is Far Eastern, and one Latin American.

in the appendix to this paper are appendages to the income-expenditure accounts, analyses correlative to those accounts, or special tables designed to highlight specific problems.

There is another basic difference distinguishing the accounts reviewed here from those prepared in the United States and Canada. Most of those prepared outside North America consciously eschew the aim of the Federal Reserve where:

In designing the accounts, effort was made to keep the structure of the system adaptable and flexible so as not to restrict unduly the user's freedom to select hypotheses for testing or his freedom to combine or correlate data in testing. The structure of the system is thus not geared to any particular problem within the wide range of analysis for which the accounts are appropriate; nor is it geared to any specialized theory, hypothesis or approach.<sup>11</sup>

The non-North American accounts are, in most cases, directed toward the analysis of particular problems or of particular aspects of more general problems. Practically all of them are based on definite theoretical foundations, or are directed toward the examination of specific hypotheses.

## *II. Types of Account*

It is impossible, however, to separate the systems of accounting into definite North American and non-North American schools. There may be considered to be a general North American approach, and a wide variety of non-North American approaches.

One basic criterion for classifying the accounts is exemplified by the difference between the accounts of the Netherlands Bank on the one hand, and the work of the Netherlands Planning Bureau and Central Bureau of Statistics on the other hand. The Netherlands Bank's tables are a detailed analysis of a group of specific problems, which are viewed in isolation. The two other agencies view their work as being directly related to that done in the field of traditional economic accounts. However, even these accounts, which flow from the same wellsprings, show a divergence in approach. The Central Bureau of Statistics examines general liquidity problems arising concurrently with income flows, while the Central Planning Bureau measures the financial flows accompanying and associated with income flows.

"Financial analysis" may be considered to include a wide range of studies, extending from simple statements of the factors causing

<sup>11</sup> *Federal Reserve Bulletin*, August 1959, p. 830.

changes in deposit-money bank reserves to statements covering the full range of financial transactions in an economy, with data on physical investment frequently incorporated with financial entries. For purposes of exposition, they may be considered as falling into the following array:

- Analyses of reserve money
- Consolidated accounts of the monetary system, or analyses of factors leading to changes in money
- Consolidated accounts for financial institutions, or analyses of factors leading to changes in liquidity
- Comprehensive accounts for all economic sectors

As a sideline to this array, there are records limited to the accounts of the business, or similar, sectors (or parts of these sectors). While it is possible to conceive a ranking of the statements by degree of coverage, a parallel classification may be adopted. Some statements are records of transactions: some are records of assets and liabilities. That is, certain statements are primarily directed to the measurement of intersector finance: others are primarily directed to the measurement and analysis of liquidity.<sup>12</sup>

Even among the statements which are directed toward the measurement of specific magnitudes, there are two fundamentally differing views as to which totals should be measured. According to one view, a direct causal implication is attached to the financing balances. These analyses record "the financing methods to which a monetarily inflationary or deflationary character must be assigned."<sup>13</sup> Another, weaker, view considers these balances to be residual flows resulting primarily from other economic transactions. In this latter view, savings arise only because "part of the disposable income is used for consumption while the remaining part equals saving."<sup>14</sup>

The most readily recognizable differences in the approaches to the problems of financial accounting may be considered to be based on different opinions as to the significance of particular financial aggregates. While the first published forms of monetary analysis referred to reserve money,<sup>15</sup> most of the earlier statements were

<sup>12</sup> For a discussion of the differences in these approaches, see Earl Hicks, "Monetary Analyses," *Staff Papers*, February 1957, pp. 342-357.

<sup>13</sup> Netherlands Bank, *Report for the Year 1958*, p. 67.

<sup>14</sup> Finland, Ministry of Finance, *Economic Survey*, 1957, p. 16.

<sup>15</sup> The first complete analysis of reserve money to be published was probably the table on "Reserve Bank Credit and Related Items" as revised for the *Twenty-First Annual Report of the Federal Reserve Board* (1935), covering operations for 1934. This was followed by the table (since discontinued) on "Effect on Chartered Banks' Cash Reserves of changes in Bank of Canada Accounts" which first appeared in the second *Report of the Bank of Canada*, covering 1936.

attempts to explain the origins of changes in the stock of money as indicated in the accounts of the monetary system.<sup>16</sup> These latter statements<sup>17</sup> may be regarded as products of a theory which "attaches great importance to the quantity of money as a determinant of prices and employment."<sup>18</sup> Hence, it is evidently thought that it is sufficient to focus attention on changes in the quantity of money, in order to provide meaningful guides to financial developments.

Analyses limited to an explanation of the factors causing changes in reserve money<sup>19</sup> may be regarded as simplified versions of "monetary analysis" based on the theory that "changes in the volume of member bank reserves, permitted or brought about by the monetary management, affect directly the ability of member banks to extend credit to customers and to assume the deposit liabilities to the public that result from these credit extensions."<sup>20</sup> That is, they tend to be based on the belief that reserve-money items bear a more or less constant relation to money. Consequently, if attention is focused on this total, the main purposes of monetary analysis may be served.

<sup>16</sup> It should be emphasized that, except for the two prewar tables referred to above, financial accounting is a postwar development. Columbia, Costa Rica, and New Zealand share the credit for publishing the first "monetary analyses" in 1945. The impetus for the development of this type of accounting derived, in large part, from R. Triffin's paper, "Esbozo General de un Analisis de las Series Estadísticas Sobre Bases Uniformes y Comparables," presented to the First Meeting of Central Bank Technicians of the American Continent, held in Mexico City in 1946. The United States "Consolidated Condition Statement for Banks and the Monetary System" was first presented by Morris A. Copeland and Daniel H. Brill, "Banking Assets and the Money Supply Since 1929," *Federal Reserve Bulletin*, January 1948. Rudimentary monetary analyses for fifty-six countries were presented in *International Financial Statistics*, IMF, January 1948. Complete monetary analyses were first presented in *International Financial Statistics* for January 1955. They are now available in this publication for sixty-five countries. The first attempt by an official agency to extend financial analysis beyond monetary analysis is probably the study on "Some Estimates on the National Wealth of the Netherlands in 1938," *Statistical and Econometric Studies*, Netherlands Central Bureau of Statistics, 1947, No. 3. The first country to embark on the annual publication of a general financial analysis probably was Finland, with the table first appearing in the *Economic Survey* published in 1949.

<sup>17</sup> Monetary analyses are presently published in Argentina, Australia, Austria, Belgium, Brazil, Burma, Ceylon, Chile, Columbia, Costa Rica, Cuba, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Finland, France, Germany, Greece, Guatemala, Honduras, India, Indonesia, Israel, Japan, Korea, Mexico, Nicaragua, New Zealand, Paraguay, Peru, Philippines, Union of South Africa, United States, Viet Nam, and Yugoslavia. The sources for most of these statements are to be found in Dorrance and Gerard R. Aubanel, "Survey of Monetary Analyses," *Staff Papers*, February 1957, pp. 358-433.

<sup>18</sup> *Employment, Growth, and Price Levels: Hearings*. Joint Economic Committee, 86th Cong., 1st sess., May 25, 1959, p. 608 (evidence of Milton Friedman).

<sup>19</sup> Analyses of reserve money are published in Germany, Norway, Sweden, and the United States (references are to be found in Dorrance and Aubanel, "Survey of Monetary Analyses").

<sup>20</sup> Ralph A. Young, "Tools and Processes of Monetary Policy," *United States Monetary Policy*, The American Assembly, Columbia University, 1958, p. 14.

Those who, like the author, believe that money occupies a unique position in the community's asset structure and that the study of its change is the axis around which financial analysis must revolve, nevertheless recognize that monetary analysis alone is an inadequate substitute for financial analysis. Most of those who wish to see the development of complete financial accounts ". . . do not regard the supply of money as an unimportant quantity . . . [They] view it as only part of the wider structure of liquidity in the economy."<sup>21</sup> If one agrees with this view, the problem of financial analysis becomes one of expanding the statistical statements beyond the scope of monetary analysis. Two separate problems arise in connection with this task:

Is it sufficient to measure financial flows?

or

Should the statistics seek to measure outstanding assets and liabilities?

The presently published accounts indicate that there is a wide range of opinions regarding these questions among statisticians. Some indication of their scope may be gathered from a review of the different types of account which have been evolved, of the different totals which are singled out for attention, and of the different ways in which financial transactions are correlated with other transactions in the accounting structure. The appendix to this paper is intended to provide some guide to these different opinions. It offers classifications of the different types of account reviewed here and of some of the problems which have been faced in their compilation.

The simplest statements extending beyond monetary analysis are limited to consolidations of the accounts of financial institutions or to surveys of factors causing changes in liquidity, which is defined as the assets and liabilities of the monetary system plus short-term government securities. These statements presumably derive from the opinion that "liquid assets are a strategic form of wealth, as far as . . . behavior is concerned."<sup>22</sup> Hence, their authors tend to give a positive focus to changes in liquid assets and liabilities, and construct statements which provide measures of these items only. While it must be admitted that changes in liquid assets and liabilities are

<sup>21</sup> United Kingdom, Committee on the Working of the Monetary System Report, ("Radcliffe Report"), August 1959, p. 132. The author believes that this report goes farther in the minimization of the role of money in the economy than is justified on the basis of the theory outlined in the paragraph from which this quotation is taken.

