

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Studies in Income and Wealth, Volume 1

Volume Author/Editor: The Conference on Research in Income and Wealth

Volume Publisher: NBER

Volume ISBN: 0-870-14156-2

Volume URL: <http://www.nber.org/books/unkn37-1>

Publication Date: 1937

Chapter Title: Accounting Methodology in the Measurement of National Income

Chapter Author: Clark Warburton

Chapter URL: <http://www.nber.org/chapters/c8137>

Chapter pages in book: (p. 67 - 110)

Part Two

ACCOUNTING METHODOLOGY
IN THE MEASUREMENT OF
NATIONAL INCOME

CLARK WARBURTON
FEDERAL DEPOSIT INSURANCE
CORPORATION

ACCOUNTING METHODOLOGY IN THE MEASUREMENT OF NATIONAL INCOME¹

CLARK WARBURTON

I Terminology and Inclusiveness of Items

1 RELATION OF TERMINOLOGY TO THE CHARACTER OF ITEMS LISTED AND EVALUATED

A SOLUTION of the vexatious problem of terminology in measurement of national income may be found by applying the principle that the terms used should be descriptive of the items listed and evaluated rather than of the total value obtained.

Balance sheet terminology may be used as an illustration. Accountants do not describe the listing and evaluation of the items on the liability side of a balance sheet as a method of estimating the value of the assets, or attach the title 'total assets' to the total of the items on the liability side. Such a procedure would be more confusing than the present practice of using separate terms which are descriptive of the items listed, and of saying 'total assets equal total liabilities' when the measurements have been made in such a way as to produce equality of totals.

No less than five separate groups of items may be evaluated in

¹ This paper, except for the first two sections, is an adaptation of several memoranda prepared in connection with the Brookings Institution's study of the distribution of wealth and income in relation to economic progress. The first two sections are an adaptation of comments made in connection with a meeting of the Washington chapter of the American Statistical Association in June 1936.

For other discussions of concepts of national income see M. A. Copeland, Part One, and Gerhard Colm, Part Five.

obtaining what is now commonly called 'national income'. If in evaluating these groups of items we use a procedure analogous to that used in balance sheets, we have a set of terms such as those listed in Table 1. The specific terms used in this table are unsatisfactory in some respects, and more appropriate terms can probably be found to substitute for some of them.

TABLE 1
METHODS AND TERMINOLOGY FOR MEASUREMENT OF
NATIONAL INCOME

| CHARACTER OF ITEMS LISTED AND EVALUATED | PROPOSED DESIGNATION OF | | |
|---|---|---|---|
| | ITEMS | TOTAL VALUE | METHOD |
| Wages, salaries, dividends, interest, etc., paid by business enterprises, governments, etc., to individuals | Distributive shares, or income derived from (a) industries, (b) regions, (c) types of payment | Total income distributed by, or derived from, business and social enterprises | Summation of distributive shares |
| Selling value of each industry's output less purchases from other industries | Value added by manufacturing, etc. | Total value added by production | Value added summation |
| Sales to ultimate consumers and for capital expansion by (a) industries, (b) types of goods | Final products by (a) industries, (b) types of goods | Total value of final products ² | Summation of value of final products ² |
| Income received by various classes of individuals, or from various sources, including income received by business and social organizations on behalf of individuals | Income received by (a) sources, (b) classes of recipients | Total income received | Summation of income received |
| Expenditures for consumption and savings by families, individuals and social groups | Consumer purchases and savings | Total value of consumer purchases and savings | Summation of consumer purchases and savings |

² The writer has at various times used the terms 'end-products' and 'ultimate products' to designate the items here called 'final products'. None of these terms is entirely satisfactory, since physical and psychological satisfactions, rather than the goods and services included in this concept, may be considered the ultimate products of economic activity. Food, clothing, additions to capital facilities, etc., however, may be considered the final products of business enterprises.

In making compilations of these five types it may be desirable to select items in such a way that, except for errors due to inadequate information, the five totals are all equal. On the other hand, the various purposes for which the compilations are desired may be best served by selections of items in ways that do not yield uniform totals. However, it should always be possible to identify causes of differences among the totals, and thus to compare them with one another and to use them as mutual checks on the accuracy of the figures obtained.

2 USE OF TERMS 'NATIONAL INCOME' AND 'NATIONAL PRODUCT'

The term 'national income' is not used in Table 1 to designate any of the various totals, and it may be suggested that this term be retained only as a general designation of a field of study without specific attachment to any of the various types of aggregate. However, attention may be called to the fact that the definitions of national income made by various writers are such that this term may more appropriately be applied to the total value of sales to ultimate users by types of goods (adjusted for depreciation and depletion) than to any of the other totals listed in the table, though no investigation of national income in the United States has ever been made by the process of listing and evaluating the items constituting such ultimate sales. The term 'national product' is more descriptive than 'national income' of the concept described in most definitions of national income.

3 INCLUSIVENESS OF ITEMS

It will never be possible to establish a definitive list of items of which the total is to be regarded as the true value, or closest approximation to the true value, of national income for two reasons. (a) At any given time certain items may or may not be desired, depending on the purpose of the evaluation and the use to be made of the data. (b) Evaluation of various items necessarily depends in part upon the social and economic arrangements under which goods and services are produced. As such arrangements change, methods and totals formerly appropriate may become inappropriate.³

³ Further discussion of these points will be found in Sec. III; cf. also, Colm, Part Five, Sec. I, 2.

It may be possible, nevertheless, to develop a group of modifiers so that workers in the field of national income will have at hand a uniform set of terms for each of the five types of total mentioned above, each set consisting of a series of terms more or less inclusive of the controversial items. For example, the sum of incomes received by personal income recipients, designated above as 'total income received', might be represented by several standard forms, such as the following:

Total current cash individual income;

Total current individual income (current cash income plus imputed value of food used by producers thereof, rental value of owned houses, etc.);

Total realized individual income (current individual income plus realized capital gains);

Total realized and accrued individual income (realized income plus changes in market or book value of property owned);

Total realized individual and collective income (realized individual income plus corporate surplus, and plus income of governments and philanthropic institutions utilized for the benefit of individuals);

Total realized and accrued individual and collective income (realized individual and collective income plus changes in market or book value of properties owned).

In developing such a set of standard terms for each of the five types of total, careful attention should be given to those already used, so as to cause as few conflicts as possible.

II Measurement of the Value of Final Products

1. FINAL PRODUCTS IN DEFINITIONS OF NATIONAL INCOME

The term 'national income' has in the past been so defined as to suggest that the measurement of the total value of the economy's final products has been pursued more intensively than actually has been the case.

In his book, *The Wealth and Income of the People of the United States*, published in 1915, Willford I. King made the following statement (p. 124):

"From our farms and forests, out of our mines and rivers and lakes, from our shops and factories, and from our theatres, our schools, and our churches flows forth a constant stream of finished commodities and services ready for consumption by the people. . . . In addition to this stream, whose annual flow constitutes the national dividend, there is produced, each year, a quantity of new capital goods, much greater than that used up by the industrial processes. This additional capital represents the savings of the nation. These savings, together with the national dividend, constitute the national income—the total product of the efforts of the citizens."

Simon Kuznets, in summarizing the national income study made jointly by the National Bureau of Economic Research and the Department of Commerce, gave a similar definition of national income produced:

"If all the commodities produced and all the direct services rendered during the year are added at their market value, and from the resulting total we subtract the value of that part of the nation's stock of goods that was expended (both as raw materials and as capital equipment) in producing this total, then the remainder constitutes the net product of the economy during the year. It is referred to as the national income produced, and may be defined briefly as that part of the economy's end product that results from the efforts of the individuals who comprise a nation."⁴

This definition of national income produced was repeated by R. R. Nathan in presenting the estimates of the Department of Commerce for 1934:

"The *national income produced* represents the aggregate value of all commodities produced and services rendered, less the value of raw materials depleted and capital equipment worn out in the processes of production. More briefly it may be defined as the net product of the national economy."⁵

Maurice Leven, who prepared estimates of national income

⁴ *Bulletin 49*, National Bureau of Economic Research (January 26, 1934).

⁵ *Survey of Current Business*, November 1935.

used by the Brookings Institution in *America's Capacity to Consume*, uses substantially the same definition:

"The national income may . . . be defined as the money equivalent of the goods and services produced within a given period of time."⁶

Again, in a chapter in which Mr. Leven is co-author with H. G. Moulton, it is stated:

"The national income may be defined as the *net* volume of goods and services produced by a nation within a given period—a year."⁷

From these definitions it might be supposed that the process of measuring national income, or value of the net product of the economy, would comprise the listing and evaluation of the various commodities and services acquired by consumers, and of additions to capital acquired by business concerns with allowance for changes in inventories. In fact, however, none of the persons whose definitions of national income I have quoted has used this direct process. They have evaluated a different list of items.

2 USEFULNESS OF MEASURING THE VALUE OF FINAL PRODUCTS

Several important purposes would be served by an estimate of the value of the national product, or amount of the national income, built up by the process of listing and evaluating the various items of consumption and of additions to capital facilities. First, measurement of national income in terms of the items of final products shows more clearly than any other method the essential characteristics of business fluctuations. It reveals clearly what segments of the economy have failed to produce their accustomed quotas of commodities and services. Have we curtailed our production of houses and furniture more or less than education or recreation? Have we retrenched more on the making or cleaning of clothes?

