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*Part Four*

# THE VOLUME AND COMPONENTS OF SAVING IN THE UNITED STATES 1933–1937

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WITH THE ASSISTANCE OF

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# THE VOLUME AND COMPONENTS OF SAVING IN THE UNITED STATES 1933–1937

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WITH THE ASSISTANCE OF

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THIS report of a new attempt to measure the volume and the components of saving in the United States, made in the Research and Statistics Section of the Trading and Exchange Division of the Securities and Exchange Commission,[1] consists of two parts. The text describes briefly the basic principles used in deriving the estimates and presents a summary of the results of the calculations for 1933 through 1937. The many controversies that have been in progress during recent years concerning the concepts and procedures usually involved in any attempt to measure saving have been discussed only in the briefest form and only so far as discussion seemed essential to an understanding of the methods actually used. The Appendix describes in some detail the individual series used in building up the estimates, setting forth the sources from which the material was derived and explaining the adjustments made on the raw material.

Any calculation of the volume of saving is, to a considerable extent, of a hypothetical or 'constructed' character, even more so than the measurement of national income though less than the estimation of national wealth. If we are not to lose ourselves in a maze of confusion we must adhere to a consistent set of ac-

1 This report has not been passed upon or approved by the Securities and Exchange Commission. Responsibility for the estimates or statements made rests upon the authors.

counting principles in our calculations, irrespective of whether they are actually applied by the parties to the transactions we measure. For this study we have, with few exceptions, accepted the accounting principles now generally in use among business enterprises and have tried to apply them to unincorporated businesses, households, and government units.

It has been claimed, however, that a scientific calculation of such magnitudes as national income, national wealth, investment, and saving, should go a step further and modify the accounting methods current in business practice wherever adjustment is necessary to make them conform to the concepts developed by economic theory. In this study we have made such adjustments only on one of the most obvious and most important points: we have tried to eliminate write-ups and write-downs and capital gains and losses from the calculation of saving. A strong case can also be made from a theoretical point of view for the elimination of inventory profits and losses. Elimination of the difference between depreciation allowances calculated on the basis of original cost and of replacement cost also deserves serious consideration but happens to be of small numerical importance for the period studied. Inventory profits and losses of corporations have not been excluded because the material is, as yet, lacking to eliminate them consistently and because doubt exists as to how such an adjustment should be made.

The calculation of the volume and components of saving in the United States presented in this paper makes use, in general, of methods and techniques already applied in this field and is based on statistical raw material, most of which is available to all students. It claims to differ from previous attempts at a comprehensive measurement of the volume of saving mainly in its more consistent adherence to accounting concepts. The estimates are, nevertheless, still preliminary and, on many points, far from satisfactory. Many of the constituent series can be improved considerably even without the collection of new basic data.[2] That both the theory of measuring saving and the statistical procedures adequate for such measurement are still in a rather rudimentary stage and have not enjoyed the thorough discussion that has gone

[2] For a list of the major deficiencies and suggestions for additional material needed for more satisfactory estimates, see Sec. IV, 3 below.

a long way toward elucidating similar problems in the field of national income [3] may be advanced as a partial explanation for the deficiencies of this investigation. Finally, the form of the paper has been strongly influenced by its origin as a study made for the internal use of the Securities and Exchange Commission. Limitations of time have made it necessary to restrict changes in the original version to the relatively secondary matter of presentation and to revisions of series that do not require a considerable amount of statistical spade work.

Perhaps a word is necessary concerning the reason for this attempt to measure the volume and components of saving since we possess at least the principal material and the methods required to derive fairly reliable estimates of the annual volume of investment in the United States.[4] It might seem that there is little point in an attempt to derive the same figures again through a calculation of 'saving'.[5] Indeed, there would not be, were the aim solely to arrive at a national aggregate of saving, except that such an estimate should provide a certain check on the estimates of investment. But the significance of attempts to measure national saving lies elsewhere. What is of importance is not so much the final aggregate but the components that indicate the persons or institutions performing the saving and the forms the change in asset-holding takes. Such a picture, which cannot be

[3] See e.g., *Studies, Volumes One and Two* (1937 and 1938).