<sup>22</sup> L. R. Klein and A. S. Goldberger, *An Econometric Model of the United States, 1929-1952*, Amsterdam, Holland, 1955, p. 8.

significant economic flows, the centering of attention on these transactions to the exclusion of others is open to question. The difficulties in arriving at an unequivocal definition of "money" are well known. The separation of "liquid" assets and liabilities from those that are "illiquid" is even more difficult. Once the opinion is adopted that not only the key financial asset (money) but also the range of assets and liabilities extending therefrom must be studied, the legitimacy of limiting the range under purview becomes more questionable.

It would appear to be more appropriate to consider the economy to be one where:

Each economic unit<sup>23</sup> regards the flow of liquid resources accruing to it as forming a single total for expenditure that is rationally allocated among different uses. Funds arising from income earned, current transfers received, depreciation allowances, debt maturities, capital transfers, borrowing, the sale of assets, and all other sources provide a single sum of available funds that is distributed rationally between consumption, the purchase of physical assets, the acquisition of financial assets, and redemption of debt.<sup>24</sup>

That is, the economy may be viewed, statistically, as a system of fully interdependent variables: income, consumption, investment, and changes in financial assets are interdependent. Within each of these categories, the parts are all interdependent. It does not follow that a completely integrated set of accounts will provide complete data for economic analysis. Information on prices, interest rates, etc., is necessary. However, it follows that insofar as possible, economic accounts should comprehend, within a consistent system, all the aggregates subject to economic motivation. That is, a fully integrated accounting structure should be evolved which, at a minimum, incorporates income-expenditure and financial accounts.<sup>25</sup>

Even if the essential interdependence of the economic system be accepted, decisions have to be made regarding the aggregates which

<sup>23</sup> The term "economic unit" is used to mean any complete decision-making entity whose activities may be identified conceptually (e.g. a bachelor living alone, a family living together, a partnership, a company, a charity, a government.)

<sup>24</sup> Dorrance, "Balance Sheets in a System of Economic Accounts," *Staff Papers*, October 1959, p. 170.

<sup>25</sup> There is a further, purely statistical purpose to be served by an integrated system of accounts. Each of them must be constructed by the incorporation of entries gathered from a number of diverse sources. Some of these entries must be estimates of doubtful accuracy. Inevitably, some of the "entries" are residual differences. If a complete system of accounts is evolved, with a minimum of residual estimation, the apparent discrepancies should provide some indications of the size and possible location of the inevitable errors in the estimates.

are to receive attention, and decisions have to be made on the methods by which an integrated set of accounts is developed. In arriving at the first of these decisions, an argument on the following lines may well be maintained:

Economic analyses are often in a form which considers the inflation or deflation problem to be one relating to savings and investment. If, *ex ante*, desired investment is greater than the volume of savings that will arise at current income and price levels, it is argued that inflation will result. Similarly the problem of deflation is seen as an insufficiency of investment to match the savings accruing at current income and price levels. In this form of analysis, investors are considered to exert an expansionary pressure on the economy. The actions of savers are viewed as contractionary. In a period of inflation, investors are viewed as the devils. In a period of deflation savers are the devils. . . . This view of the economic system deserves revision. Businesses and other entrepreneurs who finance investment out of their own savings are neutral in their effect on expansion or contraction. Their savings provide the resources from which their investments are financed, while their investment absorbs the resources released by their saving. Net expansionary pressures come from those who wish to borrow, and net contractionary pressures from those who wish to lend. If this argument be correct, statistical analysis should recognize it. Instead of measuring the "balance of resources" in a community, that is, the difference between *ex ante* savings and investment, economic statistics should measure the "balance of finance" in the community, that is, the totals of net lendings and net borrowings by the significant economic sectors.<sup>26</sup>

Consequently "we should attempt to branch out from money and banking statistics and attempt to build up as complete a picture of borrowings and lendings as we can achieve."<sup>27</sup> In other words, statistics on financing transactions should be developed.

Most of the more extensive measures of financial flows have been developed on lines similar to these. Some of these statements are independent analyses. The majority are extensions of the existing systems of economic accounts to include both traditional income-expenditure accounts and accounts measuring the concurrent financial transactions.

<sup>26</sup> Dorrance, "Consideracion de Algunas Relaciones Keynesianas Fundamentales," *Revista de Desarrollo Economico*, January-March 1960.

<sup>27</sup> Polak, "Financial Statistics. . . ," p. 8.

In general, the independent statements have a more neutral direction than those which are integrated with the income-expenditure accounts. However, even in these cases, it may be argued that the non-American statements have a somewhat more positive focus than their American counterparts. Attention is directed toward different objectives, be they financial balances, total borrowing by sectors, or the savings of individual sectors. But, in most cases, the statements are designed to highlight specific aggregates which are considered important.

Even more directly, accounts which are integrated with the income-expenditure accounts tend to focus attention on one or more significant magnitudes. This focusing is perhaps associated with the fact that the income-expenditure accounts tend to be directed toward a measurement of the aggregates deemed significant in the Keynesian equations. May the statisticians who compile analyses integrated with these accounts be searching for equally significant aggregates in the field of financial analysis? The variety chosen for attention, viz. financial balances, liquidity balances, or total borrowing by sectors, indicates that agreement among statisticians regarding the significance of individual aggregates has not yet been reached.

The existence of two separate types of account, those that are independent of, and those that are integrated with, the income-expenditure accounts, raises a question as to the form which financial accounts should take. Is it desirable that they should be integrated with the income-expenditure accounts, as would appear at first sight, or is there some inherent reason why the financial accounts could best be compiled as independent statements? Thirty years ago, many economists would have supported the latter view. Then, it could be said that: "It is a peculiarity of all systematic treatises on orthodox theory that there is no inner connexion of monetary theory with the central theory of prices."<sup>28</sup> Insofar as there was a body of income theory existing at the time, its dissociation from monetary theory would have been generally accepted. More recently, some authors have felt that "Within the confines of macro-economics . . . a consistent body of analysis has been erected since the mid-thirties."<sup>29</sup> However, a more tenable view seems to be that: "We do not agree about all these matters yet; and very important issues of policy are involved."<sup>30</sup> That is, general agreement among economists on the form of this consistent body of analysis has still not been reached, and

<sup>28</sup> Gunnar Myrdal, *Monetary Equilibrium*, London, 1939, p. 10.

<sup>29</sup> A. C. L. Day, *Outline of Monetary Economics*, Oxford, England, 1957, p. v.

<sup>30</sup> Lord Robbins, "Book Reviews: D. H. Robertson's *Lectures on Economic Principles*," *Economica*, February 1960, p. 73.

there is, as yet, no generally accepted explanation of the inner connection between monetary theory and theories of income, employment, and prices. Yet, an economic accounting problem must be faced: "Unless [all] the economic accounts are comparable, their use for administrative or analytic purposes is impaired and possibly misleading."<sup>31</sup> Hence, it would appear to follow that an attempt should be made to construct a system in which the financial accounts are fully articulated with the income and expenditure accounts, even though such integration raises a host of problems.<sup>32</sup>

The disagreement among theoreticians provides an unusual opportunity for the statistical practitioner. The latter's most important role may possibly be not the application of theoretical concepts to statistical data, but the working with statistical concepts in a search for theoretical principles.

As yet, most of the efforts to achieve this integration have been attempts to measure financial flows which are consistent with the associated income-expenditure transactions. These measures are necessary. However, it may be argued that:

If lending and borrowing are, in fact, conscious decisions to change assets and liabilities, it is reasonable to assume that such decisions to modify the values of stocks are partly influenced by the pre-existing values of the stocks themselves. That is, if lending and borrowing are actually conscious decisions to alter balance sheet aggregates, it is reasonable to assume that they are partly determined by the existing structures or the balance sheets of the individual economic units making the decisions. Again if this be true, it follows that balance sheet criteria must be incorporated into our economic theory. Consequently, the aggregate balance sheets of the significant economic sectors must be essential parts of our economic statistics.<sup>33</sup>

There is, thus, a growing body of opinion that ". . . the theory of the consumption function [should be primarily regarded] as a description of the behavior of consumers in their effort to adjust the level of their asset holdings over time . . . [and] the investment function [should be primarily regarded] as a description of the behavior of producers in their endeavor to adjust their productive facilities—fixed and circulating capital—over time."<sup>34</sup> It can, therefore, be

<sup>31</sup> John W. Kendrick, "Introduction," *Studies in Income and Wealth*, Vol. 20.

<sup>32</sup> It is possible that these problems may not be as complex in a more widely integrated structure of financing: in income-expenditure or in input-output accounts.

<sup>33</sup> Dorrance, "Consideracion de Algunas Relaciones Keynesianas Fundamentales."

<sup>34</sup> Albert K. Ando and Franco Modigliani, "Growth, Fluctuations, and Stability," *American Economic Review, Papers and Proceedings*, May 1959, p. 501.

argued that financial accounts should present balance sheet statistics rather than be limited to measures of financial flows.

In passing, it should be pointed out that a completely analyzed set of balance sheets<sup>35</sup> is not an alternative to a set of financial-flow statements, whereas a set of financial-flow statements may be an alternative to a set of balance sheet statistics. Balance sheets may be used as a source of data for the concurrent financial flows, while balance sheet aggregates cannot be derived from accounts which are limited to flow data.