We do know, in a general way, what types of industry have been most depressed. More precise measurements, however, would lead

⁶ Maurice Leven, H. G. Moulton and Clark Warburton (Brookings Institution, 1934), p. 137.

⁷ *Ibid.*, p. 9.

directly to the question: Have we ceased to produce these things because we want no more than we have made, or because we have produced them in excess relative to other final products? If the former, to what other items should the nation's productive efforts be directed, and how can our productive energies be shifted to them? If the latter, what can we do to restore production to the pre-depression level?

Second, measurement of national income in terms of final products will show not only the essential characteristics of business fluctuations but also the more gradual changes in the character of the economy. As time goes by, what types of commodities and services absorb larger or smaller proportions of the income of the population? Larger or smaller proportions of the nation's productive energies? Do we spend relatively more, or less, for tobacco, for recreation, for religion, than we did a few years ago? Are expenditures for these items increasing more, or less, rapidly than expenditures for dairy products, citrus fruits, or education?

Third, measures of the value of the various commodities and services used by the population and of additions to productive facilities are needed in connection with studies of productive capacity. A recent costly investigation in this field was distorted, and its results made unreliable, because of failure to relate productive capacity to consumption. *Per se* capacity to produce black powder, steel or bituminous coal is of no particular importance—no more important than capacity to blow soap bubbles or to place pins in pin cushions. Measurements of capacity have substantial significance only when capacity to produce is related to the end-products that men want.

The fourth and most important reason for advocating direct estimates of the value of the various types of final product is that they emphasize the fundamental aspects of the economic system and provide a coordinated view of the national economy. The basic purpose of all economic activity is to provide commodities and services for the use of human beings, and the chief public purpose of government regulations of or interference with economic life is to furnish the people more abundantly with the commodities and services they desire. This is especially true when productive facilities are being operated far below normal capacity.

This purpose needs emphasis. Had we kept it before us, we

would have asked, what is the best method of providing the population with food, shelter, education, recreation, mobility, rather than asking, how can we save property values or how can we provide jobs for all the unemployed? Property values, money incomes and jobs are means to an end. As a nation we have tried to make them ends in themselves, and for this the economists and statisticians must take a fair part of the responsibility. For decades economists and statisticians have emphasized the gathering of statistics on property values, money incomes and employment. We need such statistics—more of them and better than we have—but we should place the greater emphasis on the commodities and services furnished the people of the nation.

3 TECHNICAL PROBLEMS

Brief mention may be made of a few of the technical problems encountered in this type of measurement of national income, or national product.

a) It is apparent that estimates of retail values of most items are difficult to make on account of the great variations in prices and in price margins. However, from the 1929 census of distribution and the 1933 and 1935 censuses of business, together with other data made available in recent years, we can prepare estimates of about the same order of accuracy as well-known estimates of national income by other methods. With respect to most items various methods of estimation may be used to check one another. In the case of total food costs for the nation in 1929, for example, five methods of estimate have been used, largely independent of one another.⁸ Three of these methods yielded estimates between 19½ and 20½ billion dollars, and there are reasonable explanations why the other two estimates come out respectively at about one billion dollars above, and two billion dollars below these limits.

b) It is necessary to make arbitrary assumptions as to the proportions of some items purchased by consumers and by business enterprises. The most conspicuous case of this difficulty relates to transportation. How much of the passenger revenue of railroads and of other common carriers is derived from tickets purchased

⁸ Unpublished estimates prepared by the writer in connection with the Brookings Institution's study of the distribution of national income in relation to economic progress.

by individuals out of their personal incomes, and how much from tickets purchased by business concerns and other organizations? How large a proportion of new automobiles, and of the cost of operating automobiles, is personal and how much is charged to business costs?

c) Peculiarly intricate problems are encountered in evaluating the various services such as education, medical service, and relief, provided by government agencies. These problems relate both to the difficulty of separating government services to persons from government services to business concerns, and to problems of accounting in relation to taxation.

d) Illegal goods and services cannot be ignored, and such items are especially difficult to evaluate.

e) We must distinguish between the gross and net value of additions to capital facilities, and segregate capital funds derived from capital gains and depreciation allowances from those derived from savings out of current income.

III Influence of Accounting Methods and Social Arrangements upon the Measurement of the Income and Expenditures of a Community

Both accounting methods and the economic and social arrangements under which goods and services are produced affect measurements of the money value of the total income of the people in a given community.

To illustrate the effect of accounting methods, let us consider first two cases from accounting practice with respect to statements of assets and liabilities.

(1) A manufacturer's statement of assets and liabilities may be made up in either of the following forms:

| ASSETS | | LIABILITIES | |
|--|-----------------|-------------------------------|-----------|
| | <i>Method A</i> | | |
| Plant and equipment (cost or book value) | \$500,000 | Capital stock and surplus | \$500,000 |
| Current assets | 300,000 | Bonds and current liabilities | 200,000 |
| | | Reserve for depreciation | 100,000 |
| Total | \$800,000 | | \$800,000 |

| ASSETS | | LIABILITIES | |
|--|------------------|-------------------------------|------------------|
| <i>Method B</i> | | | |
| Plant and equipment (cost or book value) | \$500,000 | Capital stock and surplus | \$500,000 |
| Less depreciation | 100,000 | Bonds and current liabilities | 200,000 |
| Current assets | 300,000 | | |
| Total | \$700,000 | | \$700,000 |

(2) The statement of a Federal Reserve member bank which has sold United States government bonds to a Federal Reserve bank under a re-purchase agreement may be prepared in either of the forms below.

| ASSETS | | LIABILITIES | |
|---|--------------------|---------------------------|--------------------|
| <i>Method A</i> | | | |
| Loans and discounts | \$500,000 | Deposits | \$700,000 |
| United States securities (in own vault) | 300,000 | Capital stock and surplus | 350,000 |
| Other assets | 300,000 | Other liabilities | 50,000 |
| Total | \$1,100,000 | | \$1,100,000 |

| <i>Method B</i> | | | |
|--|--------------------|---------------------------|--------------------|
| Loans and discounts | \$500,000 | Deposits | \$700,000 |
| United States securities (in own vault) | 300,000 | Capital stock and surplus | 350,000 |
| United States securities (at Federal Reserve Bank) | 100,000 | Due Federal Reserve Bank | 100,000 |
| Other assets | 300,000 | Other liabilities | 50,000 |
| Total | \$1,200,000 | | \$1,200,000 |

In these cases the method of accounting (that is, the method of evaluating assets and liabilities) makes a difference in the figures obtained as the value of total assets, and of total liabilities. It cannot be said that either method is wrong or inaccurate. For a particular purpose, however, one method may be more appropriate than the other. It may also be noted that in either of these cases a third figure for the value of total assets or total liabilities would probably be obtained by an appraisal of the assets, and still another by the price that could be obtained if the assets were sold.

Let us now proceed to a few illustrations of statements of income and expenditures, taking the case of a consumers' coopera-

tive society operated on English lines. Many consumers' cooperatives in England supply to their members various free services, such as the use of libraries, education, recreation. Let us assume, for the sake of clarity in the illustration, that there are no taxes to be paid, and that the cooperative pays a separately operated company (or companies) for the various services (education, recreation, etc.) that it furnishes free to its members. Under these circumstances a statement of the receipts and disbursements of the cooperative might be made up as follows:

| | RECEIPTS | | DISBURSEMENTS |
|---------------|--------------|-------|---|
| Sale of goods | \$10,400,000 | | Paid to business concerns (designated as Group X) for supplies purchased |
| | | | \$6,000,000 |
| | | | Paid to business concerns (designated as Group Y) for services furnished free ($\frac{1}{3}$ to employees, $\frac{2}{3}$ to members) |
| | | | 900,000 |
| | | | Wages and salaries paid to own employees |
| | | | 2,000,000 |
| | | | Interest on stock (paid to members) |
| | | | 500,000 |
| | | | Dividends (balance of earnings) paid to members (stockholders) |
| | | | 1,000,000 |
| | | Total | \$10,400,000 |

The income paid out by (drawn from) the cooperative may be stated in more than one way. Whatever method is used with respect to income, there is a corresponding method that is appropriate with respect to expenditures.

| INCOME PAID OUT BY THE COOPERATIVE | | EXPENDITURES MADE FROM THIS INCOME | |
|---|-------------|--|-------------|
| | | <i>Method A</i> | |
| Cash wages and salaries to employees | \$2,000,000 | Food, etc., paid for in cash, purchased by employees | \$2,000,000 |
| Cash payments (interest and dividends) to members or stockholders | 1,500,000 | stockholders | 1,500,000 |
| | | Education, recreation, etc., at cost to recipients | 0 |
| Total | \$3,500,000 | | \$3,500,000 |

| INCOME PAID OUT BY THE COOPERATIVE | | EXPENDITURES MADE FROM THIS INCOME | |
|--|-------------|---|-------------|
| | | <i>Method B</i> | |
| Cash wages and salaries | \$2,000,000 | Food, etc., paid for in cash, purchased by | |
| Cash interest and dividends | 1,500,000 | employees | \$2,000,000 |
| Income disbursed in kind to employees | 300,000 | stockholders | 1,500,000 |
| stockholders (members) | 600,000 | Value of free services utilized by | |
| | | employees | 300,000 |
| | | members | 600,000 |
| Total | \$4,400,000 | | \$4,400,000 |

Method A may be defended by saying that the education, recreation and other services furnished free to members and employees of the cooperative are a 'free deal' thrown in with the purchase of food and other commodities sold by the cooperative. Of course, the customers pay for this 'free deal' while the employees and members (constituting only a part of the customers) receive it. Method B, on the other hand, may be defended by saying that the income received in kind by the employees and stockholders (members) is just as truly a part of their income as their cash wages and dividends. In fact, the employees and stockholders (members) may have requested payment of a part of their income in this form instead of in cash.