[4] See particularly the studies of the National Bureau of Economic Research: Simon Kuznets, *National Income and Capital Formation, 1919–35* (1937) and *Commodity Flow and Capital Formation, Volume I* (1938); and Solomon Fabricant, *Capital Consumption and Adjustment* (1938). Another comprehensive estimate by Mr. Terborgh has now been published in part in the *Federal Reserve Bulletin,* 1939, pp. 731–6. We used an earlier unpublished draft in which a few figures differ slightly from those published.

[5] In making this statement we take the prevailing use of terms among students of the subject to be such that for any period investment and saving are equal, if measurements are made—as in actuality they must be—at the end of the period. To maintain the equality it is necessary to regard the cost of distribution of new securities and similar costs involved in other forms of saving as services equivalent to capital expenditures (Cf. Clark Warburton, *Volume One,* pp. 101–104). It is also assumed that the difference between the Keynesian definition of saving (used here) and the Robertsonian concept is not of great importance statistically unless the period is much shorter than the annual intervals used in this study. (The same conclusion is reached by Gottfried Haberler, *Volume Two,* p. 164).

obtained from statistics of investment, is essential to any thorough analysis of the capital market.

## *I Definitions*

By net saving we mean the part of the national income of residents of the United States earned [6] during any year that is not spent during the same period on consumption goods and services.

Using the concepts of accountancy we measure net saving as the difference between current income and expenses (including payments to equity owners) of all household,[7] business, and government units in the United States or by the equivalent of this difference, the change in the earned surplus of all such units. The theoretical basis and some details of this measurement will be explained in the next section.

Gross saving is defined as net saving plus depreciation allowances on the stock of durable assets held by all households, business and government units. Depreciation allowances are taken from the books wherever they are specifically entered, (i.e., for business corporations). For economic units not recording depreciation allowances in their books resort must be had to rough estimates.[8]

## *II Four Methods of Measuring Saving*

Net saving can be calculated by two methods which may be called, by their origin, the income account and the balance sheet measurements respectively. Both the income account and the balance sheet measurements, in turn, can be based on either sample or overall data. If errors and omissions could be avoided the numerical results of the calculation of net saving for any group of accounting units would, of course, be the same irre-

[6] Earned income excludes capital gains and losses and other revaluation items.

[7] The term 'household' is here used to include, in addition to households and unattached individual consumers, trust funds, unincorporated businesses (except farm enterprises), and private non-profit organizations.

[8] Some of the problems arising in connection with the measurements of depreciation allowances are discussed below in Sec. III, 3.

spective of whether calculated by (1) the sample balance sheet method, (2) the overall balance sheet method, (3) the sample income account method, or (4) the overall income account method.

## 1 BALANCE SHEET AND INCOME ACCOUNT METHODS

The change in the earned surplus of any accounting unit can be ascertained both from its income account and from its balance sheet. In the income account it appears as the difference between (1) current income and (2) current expenses (including income tax payments) plus dividend payments to equity owners (or other entrepreneurial withdrawals), omitting from both sides all revaluation items, which include capital gains and losses.[9] In the balance sheet the earned surplus represents the difference between the depreciated cost of assets on the one hand, and liabilities plus the net contribution to the enterprise by equity owners on the other.[10] The change in the earned surplus, as calculated by the balance sheet method, therefore, is equal to the change in the depreciated cost of assets minus the change in the liabilities and in the net contribution of equity owners, again excluding revaluation items throughout.