Boulding states: "Little has been done with identities involving assets, yet these are actually more fundamental, and frequently more illuminating, than the income identities commonly used."<sup>36</sup> This statement is still valid. As yet, complete (or fairly complete) balance sheet statistics have been compiled for only a few countries. Economic statisticians are evidently willing, on certain occasions at least, to believe that:

Due to the problem of valuation and the difficulties of measuring the stock of physical capital, a National Balance Sheet is more difficult to construct than the National Transactions Accounts, not less . . .<sup>37</sup>

The view expressed by John R. Hicks in 1942 (and repeated in his 1952 text) has evidently carried great weight:

The information which is available for making an estimate of the national capital of Great Britain is much less good than that which can be used for most other large-scale economic calculations . . . This is partly because of defects in our information which could conceivably be remedied . . . But the fundamental cause lies deeper, and can hardly be removed in the nature of the case.<sup>38</sup>

The statisticians have evidently not considered views similar to Hicks's 1952 statement:

I want to emphasize (partly for the benefit of any economic statisticians who may read these pages) that the construction of a

<sup>35</sup> I.e., statistics which differentiate changes in aggregates that are caused by valuation adjustments from changes caused by transactions. (See the statements of the Netherlands Central Statistical Bureau for an example of balance sheets which provide this type of data.)

<sup>36</sup> Kenneth E. Boulding, "Asset Identities in Economic Models," *Studies in Income and Wealth*, Volume 14, National Bureau of Economic Research, 1951, p. 231. I wish to acknowledge that most of my ideas on the subject matter of this paper were originally inspired by Boulding's lectures at the University of London in 1949.

<sup>37</sup> Royal Commission on Canada's Economic Prospects, *Financing . . . Economic Activity*, p. 481.

<sup>38</sup> *The Social Framework: An Introduction to Economics*, 1st ed., Oxford, 1942, p. 101.

respectable National Balance Sheet does seem to me, after all, to be a more possible task than has often been supposed. And further that it is well worth having, if we can get it.<sup>39</sup>

It might be pointed out here that Hicks's "fundamental cause" (the difference in the valuation placed on the same items by debtors and creditors) may not be a difficulty at all, if the argument presented below is accepted. Finally, statisticians who compile income-expenditure accounts, but refrain from compiling balance sheets, might well ponder the views of a group of competent, experienced experts: "The concepts of the national balance sheet and the national wealth statement are essentially not more difficult—indeed, they are probably simpler—than those of the national income and product."<sup>40</sup>

Before turning to a review of some of the statistical problems indicated by the differences in the accounts that are presently available, there is one digression which might be made. We are still in the early stages of the development of financial accounts. In many countries, complete accounts have not been developed, but accounts for sectors other than the financial one have been compiled. The preparation of balance sheets is more frequent for these individual sectors than for accounts covering the entire economy. It is questionable if the best way to compile financial accounts is to focus attention on the nonfinancial sectors. Nevertheless, work in the field of accounts for the nonfinancial sectors should not be ignored in any review of presently available financial statistics.

### *III. Statistical Problems*

The statements reviewed here provide examples of the statistical problems which arise in the compilation of financial statistics. These are more serious in the construction of financial accounts which are fully integrated with national income and expenditure accounts than in the preparation of financial analyses independent from other accounting statements. Some of the difficulties to be faced are common both to accounts measuring financial flows and to balance sheets, while balance sheet statistics raise others which are unique to them.

<sup>39</sup> *The Social Framework*, 2nd ed., Oxford, 1952, p. 277.

<sup>40</sup> *The National Economic Accounts of the United States: Hearings*, Joint Economic Committee, Subcommittee on Economic Statistics, 85th Cong., 1st sess., October 29 and 30, 1957, p. 250 (in Appendix, "Review, Appraisal and Recommendations," by committee on Review and Appraisal of National Economic Accounts, National Bureau of Economic Research).

## GENERAL PROBLEMS

Insofar as attention is limited to accounting systems designed to integrate the records of income-expenditure and financial flows, the main problems arise from the reconciliation of the different purposes that income-expenditure<sup>41</sup> and financial accounts should serve. In the first place, insofar as national income accounts classify transactions by sectors, they tend to measure the income originating in each sector. The income attributable to a sector is, in fact, the sum of the income payments paid out by the sector. In contrast, financial accounts direct attention to the income receipts and payments, capital expenditures, and associated financial transactions of each sector. The income of a sector is the sum of the income receipts of the sector. In the second place, income-expenditure accounts are limited to a measurement of current flows of resources, while financial accounts must be measurements of the transactions of decision-making economic units. In the third place, income-expenditure accounts are primarily designed to account for production, expenditure, and income, whereas financial accounts are primarily designed to measure receipts and payments by individual economic units, grouped into significant sectors of the economy. Hence, national income and product accounts measure consumption and production transactions, etc., or wage and interest payments, etc.; financial accounts measure transactions of consumers, farmers, corporations, etc.

The first general problem in the development of an integrated set of financial accounts is a determination of which accounts should be integrated.

This difficulty is significant only in those cases where an attempt has been made to integrate financial accounts with income-expenditure data. For the "independent" accounts, arbitrary decisions can be made regarding the composition of the current transactions, comprising the flows associated with financial transfers.

The real question to be answered is: What should be the form of the main statement linking the financial accounts with the income-expenditure statements? Income-expenditure accounts are, to a large degree, designed to provide basic data for a domestic product statement.<sup>42</sup> Financial accounts must be based on a receipts and payments statement. The preparation of a joint statement, either

<sup>41</sup> Throughout this paper, the model of income-expenditure accounts presented in United Nations, Dept. of Economic Affairs, *A System of National Accounts and Supporting Tables*, Studies in Methods, No. 2, New York, 1953, is taken as the standard model for income-expenditure accounts.

<sup>42</sup> *Ibid.*, Account I.

incorporating these two in a single account or reconciling the two, is perhaps the most difficult problem in extending traditional economic accounts so as to develop financial accounts.

In those cases where integration is limited to reconciliation of financial transactions with sector savings and investment totals, the problem is not as serious as where more complete integration is attempted. Where the integration of financial transactions accounts with income-expenditure accounts is sought difficulties arise.

Some of the earlier ideas regarding the form of an integrated set of accounts envisaged a linking of the financing accounts to the national product rather than to the national income accounts.<sup>43</sup> In some of the accounts presently available, this basis of integration is adopted. They record income originating in each sector (i.e. essentially income payments and imputed income receipts by the sector) as the foundation on which the structure is built. Factor payments are then regarded as transfers, similar to the more conventional transfers in the income-expenditure accounts. The net income originating in the sector and the net "transfers" received by the sector, less consumption, provide a measure of the saving of the sector. Saving minus investment then gives the measure of the net financial surplus which must be reconciled with the data on financial transactions.<sup>44</sup>

Alternatively, financial accounts may be linked to national income accounts. This is the procedure adopted in some of the present studies. With this structure, factor income receipts provide the foundation upon which the accounting system is laid. Ultimately, integration with the national income accounts may prove more convenient, provided that the business accounts are expanded to include a more detailed statement than the present business component of the national income (undistributed profits).

However, if we look further, toward an integrated set of input-output, income-expenditure, borrowing-lending, asset-liability accounts, we find an argument for attempting to integrate the financial accounts with the national product statement. Input-output accounts can only be integrated with income-originating statements, i.e. the national product accounts. If the entire set of accounts could be integrated around one focus, it would be a valuable contribution toward the development of a useful accounting structure.

It cannot be claimed that any of the fully integrated accounts are completely satisfactory. It is clear that the questions involved in the integration problem are the most difficult technical problems to be

<sup>43</sup> E.g. Morris A. Copeland, "The Feasibility of a Standard Comprehensive System of Social Accounts." *Studies in Income and Wealth*, Vol. 20, p. 77.

<sup>44</sup> This is, essentially, the proposal in Dorrance, "Financial Accounts in a System of Economic Accounts," *Staff Papers*, February 1955.

faced in the evolution of a satisfactory set of complete national accounts. In looking toward the future, it might be emphasized that income-expenditure accounts have proved to be a most useful addition to the body of economic statistics. Economists are familiar with their content, significance, uses, and weaknesses. This intellectual capital should be preserved, if possible. However, the expression of this hope does little to solve the problem which is still a source of difficulty for statisticians, as a review of existing accounts indicates.

The second general problem which must be faced in the development of an integrated set of financial accounts is the determination of the sectors to be identified.

All the accounts reviewed here implicitly, if not explicitly, envisage the identification of the following sectors at least: the private (i.e. business and household)<sup>45</sup> sector, the government, and the foreign sectors (or the international accounts of the economy). Some envisage a further division of these sectors, and some authors admit that their sectoring is not as detailed as they might desire, because the available statistics are inadequate for a fully satisfactory sectoring. There is a significant divergence between the different accounts concerning the proper treatment of financial institutions.

No attempt is made, in many accounts, to separate the business from the household components of the private sector. Most experts in the field of financial analysis would probably agree with the view that: "In some respects, the differences between the household and the business sectors are more fundamental for financial analysis than the simple difference that arises from the fact that, for the most part, one sector consumes what the other produces."<sup>46</sup> However, in a number of cases, the available statistics make it impossible to separate the data for these two sectors.