Let us now assume that the employees and members of the cooperative, together with the employees and stockholders of the concerns designated as Group X and Group Y, constitute the entire community. Further, to simplify the situation, we assume that: (a) there are no savings or investments during the year; (b) the receipts of Group X and Group Y business concerns are disbursed wholly in salaries, wages and dividends; (c) the recipients of these salaries, wages and dividends spend them for goods purchased at the cooperative. Then we have the following statements of the aggregate income and expenditures of all the members of the community.

| INCOME OF COMMUNITY | | EXPENDITURES OF COMMUNITY | |
|--|--------------|--|--------------|
| <i>Method A</i> | | | |
| Cash income | | Food, etc., purchased from | |
| Employees of cooperative | \$2,000,000 | the cooperative | \$10,400,000 |
| Stockholders of cooperative | 1,500,000 | Education, recreation, etc., | |
| Employees and stockholders of Group X concerns | 6,000,000 | at cost to recipients | 0 |
| Employees and stockholders of Group Y concerns | 900,000 | | |
| Total | \$10,400,000 | | \$10,400,000 |
| <i>Method B</i> | | | |
| Cash income | | Food, etc., purchased from | |
| Employees of cooperative | \$2,000,000 | the cooperative | \$10,400,000 |
| Stockholders of cooperative | 1,500,000 | Value of free services utilized by employees and stockholders of cooperative | 900,000 |
| Employees and stockholders of Group X concerns | 6,000,000 | | |
| Employees and stockholders of Group Y concerns | 900,000 | | |
| Income received in kind | | | |
| Employees of cooperative | 300,000 | | |
| Stockholders of cooperative | 600,000 | | |
| Total | \$11,300,000 | | \$11,300,000 |

We may now consider several variations in this situation.

(1) The cooperative eliminates the free services to employees and stockholders, using the money thus released to increase their wages, salaries and dividends. The employees and stockholders use the additional cash income to purchase the education, recreation and other services they formerly received free. Then the community income and expenditures are as follows:

| INCOME | | EXPENDITURES | |
|--|--------------|--|--------------|
| Employees of cooperative | \$2,300,000 | Food, etc., purchased from the cooperative | \$10,400,000 |
| Stockholders of cooperative | 2,100,000 | Education, recreation, etc., purchased from Group Y concerns | 900,000 |
| Employees and stockholders of Group X concerns | 6,000,000 | | |
| Employees and stockholders of Group Y concerns | 900,000 | | |
| Total | \$11,300,000 | | \$11,300,000 |

(2) The cooperative eliminates the free services and reduces the prices of the goods it sells. This enables the members of the community (including the employees and stockholders of Group X and Group Y concerns) to purchase the education, recreation and other services supplied by the Group Y concerns. The community income and expenditures are now as follows:

| INCOME | | EXPENDITURES | |
|--|--------------|--|--------------|
| Employees of cooperative | \$2,000,000 | Food, etc., purchased from the cooperative | \$9,500,000 |
| Stockholders of cooperative | 1,500,000 | Education, recreation, etc., purchased from Group Y concerns | 900,000 |
| Employees and stockholders of Group X concerns | 6,000,000 | | |
| Employees and stockholders of Group Y concerns | 900,000 | | |
| Total | \$10,400,000 | | \$10,400,000 |

(3) Group Y business concerns are absorbed by the cooperative, so that their employees and stockholders become employees and stockholders of the cooperative. Dividends formerly paid stockholders of the Group Y concerns are abolished and the money used to increase the wages of their former employees. Again we have the two methods of stating the total income and expenditures of the community.

| INCOME | | EXPENDITURES | |
|---|-----------------|--|--------------|
| | <i>Method A</i> | | |
| Employees of cooperative, in cash | \$2,900,000 | Food, etc., purchased from the cooperative | \$10,400,000 |
| Stockholders of cooperative, in cash | 1,500,000 | Education, recreation, etc., at cost to recipients | 0 |
| Employees and stockholders of Group X business concerns | 6,000,000 | | |
| Total | \$10,400,000 | | \$10,400,000 |

| INCOME | <i>Method B</i> | EXPENDITURES | |
|--|---------------------|--|---------------------|
| Employees of cooperative, in cash | \$2,900,000 | Food, etc., purchased from the cooperatives | \$10,400,000 |
| Stockholders of cooperative, in cash | 1,500,000 | Value of free services used by employees and stockholders of cooperative | 900,000 |
| Employees and stockholders of Group X concerns | 6,000,000 | | |
| Employees and stockholders of cooperative, in kind | 900,000 | | |
| Total | \$11,300,000 | | \$11,300,000 |

(4) Group Y business concerns are abolished, but instead of being absorbed by the cooperative, control over the schools, etc., is taken over by a committee of the community elected by popular vote. At first the cost is still met by the cooperative, but it is decided to open the schools, recreation facilities, etc. to employees and stockholders of Group X concerns as well as to those of the cooperative, and to transfer half the cost to the Group X concerns. Group X concerns add this sum to the prices charged the cooperative for supplies. Again there are the two methods of stating the total income and expenditures of the community.

| INCOME | <i>Method A</i> | EXPENDITURES | |
|---|---------------------|--|---------------------|
| Employees of cooperative, in cash | \$2,000,000 | Food, etc., purchased from the cooperative | \$10,400,000 |
| Stockholders of cooperative, in cash | 1,500,000 | Education, recreation, etc., at cost to recipients | 0 |
| Employees and stockholders of Group X concerns, in cash | 6,000,000 | | |
| Employees of government | 900,000 | | |
| Total | \$10,400,000 | | \$10,400,000 |

| INCOME | <i>Method B</i> | EXPENDITURES | |
|---|------------------|--|------------------|
| Employees of cooperative, in cash | \$2,000,000 | Food, etc., purchased from the cooperative | \$10,400,000 |
| Stockholders of coopera- tive, in cash | 1,500,000 | Education, recreation, etc., (evaluated at cost to the community in taxes) | 900,000 |
| Employees and stockhold- ers of Group X concerns, in cash | 6,000,000 | | |
| Employees of government | 900,000 | | |
| Income disbursed in kind, through the medium of taxes paid by | | | |
| the cooperative | 450,000 | | |
| Group X concerns | 450,000 | | |
| Total | \$11,300,000 | | \$11,300,000 |

The foregoing cases represent five different types of social arrangement to provide education, recreation, etc. The total production and income of the community, in terms of goods and services, is the same in all; although there are some differences in the distribution of these goods and services among the various members of the community. In one case the appropriate method of measuring in dollars aggregate income and aggregate expenditures of the members of the community gives a figure of \$11,300,000. In another the appropriate method gives a figure of \$10,400,000. In the remaining three, however, the total may be stated to be either \$10,400,000 or \$11,300,000, according to the method of accounting.

If it is desired to choose one or another of these figures, this must be done on the basis of which method seems the more convenient for the purpose for which the statement of income and expenditures is desired. Choice cannot be made on the ground that the larger figure involves 'duplication' or 'double counting'. It may with equal logic and accuracy be claimed that the smaller figure omits important types of income received in kind.

*IV Treatment of Government Revenues and Services
in the Measurement of National Income*⁹

Governments are social organizations performing various types of function. They are business service organizations, providing aid to business operations; personal service organizations, collecting fees to meet, in whole or in part, specific services rendered individuals; and collective agents of the population to which the public turns over a portion of its income to provide free education and other services.

The services rendered by governments to individuals, whether free or for fees, are a part of the final product of economic activity. As such, they should appear among the items of consumption. Moreover, though provided free of charge to the public, they are not costless; and if we wish to compare what the nation spends for education with what it spends for communication or transportation or tobacco, it is necessary to take into account the amounts spent by public authorities. It appears reasonable, therefore, in listing the various types of final products and their values, to assign to the free services of governments a value based on the cost of rendering them. Government expenditures for buildings, land and waterway improvements, and other capital goods must also be included and evaluated in any list of final products. They are as much a part of the national product as are additions to the plant and equipment of business concerns.

However, the assignment of values to free government services, and the inclusion of government services and capital improvements among final products, lead to a number of difficult problems in national income estimating. These difficulties arise primarily in the separation of the cost of services rendered to individuals from the cost of services rendered to business enterprises, and in the treatment of government revenues utilized in meeting the cost of capital improvements and of services to individuals.