These two methods of measuring saving, which are fairly familiar with respect to business enterprises, can likewise be applied to households,[11] non-profit organizations,[12] government units and, finally, to the nation as a whole. We may attempt to find the total current income of all economic units and to deduct their total current expenses as shown in their actual or hypothetical ('constructed') books. Or, we may ascertain for each economic unit the change in its earned surplus (thus excluding changes resulting from (a) net capital contributions and (b) re-

9 For more details see Sec. III, 2 below.

10 This contribution is calculated by subtracting from the total amount received from equity owners in payment for the securities of the enterprise (irrespective of whether reflected on the books as capital or capital surplus) the amounts returned to them on the occasion of the retirement or repurchase of equity securities. Revaluation items are excluded.

11 In the balance sheets of households no account is taken of stocks of non-durable consumers' goods (i.e., all consumers' goods except houses, automobiles, furniture, and household machinery). This corresponds to the omission of expenditures and depreciation on non-durable consumers' goods from the income account measurement of saving.

12 This group of economic units comprises, e.g., foundations, universities, hospitals, and churches.

valuations and capital gains and losses) and add the figures so obtained.

In the process of adding the balance sheets of all economic units, all claims, liabilities, and debt securities cancel out, leaving among the assets only tangible property and the (cost or capitalized) value of certain privileges (mainly patents and similar rights) [13] with 'equity' as the balancing item on the right side.[14] The combined balance sheet of all economic units thus reduces to a statement of the depreciated cost of national physical wealth (plus certain privileges) and its ultimate ownership.

## 2 SAMPLE AND OVERALL METHODS

For both the balance sheet and income account measurement an attempt can be made to cover all accounting units of a specific type, or even all such units in the United States. Such attempts may be designated the overall varieties of these two basic methods. Alternatively, calculations of total saving may be based on the records of a relatively small sample of accounting units.

For the income account measurements, the overall approach demands data on or estimates of the total current income and expenses of all accounting units. Such figures can, in general, be estimated only by indirect methods, and with scant reliability for household units. For business units and the federal government, on the other hand, the aggregations of profit and loss or budget accounts provide relatively comprehensive and reliable information.

As a rule, household and government units do not compile, and rarely publish, balance sheets. It is, therefore, not feasible to measure changes in certain assets and liabilities of all household and government units from aggregations of compiled balance sheets, as can be done for corporate business units. This

[13] This item, to which M. A. Copeland draws attention (see Discussion II) is probably very small in comparison to tangible property if actual balance sheets are taken as the basis of calculation.

[14] This statement is strictly correct only for a closed economy. If the consolidation is carried through solely for one country, there also remains an item, either on the assets or the liabilities side, reflecting the net balance of international claims (including ownership rights) or of international liabilities (including foreigners' equity).

deficiency can be largely remedied by obtaining from other sources statistical information on the total of certain assets and liabilities of all household and government units.[15]

The sample methods, ordinarily used solely for household units, always start from the balance sheets or income accounts of relatively few units. Even the largest sample of this type, that used by the National Resources Committee in its study of consumer expenditures in the United States for the year 1935–36, contained only about 43,000 households. The data in the sample are then multiplied by appropriate coefficients to yield an estimated figure for the total population from which the sample was taken.

### 3 COMPARABILITY OF METHODS

Since both the balance sheet and the income account measurement of saving do in principle yield the same figures, estimates for different groups of accounting units derived by the two methods can safely be combined. This substitutability of the two measurements is of very great practical importance. The statistical material at our disposal is such that the income account measurement constitutes the only practicable approach for certain groups of accounting units while we are restricted for other groups to the balance sheet measurement.

With the material now available the income method is, practically speaking, the only possible approach for government units and the preferable approach for corporations. For households, on the other hand, we must work with the balance sheet method since current and comprehensive data that would make possible a determination of the saving of households by the income account method are not available.

[15] The bank deposits of all households, e.g., can be derived with fair reliability from banking statistics (which also show separately the deposits of government units) supplemented by estimates of bank deposits of business corporations derived from their aggregated balance sheets. Or the change in the holdings of securities by households (excluding realized and unrealized capital gains and losses) can be calculated from statistics of new issues and retirements in conjunction with information on changes in the security holdings of foreigners and of domestic corporations and government units.