There are two problems in the definition of the government sector<sup>47</sup> which deserve attention here:

1. The coverage of the sector
2. The treatment of social insurance funds

<sup>45</sup> In this paper, the term "household" is used to designate an integrated income receiving and consuming unit of people living together. It may be a bachelor living alone, a family, or other similar group of people. It does not have the connotation attached to "householding" in the Netherlands literature on economic accounting (see M. W. Holtrop, "Method of Monetary Analysis Used by de Nederlandsche Bank," *Staff Papers*, February 1957, p. 306).

<sup>46</sup> Dorrance, "Balance Sheets in a System of Economic Accounts," pp. 181-182.

<sup>47</sup> In passing, it should be noted that the present state of financial accounts for central governments is deplorable. These should be among the easiest of financial data to obtain. However, *International Financial Statistics* is able to present data on central-government transactions for only thirty countries, and some of these are disgracefully in arrears.

A number of financial accounting systems retain the income-expenditure definition of the government sector.<sup>48</sup> However, there appears to be a trend toward the acceptance of a more limited sector for financial-accounting purposes. It is becoming recognized that a central government (but not a local government) is always able to command liquidity and is independent of considerations arising from its own need to maintain desirable asset-liability relations.<sup>49</sup> This difference in definition creates a problem for the integration of income-expenditure and financial accounts. Where this difficulty has been faced, the most usual solution is to separate the accounts of the general-government sector into its central-government and other components.

In most countries, the social insurance authority is organized as a quasi-independent investment fund. While the financial accounts for some countries identify the social insurance sector, most accounts adopt the treatment recommended for these activities in income-expenditure accounts.<sup>50</sup>

One of the most important aims of financial accounts should be to demonstrate the reactions of the nonfinancial sectors to financial policy. Some of the present accounting systems reflect this view by making no provision for the separate identification of the accounts of financial institutions in the complete structure of analysis. In these accounts, financial institutions are, in fact, viewed as intermediaries, through which inter- and intrasector transactions are channeled. However, the majority of the accounting systems provide for at least the presentation of the accounts of financial institutions. Further, most of the systems which identify the accounts of the financial system also provide accounts for the central bank and other parts of the monetary system. It would seem that if financial policy is considered to have any effect on the transactions by the nonfinancial sectors, then it is essential to provide for the accounts of financial institutions. Once it is accepted that financial institutions create assets which are held by others, hence enabling the latter to incur expenditure financed out of the issue of liabilities, then it follows that the former are a significant sector in the economic structure

<sup>48</sup> I.e., "that group of entities which perform the functions of government, namely, to organize for, but not normally to sell to, the community those common services which cannot otherwise conveniently and economically be provided and to act as the administrative agency for the economic and social policy of the community" (United Nations, *A System of National Accounts*, p. 12).

<sup>49</sup> In some cases where, for reasons of general economic policy, the government has voluntarily accepted certain financial restraints, this statement is an exaggeration (e.g. Argentina).

<sup>50</sup> I.e. that "it is convenient to include [in the government sector], social security arrangements, even if they are not already formally part of government, if their activities may be regarded as an instrument of the social policy of the government" (*loc. cit.*).

of the community and that their accounts should be identified. Further, if money is regarded as an asset with certain specific attributes, and if monetary policy is considered to be a readily identifiable part of financial policy, the monetary system should be identified as a separate sector, or subsector, in the structure of accounts.

In addition, there are grounds for suggesting that if one of the aims of financial accounts is to show how financial surpluses and deficits are channeled into the financing of physical investment, then there should be complete identification of the accounts of financial institutions. It is true that their contribution to national income and expenditure is small<sup>51</sup> and, by nature, is closer to the contribution of other service industries than to the main business of financial institutions—the creation of assets and the acceptance of liabilities. Hence, in an integrated system of accounts, provision for all their transactions involves the inclusion of relatively insignificant entries in the income-expenditure accounts. In *Financing of Economic Activity in Canada*, the income-expenditure accounts of these institutions are not identified; instead, they are consolidated in the combined accounts of the business sector. This treatment is consistent with the income-expenditure account view of these institutions as intermediaries. However, this flow of income is an important part of the liquid resources accruing to many of these institutions (e.g. life insurance companies), and influences their decisions. The investments associated with these flows of resources may be attributed to the policy holders and, thus, be recorded in the total of the community's financial investment. However, there is no reason to assume that, if these investments had been made directly by the policy holders, they would have taken the same form as the one resulting from the decisions of the financial institutions. Thus, it does not seem unreasonable to suggest that these considerations provide a further argument for the complete identification of a separate financial-institutions sector and for the full identification of these flows. In most countries, data are available for these institutions; and, hence, the computation of accounts for them does not raise serious statistical problems.

The third general problem which must be faced in the development of an integrated set of financial accounts is the "split personalities" problem.

The difficulties arise here because financial accounts and income-expenditure accounts have, at present, two different purposes. The

<sup>51</sup> This contribution is not as small as might be thought. In 1957, the income originating in finance in the United States was equal to approximately 80 per cent of that originating on farms.

former, to be meaningful, must include in each sector all the transactions (production, consumption, saving, investing, lending, and borrowing) of each economic unit comprising the sector, while the income-expenditure accounts quite usefully split the transactions of individual economic units into components of separate sectors, according to the type of transactions. This disparity in the aims of the two types of accounts arises most frequently in the treatment of the earnings of self-employed persons, and the allocation of the rent of owner-occupied homes. In some respects, the allocation of the income of financial institutions to the creditors of those institutions involves a similar problem.

Obviously, in those cases where the household and the business sector are combined in one private sector, these problems do not arise. Nor do they arise in those cases where financial institutions are considered to be no more than intermediaries. In all other cases, it is fair to say that, as yet, the treatment of this problem has been less than really adequate.

In income-expenditure accounts, the production activities of self-employed persons, including the owner-occupation of homes, as well as the ownership of rental property, operation of unincorporated businesses, and private practice of professions and trades are usually included in the business sector. If a useful household-sector account is to be derived, these operations must be included in the account. Some of the present financial-accounting systems attempt to incorporate all the activities of self-employed individuals in the household sector. In others, the net profits arising from the operations of self-employed persons are transferred from the business account, and entered in the household account. A third treatment records the financial activities directly associated with the operations of self-employed businesses as part of the business or of a separate self-employed sector. The first of these alternative treatments may be regarded as the most logical, even if it involves amendment of the structure of the income-expenditure accounts. The second alternative is not fully satisfactory because it leaves the production and business expenditure activities of self-employed persons in the business account, and excludes them from the full accounts of the household sector. The third assumes that financial investment by an individual in his capacity as an entrepreneur can be unequivocally separated from his financial investment as an individual.

It is easy to criticize the existing treatments of the self-employment problem. To suggest a viable solution is more difficult. Conceptually, it is not difficult to envision the creation of a self-employed sector throughout the accounts. However, the statistical problems

to be faced in this revision of the accounting structure would be very great. Most product and consumption estimates are derived largely from production and consumption data which do not indicate whether production originated in a corporate business or as the result of self-employment, nor do they differentiate between different types of consumer. Any separation of these flows would, for the present at least, probably have to be done on the basis of arbitrary and unreliable guesses. A neat system of accounts could be presented, but the significance of the figures would be dubious.

#### BALANCE SHEET PROBLEMS

The two most important groups of problems in the field of balance sheet statistics refer to

1. The extent of the data
2. The problem of valuation

Up to the present, the Netherlands Central Bureau of Statistics is probably unique among official agencies in publishing complete national balance sheet statistics. Private individuals have compiled complete statements for individual countries.<sup>52</sup> However, all the other balance sheet statistics, published by official agencies, are partial statements of the community's assets, presumably because it is felt that serious problems will arise in measuring the value of these assets.<sup>53</sup> That is, they are, at best, statements of financial assets and liabilities. Some of the available statements are not even complete tables of financial assets and liabilities.

It cannot be denied that the development of financial balance sheets is a useful step forward. The adequacy of balance sheets limited to financial items may be questioned, however. If balance sheets are considered valuable for economic analysis, it must be on the basis of a belief that individual economic units react to changes in their total assets and liabilities and to ratios between specific assets (and liabilities) and other items and the totals of their assets (and liabilities). This view can only be maintained if all assets and liabilities are comprehended in the series. It follows that the desirable form for sector balance sheets is one which provides for the recording of all financial and all physical assets, all liabilities, and the residual values of equities.

<sup>52</sup> E.g., the work of Raymond Goldsmith for the United States, a sample of which is reproduced in *The National Economic Accounts of the United States*.

<sup>53</sup> See the quotation given above from *Financing of Economic Activity in Canada*. However, the papers reproduced in *Studies in Income and Wealth*, Volume 12, National Bureau of Economic Research, 1950, provide evidence that it is not an insuperable problem.