1 VALUE OF FINAL PRODUCTS PROVIDED BY GOVERNMENTS

Both the character of government accounting and the nature of government services make impossible an accurate separation of

⁹ For a more extensive discussion of this topic see Colm, Part Five.

the cost of services rendered to individuals from the cost of services rendered to business enterprises. Some services, such as education and recreation, can be assigned completely to the former group, and some, such as economic development, to the latter. Others, however, notably general administration and the protection of persons and property, can be allocated only arbitrarily.

Such an allocation of government expenditures between services to business and to persons has been made in connection with an estimate of the value of the various constituents of the national product in 1929 and selected prior years.¹⁰ In this estimate the total amount spent by governments for education, health and recreation, and a part of their expenditures for sanitation, protection and general administration were included among the items constituting the national product. Other government expenditures upon behalf of consumers, such as food and shelter furnished to special groups in the population—aged, poor, blind, delinquent, criminal, and the personnel of the army and navy—and government expenditures for buildings and other capital equipment were also included in the national product.

Government expenditures for services to persons in 1929, according to this estimate, amounted to more than five billion dollars, and for buildings and other capital goods, to more than two billion. Governments spent approximately 7 per cent as much for consumers' goods as did individuals, and 20 per cent as much for buildings and other capital goods as did business concerns (excluding housing companies). These percentages were much larger during the last five years than in 1929.

2 COLLECTIVE INCOME OF GOVERNMENTS

If government expenditures for consumers' goods and for capital goods are included in a summation of the value of final products, then the government revenues absorbed by them must somehow be included in a summation of incomes received. One method of doing this, and from some points of view the most satisfactory, is to treat certain government revenues as collective income and to add their amount to the sum of individual incomes.

'Collective income' may be defined as income received by of-

¹⁰ See Clark Warburton, 'Value of the Gross National Product and Its Components, 1919-1929', *Journal of the American Statistical Association*, December 1934.

ficers of social and business organizations on behalf of groups of individuals and spent on their behalf. Three chief forms of collective income exist in the United States: (a) part of the revenue of governments; (b) interest and dividends received by educational and other philanthropic institutions providing services to consumers free of cost or at less than cost; (c) corporate surplus. Of these, the collective income of governments is the most important.

Not all government revenue is collective income as that term is here used. In fact, government revenue may be divided, logically, into four parts, of which only one part is collective income.

One part of the revenue of governments consists of specific fees and charges made to individuals and business concerns for particular services rendered to those individuals or business concerns. Payments for postal service, for water or other utilities furnished by municipalities or local governments, for licenses, and fees for recording deeds and other records are of this sort. These fees and charges are essentially similar to payments made to public utility corporations or other business concerns for the services purchased from these concerns. As agencies providing particular types of services, governments constitute one class of producing concerns, like farms, mines, factories or hospitals.

A second part of government revenue consists of taxes levied upon business to meet the cost of protecting property and of furnishing other services to business enterprises. These taxes may not be, and commonly are not, levied upon the various business concerns in direct proportion to the amount of service rendered to each. They are, however, essentially fees paid for services rendered. They have the same essential characteristics as the advertising expenses of one corporation paid to another corporation.

The third part of government revenue consists of levies upon individuals to meet the costs of services rendered to persons. Here also governments are acting as producing concerns or, one might say, as purchasing agents for consumers. Such taxes have the same essential characteristics as postal charges, water rates and fees for marriage licenses. In essence they are fees charged for services rendered, even though the charge may be based, as surgeons' fees are sometimes based, on the income of the individual rather than on the service rendered to each person.

In all three of these types of government revenue there is nothing that partakes of the character of collective income. Collective income arises only when levies made upon business enterprises, or profits obtained from government owned industries, are utilized to furnish education or other free services to the public, or to consumers, or for capital outlays. This is a part of the income of the nation, just as though the amounts had been drawn by individuals from business concerns and spent for education and other services, or invested. In a sense, such revenue might be regarded as a profit the government makes in furnishing protection and other services to business and disperses to the 'owners' of the government in kind rather than in money. This 'profit' of government, or sum levied upon business in excess of the cost of services rendered business, is what we have here termed collective income.

The collective income of governments, thus understood, may consist either of direct business taxes, such as property taxes or corporation income taxes, or of taxes usually known as indirect consumption taxes. True, taxes that are obviously consumption taxes (such as the tax upon tobacco or gasoline) but for convenience are collected from business enterprises may be considered to belong to the third sort of government revenue mentioned above, that is, revenue collected from individuals. On the other hand, these taxes are not, from the point of view of the purchaser of the products taxed, payments for services rendered by the government. While consumers may know that the tobacco or gasoline tax is used to furnish government services, what he buys when he pays the tax is, so far as his own choice is concerned, merely tobacco or gasoline. Family and individual choices as to their purchases are influenced by the total cost of various articles available, but only slightly, if at all, by the part of the total cost that is collected by the government.

It is impossible to ascertain just how much of the revenue of the various governments in the United States belongs in the category of collective income as here defined. Two methods of estimate may be used. In one the cost of services rendered business enterprises is deducted from the total net earnings of government enterprises and revenues collected from business enterprises, the difference being considered 'profit' or collective in-

come. In the other method the amount of taxes collected directly from individuals is deducted from the total cost of capital improvements and of services rendered individuals. Estimates made by both methods indicate that the collective income of governments in the United States in 1929 was at least five billion dollars, which is 6 per cent of the income received directly by individuals (excluding capital gains). This percentage has been greatly increased in recent years, so that collective income is now a substantial part of total national income.

3 EFFECT OF METHODS OF HANDLING GOVERNMENT REVENUES AND SERVICES UPON ESTIMATES OF TOTAL NATIONAL INCOME

It is recognized that the method of handling government services and revenues suggested in the foregoing paragraphs differs from the practice of economists and statisticians in measurement of national income.¹¹ If the capital outlays of governments and their free services to persons are evaluated and added to the value of goods and services purchased by individuals when measuring national income by the method of summation of value of final products; and if the collective income of governments is added to the income of individuals when measuring national income by the method of summation of individual incomes, a figure for total national income will be obtained that is several billion dollars larger than the figures published by the National Bureau of Economic Research or the Department of Commerce.

The traditional method of treating government services and revenues in measurement of national income is usually defended on the ground that the value of free government services, as a result of the process of taxation, is included in the value of goods purchased by individuals. The free services of governments, and the items taxed to provide them, may be treated as a joint market—the government services being a ‘free deal’ thrown in with the purchase of gasoline, tobacco and other items subject to indirect taxation. From this point of view it may be said that the method of treatment of such services discussed above involves duplica-

¹¹ Simon Kuznets has recognized the validity of the method with respect to relief expenditures of governments (*National Income, 1929-1932*, 73d Cong., 2d Sess., Senate Doc. 124, p. 12). There is no difference in principle between government cash payments to individuals for the purchase of food and lodging, and government provision of food, lodging, education or other services.

tion of the value of free government services and 'inflates' national income.

Choosing between the two methods is not a matter of deciding which is 'right' and which 'wrong', but rather of deciding which of two alternative methods of accounting is the more appropriate in view of the uses that are to be made of the estimates.

If the purpose of the estimates is to determine the value of the various types of final products and the proportions of national income devoted to each—and this is one of the major purposes of estimating national income by the method of summation of the value of final products—the traditional method is inadequate. It may possibly be followed for commodities subject to specific taxes, such as gasoline and tobacco, by considering their true market value to be the actual sales receipts minus the tax. It becomes impossible to use, however, when the cost of education, or other free service, is met by a general property or general business tax. To say that the true market price of each of the various commodities sold is the actual market price minus an unascertainable amount of taxation is meaningless. In fact, abolition of the tax might not affect the market price of some commodities. To say, under these circumstances, that the market prices of commodities produced by business enterprises paying taxes include the market value of free government services is merely an inaccurate way of saying that the market prices under the existing social arrangements differ from what those market prices would become under other social arrangements.

If, on the other hand, the purpose of preparing national income estimates is to obtain a series of figures over a period of years that may be reduced to a common price level and used as indicators of annual changes in the 'real income' of the people, serious objections may be raised to both methods—particularly in periods when the amount of indirect taxation and of governmentally furnished services fluctuate from year to year or are gradually increasing or decreasing over long periods. When indirect taxes used for furnishing free services to persons and for capital outlays are levied in such a way as to increase the market prices of goods sold, then the traditional method of treatment will reflect the transfer of the use of this income from goods chosen directly by individuals to those furnished by governments,

while the alternative method of treatment discussed above will show an increase in value of the items taxed as well as the value (cost) of the free services. The latter method 'inflates' national income in the same way as certain other changes in the manner of obtaining goods and services, such as the growing custom of eating meals in restaurants rather than at home. When, however, indirect taxes used for furnishing free services to persons, and for capital outlays, are levied in such a way as to decrease the income drawn by property owners or by employees of business enterprises, the traditional method of measuring national income will show a decline that is not a reality. Under this circumstance, the alternative method discussed above reflects the true situation; namely, that income formerly received by individuals has been transferred to the government as an agent for the general population.