## 4 METHODS USED IN THIS STUDY

The figure for total saving presented in this study is the sum of the estimated saving of individuals,[16] farm enterprises, corporations and government units. The series for saving of individuals and farmers has been built up from separate estimates of the change in individuals' and farmers' equity in various types of assets with due consideration for changes in corresponding types of liabilities. The saving of government units and of corporations have been obtained by subtracting from estimated or reported current income the sum of current expenses (excluding capital expenditures) and dividend payments.

The major components of total saving have, with few exceptions, been built up from overall rather than from sample statistics.[17] Both income account and modified balance sheet methods [18] have been used, the former for corporations and for government units, the latter for individuals and farmers.

## 5 PREVIOUS ATTEMPTS TO MEASURE SAVING

To our knowledge, only two comprehensive attempts have been made to measure saving in the United States by the income account method. The first was undertaken by the Brookings Institution for 1929,[19] the second by the National Resources Committee for the year 1935–36.[20] In both, the estimation of individuals' saving was based on the sample method. The relations

[16] The term 'individuals' always includes unattached individuals, households, trust funds, unincorporated non-agricultural businesses, and non-profit making organizations such as churches, universities, foundations. For types of saving omitted in this study see IV, 3 below.

[17] A few of the many basic series have been derived from figures that do not cover the entire field, but in many of these the data cover over 90 per cent of the entire field. Several overall figures taken from other sources were derived by the original estimators from large samples.

[18] The modification introduced into the balance sheet method lies in computing directly the *changes* in particular assets and liabilities and adding these changes to obtain an aggregate figure for saving without ever estimating total actual net assets at any moment of time. This modification, which has both theoretical and practical advantages, does not affect the principle underlying the balance sheet method of measuring saving.

[19] Maurice Leven, H. G. Moulton, and Clark Warburton, *America's Capacity to Consume* (Brookings Institution, 1934).

[20] Contained in a forthcoming report: *Consumer Expenditures in the United States.*

between saving and income for different levels of income obtained in the Brookings study were used by several authors to estimate saving for fairly long periods, sometimes more than a decade distant from the base year, 1929.[21]

The only serious attempts to measure saving of individuals over several years by the balance sheet method, of which we know, were made by W. H. Lough for 1919 to 1931,[22] and Walter Lederer for 1925–1930.[23] It is our opinion that both these attempts, as well as several less comprehensive and less satisfactory efforts, did not result in adequate and comprehensive estimates because of their failure to approach the problem consistently with the appropriate methods of accounting.[24]

## *III Some Special Problems of Measurement*

### 1 STANDARD OF MEASUREMENT

All estimates of saving in this study are expressed, in principle at least, in current dollars. For both theoretical and practical reasons no attempt has been made to reduce the estimates expressed in current dollars of different years to any common denominator. Foremost among these reasons is the absence of any ultimate yardstick or physical measurement of saving that

[21] Clark Warhurton. 'The Trend of Savings, 1900–1929', *Journal of Political Economy*. XLIII (February 1935). 84–101 (for 1914 to 1929): Mordecai Ezekiel. 'An Annual Estimate of Savings by Individuals'. *Review of Economic Statistics*, XIX (November 1937). 178–91 (for 1918 to 1935).

The estimates of saving derived by W. W. Leontief for 1919 ['Quantitative Input and Output Relations in the Economic System of the United States' *Review of Economic Statistics*, XVIII (August 1936). 105–25], and 1929 [unpublished manuscript] as a byproduct of his analysis of production and consumption statistics may in essence be regarded as similar to the income account measurement. They differ, however, from the estimates of the Brookings Institution and the National Resources Committee in that no figures are obtained for the saving of individuals at different income levels.

[22] *High Level Consumption* (McGraw-Hill, 1935).