Most of the balance sheet studies which attempt a wide coverage of the economy are based on face-value, or transactions-value, principles of evaluation. They generally assume that a set of sector balance sheets should consolidate to a national real wealth statement.<sup>54</sup> If balance sheets are considered to be nothing more than statements subsidiary to financial accounts, financial claims might be handled most conveniently if valued at the actual transaction price. If balance sheet data are considered as economically significant per se, the problem is more complex. In the latter case, it may be argued that

insofar as economic units attempt to maintain asset-liability ratios, they attempt to maintain relations between items at the values currently ascribed them. That is, balance sheets which are designed to provide a series of data explaining the reaction of economic units should comprise items valued at current prices.<sup>55</sup>

In brief, this argument leads to the conclusion that, in most cases, marketable assets (including inventories) should be valued at market values, fixed assets at depreciated cost, all liabilities at face value, and, in the case of annuities, both the cash surrender and "face value" should be incorporated in the accounts.<sup>56</sup> It has been suggested that

<sup>54</sup> This is the view of most writers on this subject. Thus Josiah Stamp, in *Wealth and Taxable Capacity* (London, 1930), and *The National Capital and Other Statistical Studies* (London, 1937), used essentially the capitalized value of equity income as a measure of the national wealth. Hicks is specific on this point: "The balance sheets of 'companies' and of 'government' must frankly be adjusted so as to maintain consistency with the personal sector. The shares and bonds, as they appear in the balance sheet of the 'companies' sector, must be entered at the values which have been given them in the balance sheet of the personal sector, not at the values given them by the companies. In spite of this, we must hold to the principle that the net assets of companies are nil. This means that we must not attempt to value the real assets of companies directly. We must accept the 'shareholders' value' of these real assets—not the value which is set upon them by the company, but the value which is implied in the market value of the shares" (*The Social Framework*, pp. 277-278). Copeland accepted the idea that items should be consistently valued in creditor and debtor records. In outlining the principles on which sector balance sheets should be compiled, he proposed to "either adjust the holders' statement to agree with that of the obligor, or adjust the obligor's statement to agree with that of the holder" (*Income and Wealth*, Vol. 20, p. 72). Goldsmith states that a set of sector balance sheets should be compiled so that "When all intergroup and intragroup relationships are eliminated we obtain instead of a combined national balance sheet a national wealth statement" (*A Study of Saving in the United States*, Princeton, 1955-56, Vol. III, p. 4). Edey and Peacock refer to differences in creditor and debtor valuations as "... inconsistencies [which] do, of course, occur, and we have to accept the fact that this is one of the aspects of life not susceptible to satisfactory treatment in accounts" (Harold C. Edey and Alan T. Peacock, *National Income and Social Accounting*, London, 1954, p. 214). The National Accounts Review Committee went so far as to say: "Statements, to make economic sense, must be based on balance sheets of the component units which are uniform with respect to scope of assets and liabilities and to their valuation" (*loc. cit.*, pp. 28-29).

<sup>55</sup> Dorrance, "Balance Sheets in a System of Economic Accounts," p. 195.

<sup>56</sup> This problem is discussed at greater length in *ibid.*

"face-value" entries are useful, partly because this method ". . . provides good opportunities for arriving at statistical consistency."<sup>57</sup> On the one hand, arguments in favor of statistical methods which permit complete estimation, through judicious use of residuals, and which provide internal checks on the validity of independently estimated entries, should never be minimized. On the other hand, arguments based on the relative ease of calculation must not be allowed to overshadow claims based on the use of statistics for economic analysis.

## SUMMARY OBSERVATIONS

This review covers a wide range of statistical statements based on different premises. As yet, many of the solutions adopted to meet the problems faced in their construction have proved inadequate. However, there are a few conclusions which it seems possible to derive from an examination of the available statements.

It is significant that practically all the work falling within the direct purview of this paper has a positive focus. That is, most of the studies prepared outside North America have one of the attributes inherent in the thesis that "it is in economics only, when we have excepted the mathematical physics, that there is realized with some perception that type of science to which Greek thought aspired, which Aristotle thought if he did not practice: the leading up to general principles and leading down to particular conclusions."<sup>58</sup> Unfortunately, in this field, there is little evidence that economic analysts have developed satisfactory general principles prior to searching for particular conclusions. The fundamental problem to be faced in the evolution of an adequate set of financial accounts is the development of a satisfactory theory regarding the role of finance in the economy. This evolution has yet to come. Meanwhile, however, those who are developing financial accounts should recognize that there are a number of hypotheses regarding the place of finance in the economy. One of the aims in planning accounts might be the investigation of such hypotheses. Any organized group of statistics must consist of aggregates compiled on some basis of classification. This is a responsibility which the statistician cannot evade by purporting to present "general-purpose" statistics. Once he adds two items together in one entry he is assuming that, in certain respects at least, they are similar. Once he produces totals or subtotals, he is indicating that

<sup>57</sup> P. J. Bjerve and Mikael Selsjord, "Financial Accounting Within a System of National Accounts," *Income and Wealth*, Series VIII, London, 1959, p. 74.

<sup>58</sup> F. Y. Edgeworth, "The Objects and Methods of Political Economy" (inaugural lecture, delivered in 1891, upon becoming Professor of Political Economy at the University of Oxford), *Papers Relating to Political Economy*, London, 1925, Vol. I, p. 4.

there are certain similarities in the entries. The only truly "general-purpose" statistics are records which identify each item. Once one progresses from listing to statistics, one is adopting certain bases of classification and is giving an inevitable bias to the final presentation. It is the duty of statisticians (including financial accountants) to ensure that these inevitable and, in good statistics, valuable biases are supported by the best logical analyses available. In choosing the most useful principles of analysis and the consequent classification to be used, the financial accountant should, at least to some extent, remember that the final presentation of his data cannot help but be directed toward specific ends. Consequently, he should classify the available information on the basis of certain clearly stated, definite preconceptions. Only if this is done will it be possible for work in this branch of economics to play its appropriate role in advancing knowledge of the manner in which different parts of the economy, and the economy itself, respond to measurable economic stimuli.

Given the desirability of a positive focus, the question arises as to whether it is most useful to compile a completely integrated set of accounts, or whether it is more satisfactory to restrict the statements to one or more of the simplified types of account which are to be found among the examples reviewed here. The approach toward a fully integrated system appears to be the most useful, and is being adopted by an increasing number of countries.<sup>59</sup> However, even if this be granted, the question arises as to whether financial accounts should be integrated with existing income-expenditure accounts, or whether they should be part of an independent system. Of the accounts which are directly subject to review in this paper, most of those conceived as integral parts of wider analyses are integrated with existing income-expenditure accounts, rather than constituting complete analytic statements separate, if not divorced, from traditional income-expenditure accounts. This approach seems to be the most logical. Because the present system of economic accounts assumes that borrowing and lending transactions ". . . cancel out and do not provide a net source for the finance of . . . domestic capital formation,"<sup>60</sup> it cannot fully perform its allotted task as ". . . a practical

<sup>59</sup> Even where the published statements are limited to the examination of specific problems, their authors are sensing a need to draw attention to the fact that these analyses are only parts of wider forms of analysis. For example, in a paper presented to the International Economic Association, in September 1959, "The Relative Responsibilities of Government and Central Banks in Controlling Inflation," the President of the Netherlands Bank outlines, in some detail, a complete system which integrates income and financial variables in the system of analysis used by the Bank in determining its policy, even though the Bank's published tables cannot be included among the "integrated" types of analysis which are recorded in the appendix.

<sup>60</sup> United Nations, *A System of National Accounts*, p. 10. It might be noted that this comment referring to "canceling out" might be made of almost any pair of entries in a system of double-entry accounts.

means of describing what is taking place in an economic system insofar as this can be expressed in terms of transactions between a set of accounts drawn up on the double-entry principle."<sup>61</sup> If financial statements are developed as an integral part of the income-expenditure structure of accounts, this latter concept will facilitate the comprehension of the financial accounts themselves, and will contribute to the completion of the economic accounting structure as a record of the transactions of the community.

If the present status of work in the field of financial accounting may better be regarded as one of expectancy rather than of general agreement, it would appear that we may reasonably expect progress to be made on two fronts:

1. The development of a more general theory of the role of finance in the economy
2. The solution of the purely statistical problems which arise in the extension of the traditional economic accounts so as to include financial accounts.

### *Appendix*

#### SURVEY OF FINANCIAL ACCOUNTS<sup>62</sup>

This survey is limited to a classification of the financial accounts published by official national organizations, and of the different statistical treatment of specific problems adopted, in the following seventeen countries:

Australia	Israel	Norway
Canada <sup>63</sup>	Italy	Sweden
Finland	Japan	United Kingdom
France	Mexico	United States <sup>63</sup>
Germany	Netherlands	Yugoslavia
India	New Zealand	

<sup>61</sup> Richard Stone, "Functions and Criteria of a System of Social Accounting," *Income and Wealth*, Series I, Cambridge, England, 1951, p. 1.

<sup>62</sup> The accounts published in each of these countries are discussed in some detail in the mimeographed statement referred to above, which is available, on request, from the Finance Division, Research and Statistics Department, International Monetary Fund, 19th and H Streets, N.W., Washington 25, D.C. The accounts available at the end of 1956 for forty-one countries are discussed in Dorrance and Aubanel, "Survey of Monetary Analyses" (in the twenty-four countries not covered in this appendix, monetary analyses or analyses of reserve money are the only financial analyses published).