4 INCIDENCE OF TAXATION AS A CRITERION OF METHODOLOGY IN NATIONAL INCOME ESTIMATES

The foregoing discussion suggests that incidence of taxation may be used as a criterion of methodology in the treatment of government revenues and services when estimating national income. If the cost of free government services is met from a tax levy of such a sort that prices of certain products are thereby raised, and no change is made in the money incomes received by people producing and selling those products, then it is more appropriate *not* to add the cost or value of the free service to the value of other products. If, on the other hand, the cost of this free service is met by a tax levy of such a sort that the money incomes of persons engaged as workers or owners in the production and sale of certain products are reduced below what they otherwise would be, and there is no change in the prices of the products they are selling, then it is more appropriate to add the cost of the free service to the value of other products. On the income side of the computation, this is done by adding the amount of the taxes collected to the wages of workers, dividends of stockholders, etc., in calculating the income drawn from industry.

When this principle, which is fairly clear in theory, is applied, difficulties ensue because of the complexities of the incidence of taxation. Certain types of taxes offer little difficulty. Taxes col-

lected from individuals appear in personal and family income accounts. In itemizing final products these taxes are merely replaced by the services for which they are used. Taxes paid by business enterprises for specific services rendered do not enter into the picture. Taxes constituting income drawn directly from industry by government (specifically, the corporation income tax) should be added to the sum of individuals' incomes, in estimating national income.¹² The services rendered to individuals from the proceeds of these taxes then appear in the appropriate category among final products.

General property taxes presumably affect to some extent the prices paid by purchasers of the products sold by the enterprises taxed. Yet there is no direct relationship between the taxation and the prices. The taxes are merged with numerous other costs of doing business, and have only an indirect and variable effect upon the prices paid by consumers. It may be said, of course, that even if this is the case, the cost of the services rendered free by governments to individuals and paid for out of the receipts from general property taxes has been included in the prices purchasers pay for the commodities sold by the enterprise paying the tax. This is not, however, wholly true, and the extent to which it is true is unknown. It is not known, for example, how much of the general property tax paid by railroads is included in the price paid by consumers of railroad service. A considerable part of the tax constitutes a reduction in the income of stockholders. This certainly is true as long as the railroads are not earning what is considered a fair return, and the elimination of taxes, or of any other expense, is not considered sufficient reason, until a 'fair' return is reached, for rate reduction.

This same consideration also applies, though in less degree, to consumption taxes, such as the tobacco tax, that are not specifically passed on to the consumer; and in fact, even to those, like the gasoline tax, where the tax and the price of gasoline are quoted separately. Of all taxes collected from business enterprises

¹² Corporation income taxes, which are definitely income diverted from stockholders to the government, and in the author's opinion should be included in national income under any circumstances, are not so included in the estimates of the National Bureau of Economic Research and of the Department of Commerce. I have never been able to learn on what grounds they are omitted. (Ed: see Dr. Kuznets' comments on the paper by Dr. Colm, Part Five, Discussion II, 4.)

and used to meet the cost of free services to consumers, only a part can be considered, theoretically, as duplicated in the prices paid for the items sold by business enterprises. The remainder is a collection by the government of part of the income that would otherwise go to investors, proprietors or employees.

In theory, the appropriate evaluation of national income, for the purpose of annual comparisons, lies somewhere between (a) the value obtained by omitting the cost of free services met by taxes other than direct income and poll taxes, and (b) the value obtained by including the cost of these services (that is, the amount of revenue other than direct taxes used in this way). Practically, however, it is not possible to apply this principle of incidence of taxation in detail, since the two types of taxation cannot be separated. Almost any tax falls to some extent on owners or other income-receivers and to some extent on consumers, though some fall predominantly on one group and some predominantly on the other. Practically, therefore, it seems necessary to use either (a) or (b), recognizing that the former will give a figure that is smaller than the 'true' figure, and the latter one that is larger than the 'true' or most appropriate figure.

It is possible, however, to make a crude judgment as to which of the two figures is more nearly correct, without going into the precise incidence of each kind of tax. The revenues of the governments (Federal, state and local) involved in the discussion approximated in 1929 the amounts indicated below (in billions of dollars).

| | |
|--|------|
| Rents, fees and earnings of property | 1.0 |
| Federal corporate income tax | 1.2 |
| Licenses (largely business) | 1.5 |
| Special property taxes | 1.0 |
| General property taxes | 6.0 |
| Customs, tobacco and other consumption taxes | 1.5 |
| Total | 12.2 |

The first of these items consists mainly of income from ownership, the same sort of income as that received by individuals in the form of rents, dividends, etc. The second, Federal corporate income tax, clearly falls on owners (stockholders) rather than on customers. The third, licenses, probably also falls chiefly on owners rather than on customers. These three items, totaling

about 3 billion dollars, or one-fourth of the total, may safely be assumed to fall chiefly on owners in the form of reduced money incomes. The last item (customs, tobacco, etc.) is the only one that falls almost wholly on customers, and this amounts only to 1.5 billion, or about one-eighth of the total. The remaining two items (special and general property taxes) constitute about five-eighths of the total. The incidence of these taxes is a matter of considerable debate, but there are excellent grounds for believing that a large percentage falls on owners in the form of reduced incomes from the ownership of property rather than on customers in the form of higher prices for the products with which the property is associated.

About half of the twelve billion under consideration is used to furnish services to business enterprises, according to the allocation of government expenditures, more or less arbitrary, made by the author. This amount is a proper item of business expense, entering into the cost of the products sold by business enterprises, like materials and services purchased from other business enterprises, and should be assumed to be paid out of the taxes collected from business enterprises.

But even after making allowance for services to business enterprises, it appears that at least half of the revenues used by governments in the United States in 1929 was raised by methods that had the effect of reducing the money value of incomes drawn by individuals from business rather than of raising the prices of commodities purchased by consumers. Since 1929 this proportion has increased. If the criterion of incidence of taxation is used to decide which of the two methods gives a figure more closely approaching the 'true' value of national income, it may be concluded that the procedure of including the 'collective income of governments' yields a figure at least as close as and perhaps closer than that given by the traditional method.

V Available Income and Its Relation to National Income

National income estimates are used not only to compare from year to year the value of the economy's net product but also to note changes in the flow of funds available for acquiring the final products as they emerge from business concerns. For the latter purpose, however, traditional concepts of national income are inadequate, since funds derived from other sources than the items usually included in computations of national income are regularly used in purchasing final products.

The term 'available income' is used here to designate the total sum actually received by or made available to individuals, and to governments and other organizations on behalf of individuals, during a given period, for the purpose of acquiring final products. Thus defined, available income includes some funds that are not considered income in modern accounting. It seems appropriate, however, to apply this term to a concept covering the flow of funds that 'come in' for disposition in the purchase of goods for consumptive or capital purposes.

Available income should not be confused with the current income of individuals, with national income defined as the value of the net product of the economy, or with purchasing power. The first two concepts are less inclusive than available income; the third is an immeasurable potential, while available income is a measurable flow.¹³

While the major part of available income consists of the current income of individuals, available income derived from other sources is of sufficient importance to make the total substantially larger than the total current income of individuals.¹⁴

¹³ Purchasing power, or ability to purchase, is as much a matter of wealth as of income or of cash receipts. However, the term 'purchasing power' is often used to designate the concept here called 'available income'.

¹⁴ 'Current income of individuals' is used here to include the payments of business enterprises, governments, other social organizations, to individuals for the services of persons or property, together with the value of goods utilized by the producers thereof and the net rental value of houses occupied by their owners.

It may be said, with accurate logic, that the money value of the use of durable consumers' goods, such as automobiles, clothing, household furniture and works of art, should be included in current income along with the rental value of owned homes. Also, it may be argued that it is as logical to include the money

Apart from the current income received by individuals, some income is drawn from business concerns by officers of social and business organizations on behalf of groups of individuals and spent on their behalf. Such institutional or collective income is as real a part of available income as that drawn directly by individuals. The three chief forms of institutional or collective income are: (a) a part of government revenue; (b) income from investments of educational and other philanthropic institutions; (c) corporate surplus.

A third type of available income consists of capital gains, or profits from the sale of securities or other property. Realized capital gains may be merged by the recipients with their current incomes and are, in fact, reported on income tax returns along with current income. Capital gains realized by corporations are commonly added to other earnings and retained as surplus or distributed as dividends.

A fourth type of available income consists of business allowances, or charges to current operating expenses for services rendered free to employees, for gifts and entertainment of prospective customers, officers, etc. The chief items of this sort consist of free medical service to employees, allowances for meals of salesmen and other persons traveling for business and social organizations, and the provision of tobacco, alcoholic beverages and other items to prospective customers and other persons with whom business is transacted.¹⁵

A fifth type of available income consists of depreciation and depletion allowances of business concerns. Such allowances may be set aside for use, along with those obtained from the sale of new securities and other sources, in purchasing new buildings,

equivalent of housewives' services, and of numerous personal services, such as the care of clothing, which individuals perform for themselves, as the dairy products, potatoes and other food obtained by farm families from their own farms. In the absence, however, of market appraisals or of some fairly satisfactory substitute for market appraisals of these items, they may be excluded on pragmatic grounds.

¹⁵ Expenses of salesmen other than for food—such as allowances for hotels, automobile operation, railroad, steamship and airplane fares—are not included in these business allowances, because these items should be eliminated, so far as possible, from estimates of the value of final products. This line of demarcation is not entirely satisfactory but the items here included as business allowances approach more closely the character of final products, and less that of intermediate products, than do allowances for transportation and rooms.

machinery or other equipment, or they may be paid to stockholders or other owners as liquidating dividends. Along with the current income of individuals, institutional income, capital gains, and business allowances, they constitute funds available for the purchase of consumers' goods or new capital facilities.

Such depreciation and depletion allowances must be taken into consideration not only for corporations, but also for other business concerns and for home-owners, whether or not home-owners' depreciation accounts are actually set up, since the funds that would go into such accounts, if set up, are available for the purchase of final products.¹⁶

A sixth type of available income, somewhat similar in character to depreciation and depletion allowances, consists of payments to beneficiaries of life, health and accident insurance policies. Such payments are clearly available income and in fact, when paid in instalments, may be merged with the current income of individuals and spent as though they were current income.

As final elements in available income, we must take into account the sale of assets and the extension of credit. The ability of an individual, family, corporation, government or other social

¹⁶ In order to see how the depreciation on a house occupied by the owner can be spent for consumption, or invested, we may consider two families, one renting the house in which it dwells, the other owning its house. The family that rents has a cash income of \$6,000 a year and pays \$75 a month, or \$900 a year, for house rent. Of this amount received by the landlord, we may assume \$200 reimburses him for taxes, insurance and maintenance; \$200 is his allowance for depreciation, and the remaining \$500 constitutes the income he derives from his investment. The \$200 for depreciation is available to him as an individual proprietor for a new investment to offset the decline in the value of his house.

The second family owns a house of the same value as that leased by the first family, and has a cash income of \$5,500. The income of this family, when the income derived from home ownership is included, is equal to that of the first family. Each family spends \$900 a year for house rent, the first in the form of cash, the second in the form of rental value. If, now, we compute the cash available for other purposes we find a difference between the two families. The family that rents its house has \$5,100 to spend after paying rent. The family that owns its house has to pay out \$200 for taxes, insurance and maintenance. When this is deducted from the \$5,500, \$5,300 remains to be spent. The \$200 difference represents the depreciation on the house, a cash realization from the depletion in its value. If the family spends this \$200 for other consumer goods, it may be said to be 'living on its capital'. If the \$200 is invested, the capital assets of the family remain intact—but there is no saving out of income. The \$200 has not been included in estimating the current income of the family. Yet it may be used either for consumptive or capital purposes, and is thus a part of available income.

or business concern to purchase final products may be far in excess of current income, or of current income augmented by capital gains, depreciation and depletion allowances, or insurance benefits. The chief reason for this excess of purchasing power over the flow of income, capital gains, depreciation and depletion allowances, and insurance benefits lies in the possession of wealth and of prospective future income. Persons and concerns with valuable assets or with prospective future incomes may utilize these assets or future incomes in making purchases of final products in either of two ways: by the sale of assets or by using credit.

It is impossible to estimate the total purchasing power of the nation at any time, when these types of potential purchasing power are considered. It would be necessary to include not only what individuals, business concerns and governments actually borrow or realize from the sale of assets, but also all that they could have borrowed or realized. Every actual and potential line of credit, the value of all existing wealth, and the maximum amount of credit expansion possible under the banking system and other credit mechanisms would all have to be considered. It is not, however, this potential purchasing power but that actually utilized which concerns us when we are considering available income.

The first of the two methods of utilizing purchasing power inherent in existing assets or prospective incomes—the sale of assets—may be of great importance to many families and business concerns. Since, however, (aside from the gains or losses incident to the sale, taken into consideration above under the term capital gains) the purchasing power obtained by one person, family, business or social concern is offset by an equal reduction in the purchasing power of another person, family or concern, the sale of assets neither adds to nor subtracts from the real flow of available income. It does, however, greatly alter the distribution of available income among the individuals in the population, shifting it from some persons to others.

When, however, credit is extended, the situation is different. The flow of available income is augmented. Two types of credit are of special significance: credit extended by banks, and credit extended by business concerns to individuals and other business

concerns for the purchase of final products. Both types may account for relatively large additions to the flow of available income, though both have definite limits: the former, limits set by law and banking practice; the latter, limits set by the profits that business concerns are willing to leave in the form of accounts receivable.

Again, it may be emphasized that it is not the limits of credit expansion, but the actual expansion or contraction of credit, that constitutes an element in available income. We wish to estimate not how much could have been added to the flow of income available for purchasing final products, but how much was actually added to that flow by the operation of credit institutions. The difficulties of making such an estimate are exceedingly great, with respect both to banks and other credit institutions and to the credit extended by business concerns.

A special type of credit expansion consists of the bad debts of business concerns resulting from the sale of final products. The bad debts of retail merchants are in reality an addition to the current incomes of individuals and families, though not included in their income accounts. The goods and services that are in this way 'given' by business enterprises to persons are, however, included in an itemization and evaluation of final products. Business allowances for bad debts involved in the sale of final products should therefore be included in the total flow of available income.

*VI Treatment of Capital Gains in the Measurement of National Income*¹⁷

Capital gains, whether realized or merely accrued as a result of changes in market values, are commonly excluded from the concept of national income and hence excluded from the items listed and evaluated in its measurement. It is desirable, however, to include realized capital gains among the items listed and evalu-

¹⁷ For discussions of this problem by other contributors to this volume see Copeland, Part One, Sec. IV and V, 8, discussion by Simon Kuznets, and Dr. Copeland's reply; Simon Kuznets, Part Four, discussion by M. A. Copeland, Milton Friedman and A. W. Marget, and Dr. Kuznets' reply.

ated if national income is measured by a process involving the consolidation of income and expenditure statements of families, individuals and social groups.¹⁸

(1) If, in the process of summation of incomes received by individuals, it is desired to obtain subtotals of the income received by families and individuals in various income strata, it is necessary to include capital gains. This is because of the character of the summaries of income tax returns in *Statistics of Income*, virtually the only source of information on incomes of individuals in the higher income strata.

The total amount of income derived from capital gains by individuals in each income class is set forth in *Statistics of Income*. This does not, however, suffice for the determination of a frequency distribution of income excluding capital gains among those making income tax returns, or for estimates of changes from year to year in the number of individuals in each income class, because information is not given as to the distribution of the capital gains reported for each income group. In the issue for 1928, for example, we are informed that 68,048 individuals reported 'net income' between \$25,000 and \$50,000, and that they received 22.2 per cent of their total income from capital gains (on assets held both less than and more than two years). We are also given the total number of individuals reporting specific amounts of income from capital gains. We do not know, however, how many of the 68,048 received part of their income from capital gains. That is, we do not know, were capital gains excluded from the tabulations, whether there would be 50,000, 60,000, 65,000 or some other number of individuals reporting incomes from \$25,000 to \$50,000. We are also informed that in 1927 there were only 60,123 individuals in this class. But, so far as we know, there may have been as many individuals with in-

¹⁸ As Dr. Copeland has pointed out in Part One, Sec. I, the first three methods of measuring national income listed in Table I involve the consolidation of selected items from income and expense statements of business and social enterprises, while the last two methods involve the consolidation of income and expenditure statements of families, individuals and social groups.

The term 'income of social groups' as used in this Section may be considered synonymous with 'collective income' as used in the preceding discussion. Analogously, the utilization of collective income, here called 'expenditures of social groups', may also be called 'collective expenditures'.

comes between \$25,000 and \$50,000 in 1927 as in 1928, were capital gains excluded from income. In brief, the statistics in *Statistics of Income* are virtually worthless for use in building up frequency distributions of income for any one year or for a series of years unless capital gains are included in income received.

(2) Unless capital gains are included, the frequency distribution curve is seriously distorted. A frequency distribution of income among individuals should show their relative ability, as a result of the operation of the nation's productive and distributive mechanism, to claim the products of the system. For use, either for consumption or for fresh investment, capital gains are as significant to the recipients as any other form of income, and stock market speculation has in fact become one of the important methods of distributing, or redistributing, national income. Occupancy of a strategic trading position in the security markets and diversion into individual incomes, in the form of capital gains, of changes in the values of capital assets is essentially the same type of economic phenomenon as the occupancy of a river crossing and diversion into individual income, in the form of tolls, of changes in the values of commodities as they are moved in space; or the occupancy of titles to natural resources and the diversion into individual incomes, in the form of rents and royalties, of changes in value resulting from the exploitation of such resources.

In fact, a strategic position in the security markets and diversion into individual incomes of changes in the value of capital assets has become one of the chief sources of large incomes. In 1928, for example, 511 individuals reported incomes of \$1,000,000 or more. Of their aggregate total income of \$1,226,000,000, \$729,000,000, or approximately 60 per cent, was derived from profits on sales of capital assets (of which part was held less and part more than two years). In the same year 49 individuals reported profits of \$1,000,000 or more each from sales of capital assets held less than two years, and 204 individuals reported capital net gains of \$1,000,000 or more from sales of assets held more than two years. That is, at least 253 individuals (the number would certainly be larger if the two categories of such gains were tabulated together) reported capital gains amounting to \$1,000,000 or more each. Practically all these 253 persons must be in-

cluded among the 511 reporting net incomes of \$1,000,000 or more, and most of the capital gains of the 253 individuals, amounting to \$568,000,000, are included in the \$729,000,000 of such gains reported by the 511 persons.¹⁹ Approximately half of those reporting net incomes of \$1,000,000 or more received practically their entire income from capital gains, while the other half received practically their entire income from other sources. The proportion of large incomes derived chiefly from capital gains was, of course, exceptionally large in 1928, but capital gains would still remain one of the chief sources of large incomes if all the years in a business cycle were considered together.