<sup>63</sup> Although the United States and Canada are outside the immediate purview of this article, statements published by them are included in this appendix for comparative purposes.

## INTEGRATION OF SOCIAL ACCOUNTING SYSTEMS

Only those countries where an attempt has been made to compile either complete statements of intersector financial transactions or consolidated balance sheets for significant sectors or subsectors (other than the monetary system) are included here. Studies by private individuals are not included in this survey. International discussions are also consciously ignored. No reference is made to statements that are limited to the accounts of the monetary system which are available for thirty-seven countries. Nor are the analyses of reserve money, published in four countries, discussed. Further, the monetary surveys for the additional twenty-eight countries, published each month in *International Financial Statistics*, are not mentioned here.

At the risk of being forced to make arbitrary allocations, it is possible to attempt the following classification of the available statements.

### PART I. CLASSIFICATION BY TYPE OF ACCOUNT

- I. Consolidated accounts for financial institutions or analyses of factors leading to changes in liquidity
  - A. Netherlands: Causes of Changes in Total Domestic Liquid Resources<sup>64</sup>
  - B. Norway: Factors Affecting Domestic Liquidity<sup>65</sup>
- II. Statements encompassing all financial items
  - A. Statements directed toward an analysis of financial flows (i.e. transactions accounts)
    1. Independent statements
      - a. Integrated
        - (1) Canada: National Transactions Accounts<sup>66</sup>
        - (2) United States: Flow-of-Funds Accounts<sup>67</sup>
        - (3) Yugoslavia: Summary of Money-Flow Accounts<sup>68</sup>
      - b. Not integrated
        - (1) Italy: The Flow of Finance Funds and the Money Supply<sup>69</sup>
        - (2) Mexico: Savings Transactions<sup>70</sup>

<sup>64</sup> Netherlands Bank, *Report for the Year*.

<sup>65</sup> *Economic Survey*.

<sup>66</sup> Royal Commission, Canada, *Financing of Economic Activity in Canada*.

<sup>67</sup> *Federal Reserve Bulletin*.

<sup>68</sup> *Narodna Banka, Annual Report*.

<sup>69</sup> Bank of Italy, *Abridged Version of the Report for the Year*.

<sup>70</sup> Centro de Estudios Monetarios Latin Americanos (CEMLA), *Conceptos y Metodologica de Estimacion de Ahorro*.

## FINANCIAL ACCOUNTS IN FOREIGN COUNTRIES

- (3) Netherlands: Conspectus of Financing Transactions<sup>71</sup>
- (4) Norway: Movements in the Financial Balance Sheet<sup>72</sup>
2. Statements consistent with national income accounts
  - a. Integrated with savings-investment only
    - (1) Japan: Integrated Accounts of Financial Transactions and Investment-Saving<sup>73</sup>
    - (2) Norway: The Financing of Private Domestic Investment<sup>74</sup>
    - (3) Sweden: The National Budget<sup>75</sup>
  - b. Integrated with National Income
    - (1) Germany: Changes in Assets and Liabilities<sup>76</sup>
    - (2) Israel: Illustrative Compilation of the Net Funds Raised and Net Advances<sup>77</sup>
    - (3) Netherlands: Monetary Survey<sup>78</sup>
    - (4) United Kingdom: The Financing of Investment<sup>79</sup>
  - c. Integrated with national product
    - (1) Finland: Transfers of Income Between Public and Private Sectors<sup>80</sup>
    - (2) France: Lending and Borrowing Transactions<sup>81</sup>
    - (3) Germany: The Formation of Wealth and its Financing in the Federal Republic of Germany<sup>82</sup>
- B. Statements directed toward an analysis of liquidity (i.e. balance sheets)
  1. Complete balance sheets
    - a. Netherlands: The National Balance<sup>83</sup>
  2. Financial balance sheets only
    - a. Complete

<sup>71</sup> Netherlands Bank, *Report for the Year*.

<sup>72</sup> Central Bureau of Statistics, *Kredittmarkedstatistik*. The most significant tables and an explanation of the principles underlying their compilation are contained in Bjerve and Seisjord, "Financial Accounting . . ."

<sup>73</sup> Bank of Japan, *A Study of Flow of Funds in Japan*.

<sup>74</sup> *The National Budget of Norway*.

<sup>75</sup> *Reviderad Nationalbudget*.

<sup>76</sup> Deutsches Institut für Wirtschaftsforschung, *Vierteljahrshefte zur Wirtschaftsforschung*.

<sup>77</sup> Privately circulated.

<sup>78</sup> Central Planning Bureau, *Centraal Economische Plan*.

<sup>79</sup> Central Statistical Office, *National Income and Expenditure*.

<sup>80</sup> *Economic Survey*.

<sup>81</sup> "Les Comptes de la Nation," *Statistiques et Etudes Financieres*.

<sup>82</sup> Deutsche Bundesbank, *Monthly Report* (June issue).

<sup>83</sup> Central Bureau of Statistics, *Statistical Studies*, 1954, No. 3.

## INTEGRATION OF SOCIAL ACCOUNTING SYSTEMS

- (1) Japan: Summary of Financial Assets and Liabilities Balance Accounts<sup>84</sup>
  - (2) Norway: The Financial Balance Sheet<sup>85</sup>
  - b. Incomplete
    - (1) Mexico: Liquid Assets of Businesses and Individuals<sup>86</sup>
    - (2) United States: Flow-of-Funds Accounts<sup>87</sup>
- III. Statements limited to one sector
- A. The business sector
    1. Australia: Analysis of Company Accounts<sup>88</sup>
      - a. Nonfinancial companies
      - b. Financial companies
    2. India: Analysis of Company Accounts<sup>89</sup>
      - a. Public companies
      - b. Private companies
    3. Japan:
      - a. Supply of Industrial Funds<sup>90</sup>
      - b. Analysis of Financial Statements of Main Industrial Corporations<sup>91</sup>
    4. New Zealand: Combined Balance Sheets for Public Companies<sup>92</sup>
    5. United Kingdom:
      - a. Company Finance and Investment<sup>93</sup>
      - b. Company Income and Finance<sup>94</sup>
    6. United States: Sources and Uses of Corporate Funds<sup>95</sup>
  - B. The personal sector
    1. United Kingdom: The Capital Account of the Personal Sector<sup>96</sup>
    2. United States:
      - a. Estimates of Personal Saving and its Disposition<sup>97</sup>
      - b. Volume and Composition of Individuals' Savings<sup>98</sup>

<sup>84</sup> Bank of Japan, *Flow of Funds*.

<sup>85</sup> Central Bureau of Statistics, *Kredit marked statistik*.

<sup>86</sup> Bank of Mexico, *Trigesimasexta Asambleas*.

<sup>87</sup> *Federal Reserve Bulletin*.

<sup>88</sup> Commonwealth Bank of Australia, *Statistical Bulletin*.

<sup>89</sup> *Reserve Bank of India Bulletin*.

<sup>90</sup> Bank of Japan, *Economic Statistics Monthly*.

<sup>91</sup> Bank of Japan, *Analysis of Financial Statements of Main Industrial Corporations in Japan*.

<sup>92</sup> *Reserve Bank of New Zealand Bulletin*.

<sup>93</sup> Central Statistical Office, *National Income and Expenditure*.

<sup>94</sup> Central Statistical Office, *Economic Trends*.

<sup>95</sup> Department of Commerce, *Survey of Current Business*.

<sup>96</sup> Central Statistical Office, *National Income and Expenditure*.

<sup>97</sup> *Survey of Current Business*.

<sup>98</sup> Securities and Exchange Commission, *Statistical Bulletin*.

## FINANCIAL ACCOUNTS IN FOREIGN COUNTRIES

### PART II.<sup>99</sup> CLASSIFICATION OF STATEMENTS ENCOMPASSING ALL FINANCIAL ITEMS BY FOCUS OF ATTENTION

- I. Financial balances
  - A. France
  - B. Germany: The Formation of Wealth and its Financing
  - C. The Netherlands:
    - 1. Conspectus of Financing Transactions
    - 2. Monetary Survey
  - D. Norway: The Financing of Private Domestic Investment
  - E. Sweden
  - F. United Kingdom
  - G. Yugoslavia
- II. Liquidity balances—Netherlands: Monetary Survey
- III. Total borrowing
  - A. Italy
  - B. Norway: The Financing of Private Domestic Investment
- IV. Neutral
  - A. Canada
  - B. Norway: Movements in the Financial Balance Sheet
  - C. United States
  - D. Finland
  - E. Germany: Changes in Assets and Liabilities
  - F. Israel

### PART III. CLASSIFICATION OF STATEMENTS BY SECTORIZATION

- I. Identification of businesses and individuals
  - A. The separate sectors identified
    - 1. Canada<sup>100</sup>
    - 2. France
    - 3. Germany
      - a. Formation of Wealth and Its Financing
      - b. Changes in Assets and Liabilities
    - 4. Israel
    - 5. Japan<sup>101</sup>
    - 6. Mexico: Savings Transactions
    - 7. Netherlands: The National Balance
    - 8. The United Kingdom

<sup>99</sup> This and the subsequent classifications are limited, unless indicated otherwise, to the accounts covered in Part I, Section IIA of this appendix. Reference is made to the country of publication only, unless more than one set of accounts is published in the country.