(3) In estimating the total amount spent by families and individuals for consumption, or for various types of commodities and services, it is necessary to use samples, and apply averages derived from such samples to the estimated number of families and individuals in each income stratum. It is reasonable to assume that a substantial portion of capital gains is diverted to consumption; consequently, estimates of the amounts spent for consumption out of other forms of income understate the real totals, particularly in years such as 1928 and 1929 when capital gains are large.

Virtually no data are available on the actual use to which capital gains are put by the recipients, and opinions probably differ on the question whether capital gains are usually spent in the same way as other income. Will a family with a \$20,000 income, of which half is derived from capital gains, spend for consumption an amount similar to that spent by families with \$10,000, no part of which comes from capital gains, or similar to that spent by families with \$20,000, no part of which comes from capital gains? My own opinion is that the latter is more likely for the following reasons. First, capital gains are in large part either a species of professional gain (that is, gains of persons who devote a substantial part or most of their time and capital to speculation rather than to other forms of business) or a species of gain closely akin to gambling. Professional speculators presumably derive the main part of their livelihood from capital gains, and thus

¹⁹ Because of the distribution of deductions among individuals making income tax returns, some of the 253 reporting more than \$1,000,000 total income from one of the two categories of capital gains may not have appeared among the 511 reporting net incomes of \$1,000,000 or more.

presumably spend their incomes derived from capital gains much as other persons spend similar money incomes derived from other sources. As to capital gains approaching those of gambling in character, I would not suppose that any unusual percentage would be saved. Second, the only sample study of family expenditures and savings with which I am acquainted covering families having an appreciable amount of capital gains does not show that capital gains were disposed of differently from other types of income.

(4) Though it is both necessary and desirable to include capital gains among the items listed and evaluated when national income is measured by the method of summation of incomes received, or by the method of summation of consumer purchases and savings, an adjustment may be made, if desired, in the total thus derived. That is, after obtaining the sum of the incomes of families, individuals and social groups in the various income strata by a process that includes capital gains, the total amount of such capital gains may be deducted to obtain a value for national income comparable to that derived by other methods. If, however, it is desired to make statements to the effect that certain percentages of national income are received by individuals or families in specified income strata, or that certain percentages of all consumptive expenditures are incurred by individuals or families in specified income strata, the computation of such percentages should be based on the relation of the incomes of the individuals or families within the specified income strata to the total incomes including capital gains of all families, individuals and social groups.

VII Relation of Total Savings of Individuals and Social Groups to Capital Formation

If national income, or available income as defined in Section V, is measured by the method of summation of value of final products, and also by the method of summation of consumer purchases and savings, and both measurements are made on a transaction rather than an accrual basis, the total value of consumers' goods obtained by the two methods should be identical,

except for errors due to inadequate information. However, the value of items representing additions to wealth, or the value of capital formation, obtained by the method of summation of value of final products, may differ from the aggregate savings of individuals or social groups obtained by the method of summation of consumer purchases and savings. There are at least four sources of this difference: (1) commissions and other expenses connected with the transmutation of savings into capital, (2) sales of fraudulent securities, (3) profits on the sales of capital assets, and (4) the handling of life insurance premiums and benefits.

1 COMMISSIONS

Let us first consider commissions on sales of securities. Assume that of 100 men, each enjoys a current income of \$10,000, spends \$9,000 for living and invests \$1,000 in his own business or in the direct purchase of stock from other business concerns. The aggregate savings of the 100 men amount to \$100,000, and if none is wasted, the value of the capital assets obtained thereby may also be assumed to amount to \$100,000. But after a few years these men have invested all they need in their own enterprises and those of their friends. So they hire an agent to make investments for them, offering a 5 per cent commission. The agent invests \$95,000, takes his commission of \$5,000, and spends it for his own living. Or perhaps the agent is hired by business concerns wishing to raise capital, and receives a commission for the stock sold.

There are several ways of treating the situation. (a) If the 100 investors consider the commission a personal expense, like paying a servant, the aggregate income of the 101 persons, including the agent, is \$1,005,000, of which \$95,000 is 'saved'. The same sum is to be considered the amount of addition to capital assets. (b) If the investors treat the commission as a business expense, they may deduct it from their income, so that the 101 persons report \$1,000,000 income, of which \$95,000 is saved and added to capital. (c) If the investors consider the commission a part of their investment or savings, the 101 persons have an aggregate income of \$1,005,000, out of which \$100,000 is saved. The increase in capital assets on the books of business enterprises is, however, only \$95,000, and there is a permanent discrepancy between the

two valuations of what is presumably the same property. (d) If the commission is paid by the business concerns, it may be considered an expense of operation, or amortized, and not put into the capital accounts. In that case the aggregate income of the 101 persons is \$1,005,000, with \$100,000 saved. The increase in capital assets on the books of the business enterprises is, nevertheless, only \$95,000 and there is again a permanent discrepancy between the two valuations. (e) The business enterprises, again paying the commission, may consider it a part of the capital assets of the concern, on the ground that it is a part of the cost of obtaining the machinery purchased with the remaining \$95,000—like the cost of delivering and setting up the machinery. Again, the aggregate income of the 101 persons is \$1,005,000, with savings of \$100,000. But the increase in capital assets on the books of the business enterprises is also \$100,000. (f) The merchandising of securities may be treated as a separate business enterprise, especially if the commission agent incorporates his activities. In that case the investors would very likely value their savings at \$100,000, but the business enterprises using these savings as capital would enter only \$95,000 on their books. This is especially likely to be the situation if the intermediary acts as an investment trust or savings bank rather than as a commission merchant.

Thus, so far as the amount of saving and capital formation is concerned, there are three possibilities. The amount of both may be considered to be \$95,000, or the amount of both may be measured as \$100,000, or the aggregate savings may be \$100,000 and the value added to capital assets only \$95,000. So far as the percentage of the aggregate income saved is concerned there are also three possibilities: \$95,000 out of an income of \$1,000,000, or 9.50 per cent; \$95,000 out of incomes amounting to \$1,005,000, or 9.45 per cent; or \$100,000 out of incomes amounting to \$1,005,000, or 9.95 per cent. So far as the proportion of the aggregate income that is devoted to capital formation is concerned, there are the same three possible percentages.

When the percentage of both income saved and income devoted to capital formation are considered, there are four possibilities: both may be 9.50 per cent of income, 9.45 per cent of income, or 9.95 per cent of income, or savings may be 9.95 per cent and capital formation only 9.45 per cent of income. In actual

life there may be still further possibilities, for both the enterprise selling securities and the investor purchasing them may pay commissions, and there are various combinations of the above ways of handling the situation.

Further light may be thrown on the problem from the social point of view by considering the human effort represented by the \$5,000 of commissions. The commission paid certainly represents human effort connected with the process of capital formation, just as much as the labor that went into machinery purchased with the net proceeds of the issue. That is, it is effort exerted in making arrangements for the future rather than for the present production of goods. On the other hand, if we attempt to measure the volume of capital formation from the value of enlargements of physical plant, that is, from the excess of building, machinery, etc. produced over replacements, we are not likely to include the value of the services of investment bankers, expenses of operation of savings banks, etc. Thus even from the social or national point of view, we may wish to distinguish between the amount of 'savings' and the value of 'capital formation' resulting from those savings.

2 FRAUDULENT SECURITIES

Sums paid for fraudulent securities, like commissions on the sale of legitimate new securities, constitute individual expenditures for investments, or a part of individual savings, without any corresponding element in the value of capital formation. They may be treated as savings completely absorbed by commissions.

3 CAPITAL GAINS

Let us suppose that A, B, C and D each has \$25,000 worth of investments and \$5,000 cash at the beginning of the year. Each has a regular income of \$10,000, and commonly spends \$7,000 for living expenses, and has savings of \$3,000, which is placed in new security offerings. At the end of the year each has the same amount of cash as before, and \$28,000 of investments. Both cash receipts of this group from other persons and cash disbursements to other persons total \$40,000. The group of four spends \$28,000 for living and \$12,000 for new investments.

Now suppose that A, instead of buying new securities, spends his \$3,000 of savings in purchasing investments from B, which have cost B and are still carried on his books at \$2,000. B thus makes a profit of \$1,000 which he can use either by spending more on living or by increasing his annual savings. (a) Suppose he saves it: that is, he invests not only the \$3,000 from his regular income, but also the entire \$3,000 received from A. Let us assume that he spends the entire \$6,000 for new securities. This is the condition where the stock market acts as a sieve, with the money absorbed by speculators passing through them to the capital market. C and D invest their \$3,000 each for new stock issues as before. It is clear that the total amount invested in new securities, which presumably measures the volume of capital formation, is unchanged, remaining \$12,000. However, B has saved \$4,000 out of an income of \$11,000, and the group of four men have saved \$13,000 out of incomes amounting to \$41,000.²⁰ B has \$29,000 of investments at the end of the year, and the others only \$28,000 each as before. (b) But suppose that B spends his \$1,000 profit for living, saving \$3,000 as before but spending \$8,000 for consumption goods. There is now \$12,000 of savings, \$3,000 from each of the four men. A has bought no new securities, B purchases \$5,000, and C and D \$3,000 each of new securities, a total of only \$11,000 actually reaching the new capital market. The aggregate savings of the four men amount to \$12,000 out of \$41,000 income, with \$29,000 spent for consumption goods. In neither case are the incomes of persons other than these four affected. The four persons still pay out to and receive from other persons \$40,000. The type of economic activity of someone else is, to be sure, affected, if B spends his \$1,000 profit for consumption goods instead of for new securities.