<sup>100</sup> Not in the current transactions account.

<sup>101</sup> The company sector is also subdivided into large and small companies and, alternatively, by industry groupings.

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9. The United States
10. Yugoslavia<sup>102</sup>
- B. The two sectors combined
  1. Finland
  2. Italy
  3. Netherlands: Monetary Survey
  4. Norway
    - a. The Financing of Private Net Investment
    - b. Factors Affecting Changes in Liquidity
    - c. Movements in the Financial Balance Sheet
  5. Sweden
- II. Identification of the central government
  - A. The central government considered to be a sector
    1. Canada
    2. Italy
    3. Japan
    4. Mexico: Savings Transactions
    5. Netherlands: Monetary Survey
    6. Norway:
      - a. Factors Affecting Changes in Liquidity
      - b. Movements in Financial Balance Sheet
    7. Sweden
    8. United Kingdom
    9. United States
  - B. All governments combined in one sector
    1. Finland
    2. France
    3. Germany:
      - a. Formation of Wealth and its Financing
      - b. Changes in Assets and Liabilities
    4. Israel
    5. Netherlands: The National Balance
    6. Yugoslavia
- III. Identification of social insurance accounts
  - A. Social insurance considered to be part of the government sector
    1. Canada
    2. Finland
    3. France
    4. Germany:
      - a. Formation of Wealth and its Financing
      - b. Changes in Assets and Liabilities

<sup>102</sup> The investment activities of enterprises are a separate sector.

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5. Israel
  6. Italy
  7. Japan
  8. Mexico: Savings Transactions
  9. Norway: Factors Affecting Changes in Liquidity
  10. Sweden
  11. United Kingdom
  12. United States
  - B. Social insurance separately identified
    1. Netherlands:
      - a. Monetary Survey
      - b. The National Balance
    2. Norway: Movements in the Financial Balance Sheet
    3. Yugoslavia
- IV. Identification of financial institutions sector
- A. A financial-institutions sector identified
    1. With a separate subsector for the monetary system
      - a. With the monetary system further subsectored
        - (1) Israel
        - (2) Italy
        - (3) Japan
        - (4) Mexico: Savings Transactions
        - (5) Norway:
          - (a) Factors Affecting Changes in Liquidity
          - (b) Movements in the Financial Balance Sheet
        - (6) Sweden
      - b. With no subsectoring of the monetary system
        - (1) Canada<sup>103</sup>
        - (2) Netherlands: The National Balance
        - (3) United States<sup>104</sup>
        - (4) Yugoslavia
    2. Without a separate subsector for the monetary system:  
France
  - B. No separate sector for financial institutions
    1. Finland
    2. Germany:
      - a. Formation of Wealth and its Financing
      - b. Changes in Assets and Liabilities
    3. Netherlands: Monetary Surveys
    4. United Kingdom

<sup>103</sup> Subsector data are available in the Supplementary Tables.

<sup>104</sup> Subsector transactions data may be derived from the balance sheets in which data are recorded for the separate parts of the monetary system.

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### PART IV. CLASSIFICATION OF STATEMENTS BY TREATMENT OF ACTIVITIES OF SELF-EMPLOYED PERSONS

- I. Included completely in the personal sector
  1. Japan
  2. United Kingdom
- II. Net profits recorded as a transfer to the personal sector
  1. France
  2. Israel
  3. United States
- III. Direct financing activities recorded
  1. Canada
  2. Mexico: Savings Transactions
  3. United States

## C O M M E N T

ROBERT L. SAMMONS

Mr. Dorrance has presented an interesting paper, which seems to me to serve two important functions. First, it brings together in summary form the more elaborate systems of financial statistics now officially compiled around the world. In the main, except in North America, these are not fully integrated presentations of all the transactions—financial and nonfinancial—of each of the principal sectors of an economy, but are limited in scope and “directed toward the analysis of particular problems, or particular aspects of more general problems.” For this reason, the series are usually limited to data permitting analyses of changes in the money supply or in liquidity. Even the more elaborate ones do not generally separate the private, nonbanking sector into business and household components.

I suppose most of the general statistical series that we now have could be classified into two groups, according to the principal forces that stimulated their creation. First, and certainly more numerous, are those which serve some particular and special use, either in the formation or the implementation of policy. Most of the systems of financial statistics summarized by Mr. Dorrance clearly fall in this category. On the other hand, some of our best known series, such as the balance of payments and national income, were created originally—I venture to say—mainly to satisfy a general intellectual curiosity about the workings of the economic system rather than to meet any immediate, specific need for information.<sup>1</sup> The industrial production index and the flow-of-funds data may also fall in this

<sup>1</sup> In this connection, the following quotation from an article by a distinguished participant in this conference may be of interest:

second category. That does not mean, however, that such series are less useful than the first-mentioned category—only that many of their important uses were discovered after the data were available rather than before.

One question that occurs to me on a perusal of this paper is: What advice should be given to those countries, especially the underdeveloped ones, who have not even proceeded far enough to be included in the present summary? What kinds of financial data are apt to be most useful in facing the problems associated with planning for economic development? Obviously, there can be no single, clear-cut answer to these questions. The need for data on the money supply of course remains of prime importance; in most underdeveloped countries, the near-money substitutes which provide additional liquidity are relatively much less important than in the developed countries. Money-supply data are especially important because underdeveloped countries seem to have a more-than-average susceptibility to inflation, and the degree of inflation (as measured by price increases) is usually closely coordinated with the expansion of the money supply. For these countries, the traditional analysis of the expansion of the circulating medium according to domestic and external factors, and within the former, according to whether the credit expansion provides finance to the government or to the private sector, is essential.

But there is—or at least should be—a special interest in the underdeveloped countries in the financial structure as such—the channels through which the funds made available by saving are channeled into investment. This interest is evident, for instance, in the CEMLA study for Mexico cited in Dorrance's appendix. This study provides for Mexico, for one year, a quite detailed breakdown of the changes in financial assets and liabilities by major sectors. Both the degree of sectoring and the breakdown by type of transaction, given the structure of the Mexican economy, compare favorably with the scheme suggested, for instance, in Mr. Sigel's paper. As to its presumed usefulness for underdeveloped countries, the following quotation from the Mexican paper might be of interest:

The error is frequently made of considering that studies of the role of savings in an economy should be made only in developed

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“Intellectual curiosity is undoubtedly an important motive force in economic research in government. It is present in most economic studies; in some it is the main motive force. As illustrations of this latter sort of study may be cited the work on the national income and on the balance of international payments by the Bureau of Foreign and Domestic Commerce. . . .” (Morris A. Copeland, “Economic Research in the Federal Government,” *American Economic Review*, September 1941, p. 530).

countries, like the United States, where a large body of statistical information is available, and that they should not be begun in others, particularly the underdeveloped ones, whereas in reality precisely the opposite is true. In the first place, the necessity for analyzing the role of savings seems to be greater in the case of countries in the process of development, where the demand for funds and resources exceeds the capacity of the economy to provide them and at the same time savings tend towards speculative or non-productive investment. In the second place, the simpler the structure of an economy, the easier it ought to be to make estimates of savings, a task which is made more difficult with the growth and increasing complexity of the economy and of its financial organization.

The same sort of concern is expressed by Descartes in his study, "Savings and Investments in Puerto Rico," which concludes with a long list of recommendations whose objective is to strengthen the financial machinery of the economy with a view to an improved application of savings to investment in order to promote economic development.

For these purposes, of course, it is necessary to have only the data on the "tangible capital" and "financial" accounts—to use Mr. Sigel's terminology. While such accounts need to be "integrated" with the income and product accounts to provide a comprehensive system of data covering all economic transactions, I do not believe there is any substantial need to recast the income and product accounts as we now have them simply to make them fit a flow-of-funds concept in order to accomplish the integration, although some further sectoring is obviously necessary.

The paper under consideration rightfully, I think, focuses attention on the differences in approach between the "general" and "problem-solving" types of financial statistics, and should help to clarify our thinking about the relative place and importance of each type. However, in making this distinction, Mr. Dorrance perhaps puts a little too much emphasis on the differences in the purposes served by what we are now calling, somewhat ambiguously, financial statistics and those served by the traditional income and product data. The latter, it is true, deal only with transactions involved in the production and sale of the current output of the economy (and imports), and the distribution of the income earned in that production. These data, too, ordinarily involve a greater degree of netting than might be desirable for purposes of analyzing the uses of money and credit. But the addition of these financial transactions to the system

has always seemed to me to be more in the nature of an extension of an existing apparatus than something completely new and different. Integration of the "old" and the "new," then, involves mainly the adoption of a system of sectoring that illuminates equally well both the "goods and services" and the "financial" transactions or, if that is not possible, that provides the maximum amount of illumination for both types of transactions combined. This objective can be achieved by proper classification of transactions and the insertion of appropriate subtotals.

In any event, whatever the divergence in objectives of the two series, Mr. Dorrance seems to come out on the side of integration as evidenced by his statement that "in looking toward the future, it might be emphasized that income-expenditure accounts have proved to be a most useful addition to the body of economic statistics. Economists are familiar with their content, significance, uses, and weaknesses. This intellectual capital should be preserved, if possible."

However, I believe that he has, to some extent, confused the function of economic analysis with that of gathering and publishing standard statistical series. Although somewhat qualified, his view seems to be that the classification and presentation of financial data ought to be based on some specific hypothesis, or theory, regarding the role of finance in the economy. This view appears early in the paper, in the following words:

Most of those [financial accounts] prepared outside North America consciously eschew the aim of the Federal Reserve where: "In designing the accounts, effort was made to keep the structure of the system adaptable and flexible so as not to restrict unduly the user's freedom to select hypotheses for testing or his freedom to combine or correlate data in testing. The structure of the system is thus not geared to any particular problem within the wide range of analysis for which the accounts are appropriate; nor is it geared to any specialized theory, hypothesis or approach."<sup>2</sup> The non-North American accounts are, in most cases, directed toward the analysis of particular problems, or of particular aspects of more general problems. Practically all of them are based on definite theoretical foundations, or are directed toward the examination of specific hypotheses.

This point of view is made even more explicit in the summary:

Any organized group of statistics must consist of aggregates compiled on some basis of classification. This is a responsibility

<sup>2</sup> *Federal Reserve Bulletin*, August 1959, p. 830.

which the statistician cannot evade by purporting to present "general-purpose" statistics. Once he adds two items together in one entry he is assuming that, in certain respects at least, they are similar. Once he produces totals or subtotals, he is indicating that there are certain similarities in the entries. The only truly "general-purpose" statistics are records which identify each item. Once one progresses from listing to statistics, one is adopting certain bases of classification and is giving an inevitable bias to the final presentation. It is the duty of statisticians (including financial accountants) to ensure that these inevitable and, in good statistics, valuable biases are supported by the best logical analyses available. In choosing the most useful principles of analysis and the consequent classification to be used, the financial accountant should, at least to some extent, remember that the final presentation of his data cannot help but be directed toward specific ends. Consequently, he should classify the available information on the basis of certain clearly stated, definite preconceptions. Only if this is done will it be possible for work in this branch of economics to play its appropriate role in advancing knowledge of the manner in which different parts of the economy, and the economy itself, respond to measurable economic stimuli.

My own view coincides with that expressed by the Federal Reserve compilers—that the job of the statistician, be he the compiler of national income, balance of payments, flow of funds, or whatever, is to present the data in as much detail as feasible, and with logical classifications (from a definitional, not a causal, point of view). All economic transactions can be classified into three major categories: (1) the sale or purchase of "real" goods and services; (2) transfers, where there is no *quid pro quo* on one side—gifts and taxes, mainly; and (3) exchanges of capital assets, including evidences of debt and equities. Payments to the factors of production can be thought of as a fourth major category or, as is common, can be included in the goods and services group. Within these major groups, of course, sub-classifications must be employed, and these cannot help but reflect to some extent the judgments of the compilers as to what categories may be interesting or useful. But I do not believe it is the responsibility of the statistical compiler to try to solve problems by method of presentation or arrangement of data that can only be solved by the use of analytic methods.

I do not believe, for instance, that one needs to have a particular theory of how the mechanism of adjustment works in international

trade to decide on the manner of presenting balance of payments statistics. And, certainly, economists of all persuasions—including the most violent anti-Keynesians—find the existing income and product data useful and enlightening. So it seems to me to be with financial statistics. A logical system of classification of economic transactions can by now, I assume, be agreed to by almost everyone. There will, of course, be differences of opinion regarding the sectoring—the most logical systems for the United States or the United Kingdom, for instance, will undoubtedly not serve as well for Paraguay. And no one system of classifying “financial” transactions will suit everyone. But this is not the same thing as saying that the compilers of the data must have some “clearly stated, definite preconceptions”—if by this phrase is meant a well-worked out theory—in mind before setting up the classifications, either of sectors or of transactions. The job of the *compiler* is to present as much information as possible and let the economic analyst develop and test whatever theories he wishes. And if the analyst needs more data, let him ask for more. But let’s not restrict the activities of the analyst by limiting him to a set of data, or a particular arrangement of data, that reflects the theories of the compilers.

REPLY by Mr. Dorrance

In his most complimentary criticism of my paper,<sup>1</sup> Mr. Sammons raises a number of valuable points which I believe warrant further discussion among statisticians. Furthermore, he raises a question which deserves an answer. Hence I am moved to submit this reply.

I start from the same premise as the present Professor of Statistics at the University of London:

I see it [i.e. statistics] myself, not as the pedestrian science of handling numerical data, not even as a comparatively new branch of scientific method, but as the matrix of quantitative knowledge of nearly every kind, as the principal instrument yet devised by man for bringing within his grasp the terrifying complexity of things and relations-between-things, and as a powerful illuminant of the process of rational thought itself.<sup>2</sup>

I gather that Mr. Sammons would accord a more limited role to the statistician. To demonstrate his point he uses two examples. These may equally well be used to support the position taken in my paper.

<sup>1</sup> Some of the differences between the paper published here and the one presented to the Atlantic City meeting were incorporated in order to clarify and strengthen the position which was attacked by Mr. Sammons at Atlantic City.

<sup>2</sup> M. G. Kendall, “The Statistical Approach,” *Economica*, May 1950, p. 127.

It can be maintained that the balance of payments and national income accounts were *not* originally created mainly to satisfy a general intellectual curiosity about the workings of the economic system. Rather, they *were* originally compiled to meet specific needs for information.

The present form of the balance of payments accounts, and particularly their division into current, transfer, and capital accounts (with the latter divided into transactions at long- and short-term by the private and official sectors) is the final result of a fairly consistent evolution. In practice, the present generally accepted balance of payments statements are relatively slight modifications of the original presentations developed, primarily by White, Williams, and Viner, to serve the specific purpose of organizing data so that they could investigate and extend the theoretical postulates which were so clearly expressed by Taussig.

The place of theory in the development of national income accounts has perhaps been expressed most succinctly by Stone in his "Functions and Criteria of a System of Social Accounting":

Thus an accounting structure provides a definite statement of the theoretical concepts we find interesting . . . To proceed empirically, even if we recognise the need to record a transaction, would simply mean that we should accept the empirical correlate of someone else's theoretical definition which might be quite unsuited to our purposes and in any case would not avoid the inevitable element of theory.<sup>3</sup>

Finally, Mr. Sammons' example of a classification based on "a definitional, not a causal, point of view" deserves inspection. Why are wages and salaries ("factor income payments") similar to transactions in commodities ("the sale or purchase of 'real' goods and services"), but different from social security payments ("transfers, where there is no *quid pro quo* on one side") from a definitional, and not from a causal, point of view? Similarly, why are intergovernment grants similar to social security payments, but different from intergovernment loans ("exchanges of capital assets") from this point of view? I suggest that most of the useful definitional classifications in economics are based on causal criteria.

In my paper, an attempt was made to show that the wide range of presently published financial accounts would indicate that no one had yet presented a satisfactory set of theoretical concepts from which the statistician could develop a group of generally acceptable empirical

<sup>3</sup> *Income and Wealth*, Series I, pp. 3-4.

correlates. Hence, it fell to the statistician to organize his data in order that the theoretical concepts might be investigated. I conclude by recalling the remarks of an earlier, distinguished occupant of the Chair of Statistics in London:

Statistics are numerical statements of facts in any department of enquiry, placed in relation to each other; statistical methods are devices for abbreviating and classifying the statements and making clear the relations.<sup>4</sup>

When the relations are not agreed, the statistician cannot avoid the responsibility of investigating them and of developing principles of classification which may serve as guides to others. Consequently, he cannot help but place his data in relation to each other on the basis of definite hypotheses, which should be clearly stated. For "Facts, arranged in the right way, speak for themselves; unarranged, they are as dead as mutton . . . As always it is the arrangement which is the delicate operation."<sup>5</sup>

Turning to Mr. Sammons' question, I extend the quotation from the Polak paper given in mine: "In attempting to understand the role of the different sectors in the economy in expansion and contraction, we should attempt to branch out from money and banking statistics and attempt to build up as complete a picture of borrowings and lendings as we can achieve." I would not propose a system of accounts which identified changes "according to domestic and external factors." In practice, most of the so-called "external factors" prove to be largely influenced by domestic factors. Rather, I would, first of all, develop a somewhat more neutrally sectorized set of accounts, starting with those for the monetary system.

I would progress by grafting data for the other financial institutions and the government to these foundation accounts. Balance of payments entries should be incorporated as soon as relatively reliable statements are compiled. At a considerably later stage, I would envisage compiling data from company balance sheets. Only very much further ahead would I contemplate venturing into the uncharted morass of direct consumer and small-business investigations.

In other words, financial accounts should start from readily available, relatively accurate data. The expansion of the accounts should be dictated by the availability and the relative reliability of further information. If properly organized, the data incorporated in the accounts can provide information on the activities of those sectors for which no direct information is available. A complete set

<sup>4</sup> (Sir) A. L. Bowley, *An Elementary Manual of Statistics*, London, 1915, p. 1.

<sup>5</sup> Hicks, *The Social Framework*, p. 3.

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of accounts cannot be compiled overnight. It is more valuable to have relatively simple accounts, the content of which can be considered reasonable approximations to the truth, than to prepare conceptually complete, aesthetically pleasing, and theoretically sophisticated statements, with entries which are not based on anything more than guesses that cannot even be qualified as "intelligent."