To summarize this situation, the funds set aside by individuals for the purchase of new investments, or the aggregate savings of individuals, may include an element representing a mark-up in the value of existing capital goods, or their representative, securities. This occurs whenever such a mark-up comes into an individual income account through the sale of existing assets at a

²⁰ The chief reasons for including capital gains in the sum of incomes received have been discussed in the preceding Section.

profit, or through the raising of investment valuations on an individual's balance sheet and the transference of the difference in net worth resulting therefrom to his income account.

This increase in the value of existing assets also appears in the figure for aggregate individual incomes. Moreover, it makes the aggregate consumption expenditures plus new investments (savings) of individuals greater than the total value of current output of consumption goods plus additions to capital. To produce an equality between aggregate current income and aggregate current consumption expenditures plus savings or new investments, we must include in savings or new investments not only the value of new capital goods, but also the increase in the value of existing investments, so far as the latter has been brought into individual income accounts through profitable sales of investments or revaluation on the books of individuals.

Speculative losses and write-downs of investments may be treated like speculative profits and write-ups of the value of investments, being negative instead of positive.

4 LIFE INSURANCE PREMIUMS AND BENEFITS

Life insurance premiums paid, at least on policies of the endowment type, consist essentially of two different parts, one representing savings of policyholders and the other a redistribution of income from policyholders to the beneficiaries of those who have died prior to the maturity of their policies. In theory therefore, life insurance premiums should be divided into two parts, when estimating the aggregate savings of individuals, and only that part which represents the net increase in the 'equity' of the policyholder (perhaps measured by the change in cash surrender value) included in savings. Practically, such a division is almost impossible to make, at least when estimating the aggregate savings of families and individuals in the various income strata. Because of difficulties in obtaining information concerning the character of insurance held, length of time held, cash surrender value, or other essential information, surveys of family expenditures rarely contain the necessary data for dividing life insurance premiums paid into these two parts.

One method of handling this situation is to include all life insurance premiums paid in the 'savings' of families and individ-

uals in the various income strata, and then adjust the aggregate savings for benefits paid to beneficiaries.

5 GROSS VS. NET SAVINGS AND CAPITAL FORMATION

One of the chief differences between national income as ordinarily defined and available income as defined in Section V is the inclusion in the latter of depreciation and depletion allowances of business enterprises. It may be advantageous also to include depreciation and depletion allowances when estimating the total funds available in any year for the acquisition of additional investments or other forms of wealth. This procedure has the advantage, in comparisons of estimates of total savings with total capital formation, of avoiding an estimate of actual depreciation on capital facilities, particularly structures. When the gross total of savings and of capital formation have been compared, the estimated depreciation on structures and other capital facilities not met by replacements charged to current operating expenses of business enterprises may be deducted to obtain estimates of net total savings and net capital formation for use in estimating national income.

6 SAVINGS AND CAPITAL FORMATION IN 1929

For the reasons enumerated above, the total amounts set aside by families, unattached individuals, corporations, governments and other business and social enterprises for the acquisition of additional investments or other forms of wealth may in some years exceed by a large margin the amount of capital formation, as measured by the value of new structures and other capital goods produced. Such was the case in 1929, and estimates relating to that year may be given here as an illustration.

Estimates of gross savings and gross capital formation in 1929, with the major components of each, are given in Table 2. Net estimates may be obtained by omitting the depreciation and depletion allowances from gross savings, and a corresponding figure from capital formation. The same figure is deducted from both totals on the assumption that the allowances for depreciation are a moderately reliable estimate of the actual depreciation. Total net savings in 1929 may thus be estimated at approximately 23 billion dollars, net savings available for purchase of capital

items at 11 billion dollars, and the value of net additions to capital (net capital formation) at 10 billion dollars. The difference between the latter two figures is small enough to be accounted for by errors of estimate.²¹

The significance of the difference between total savings and capital formation is frequently misunderstood. In fact one prominent writer on economic problems has grossly misrepresented the character of the relation between estimated total savings and the estimated value of additions to productive plant and equipment. In *The Formation of Capital*, H. G. Moulton writes:

“What became of the money savings which did not eventuate in new plant and equipment? The answer is that, aside from that portion which went into foreign issues, the excess savings were absorbed, dissipated, in bidding up the prices of outstanding securities. Money savings were thus transferred increasingly into speculative profits rather than into productive plant and equipment” (p. 151).

“The capital gains were thus largely the result of an antecedent and growing disparity between the volume of money flowing into investment channels and the volume being currently required by corporations for productive purposes” (p. 149).

The causal relation between capital gains on the one hand and the difference between gross savings and the volume of capital formation on the other is exactly the reverse of that stated by Mr. Moulton. The difference between gross savings and the value of additions to plant and equipment is primarily the concomitant result, and in no sense the cause, of rising security prices and capital gains.

²¹ A somewhat smaller figure for net additions to capital will be obtained if allowance is made for depreciation of government owned structures and equipment. All these estimates of savings and capital formation were prepared in 1934 in connection with the Brookings Institution's study of the distribution of wealth and income in relation to economic progress. Later investigations made by the National Bureau of Economic Research provide more accurate estimates of the value of most capital formation items. The National Bureau figure that is roughly comparable in scope to the one given in Table 2 is approximately 2.5 billion dollars larger. The most important difference between the two estimates is in the item of increase of business inventories, which is estimated by the National Bureau as 2.4 billion in contrast to the estimate of 0.2 billion in Table 2. See Simon Kuznets, *National Income and Capital Formation, 1919-1935* (National Bureau of Economic Research, 1937), Table 10.

TABLE 2
ESTIMATES OF GROSS SAVINGS AND CAPITAL FORMATION IN 1929
(billions of dollars)

| A. GROSS SAVINGS | | |
|--|-----|------|
| Savings of families out of current income and capital gains ¹ | | 15.1 |
| Savings of unattached individuals out of current income and capital gains ¹ | | 2.6 |
| Savings of families and unattached individuals out of insurance benefits received ² | | 0.7 |
| Corporation income reinvested ³ | | 2.3 |
| Depreciation and depletion allowances of corporations ⁴ | | 4.4 |
| Depreciation and depletion allowances of other business enterprises, including home owners ⁵ | | 3.3 |
| Government expenditures for permanent public improvements made from tax receipts ⁶ | | 1.9 |
| Estimated total gross savings | | 30.3 |
| Returned directly to the income stream in | | |
| Commissions on sales of property and interest on speculative loans ⁷ | 1.0 | |
| Purchase of fraudulent securities ⁷ | 1.0 | |
| Payments to life insurance beneficiaries ⁸ | 2.1 | |
| Profits on the sale of property ⁹ | 7.5 | 11.6 |
| Estimated gross savings available for purchase of capital items | | 18.7 |
| B. VALUE OF GROSS CAPITAL FORMATION ¹⁰ | | |
| Buildings | 6.6 | |
| Transportation and public utility structures | 4.1 | |
| Machinery and equipment | 5.7 | |
| Miscellaneous improvements and construction | 1.0 | |
| Increase in inventories | 0.2 | |
| Increase in investment abroad | 0.2 | |
| Estimated total value of additions to capital, excluding changes in holdings of durable or nondurable consumption goods by individuals | | 17.8 |

¹ Maurice Leven, H. G. Moulton and Clark Warburton, *America's Capacity to Consume*, pp. 95-7. Estimates include full amount of life insurance premiums paid. Since estimates of expenditures for durable consumers' goods, except homes, were made on a purchase rather than on an accrual basis, savings in the form of increased holdings of such goods by individuals are not included.

² Based on the assumption that insurance beneficiaries utilize life insurance benefits in the same way as individuals spend current income.

³ Compiled net profits minus cash dividends, *Statistics of Income, 1929*, p. 268.

⁴ *Ibid.*, p. 267.

⁵ Crude estimate on basis of: (a) estimated relative volume of non-farm corporate

and non-corporate business; (b) Department of Agriculture estimates of depreciation on farm property; (c) 15 per cent of estimated rental value of homes.

⁶ Estimated total government cost payments for structures and equipment, minus net borrowings.

⁷ Crude estimates based on limited information, such as the volume of sales on stock exchanges, and operations of 'blue-sky' laws.

⁸ Estimated from data reported in the *Insurance Yearbook*.

⁹ Profits from sale of real estate, bonds and stocks, and other capital assets reported by corporations (*Statistics of Income, 1929*, p. 267), and similar profits by individuals (estimate of Maurice Leven, in *America's Capacity to Consume*, p. 163).

¹⁰ Value of new capital goods acquired by business concerns, including all homeowners as business concerns, without allowance for depreciation of existing capital (*Journal of the American Statistical Association*, March 1935, Supplement, p. 179).