[23] Jacob Marschak and Walter Lederer, *Kapitalbildung* (London. 1936).

[24] The calculations made by F. G. Dickinson and Franzy Eakin for 1929 are nearer in their methods to our estimates than any of the other attempts and include figures both for the balance sheet and the income account methods of measuring saving. See *A Balance Sheet of the Nation's Economy*, Bureau of Business Research, University of Illinois, Bulletin No. 54 (Urbana. Nov. 24. 1936).

would make it possible to compare the dollar volume of saving at different times.[25]

Quantitative data on saving acquire their economic meaning chiefly in comparison with contemporary monetary magnitudes (such as the national income) or in an analysis of the various components of the saving process. For these purposes, reduction to a common denominator obviously is unnecessary.

A particular problem is created through the use of depreciation allowances, which in their original form often do not represent current values. This difficulty, which will be discussed briefly below, exists only for net saving.

## 2 REVALUATION ITEMS

The change in the earned surplus over a period is equal to the difference between current income and current expenses plus dividend payments to equity owners, excluding all revaluation items from both sides. These revaluation items are of three types: (a) write-ups and write-downs; (b) the difference between cost and balance sheet value of inventories, which may be regarded as a special case of (a); (c) realized capital gains and losses.

a) Current income is almost unanimously held not to include profits and losses representing write-ups or write-downs of assets or liabilities. Attempts have been made in this study to eliminate such write-ups or write-downs wherever they are apparent. It is possible, however, that a considerable amount of similar revaluations included in the basic series used in the

[25] Deflation of the annual dollar volume of saving by a price index of durable goods is not adequate for this purpose. From a theoretical point of view one might think of comparing the utility of the consumption goods purchasable at a certain time with the yield of a certain amount of saving made at different times; or of the utility, properly discounted for the interval until maturity, of the most preferred bundle of yields of the assets purchasable at different points of time with a certain amount of saving. See H. Makower and J. Marschak, "Assets, Prices and Monetary Theory", *Economica*, V (August 1938), 256. These concepts, however, are too vague for translation into actual measurement.

With respect to the value of investment, on the other hand, a certain basis exists for the reduction to a common denominator in the fact that investment results in plant, equipment, and stocks measurable in physical quantities. The practical difficulties of finding a common denominator and calculating adequate index numbers are, however, forbidding. See M. A. Copeland and E. M. Martin, *Volume Two*, pp. 88–99, 106–7.

preparation of the final estimates may have escaped detection and elimination.

b) Inventory profits and losses should also be excluded from current income and from earned surplus since they are essentially equivalent to write-ups or write-downs.[26] This adjustment which, of course, is necessary only where figures from actual books of account embodying such a difference are used (i.e., in this study in the net saving or dissaving of corporations alone) has not been made in the figures presented in this paper. This admittedly important adjustment has been omitted because the estimates of corporate saving also require other adjustments (partly for the probable underreporting of profits and partly for other revaluation items still included), some of which may be in a direction opposite to the correction for inventory profits. It therefore seemed preferable not to attempt, in an unsatisfactory and incomplete way, a partial adjustment which might increase the error rather than reduce it. We realize, however, that a thorough reworking of the figures for corporate saving and dissaving, consistently eliminating all revaluation items, is one of the major prerequisites for satisfactory estimates of total national saving.

c) Realized capital gains and losses likewise must be regarded as revaluation items to be excluded from current income.[27] Since saving has been defined for the purposes of this study as that part of current income which is not spent on consumption goods and services, the results of all revaluations of assets or liabilities

[26] These inventory profits or losses consist of two items: (1) the difference between the cost and the balance sheet valuation of inventories held at the beginning and the end of the period of measurement. (2) the difference between the book value and the market price at the time of consumption of inventories consumed during the period of measurement in the process of production. See Simon Kuznets. *Volume One,* p. 165.

On the practical problems of eliminating inventory profits and losses, see *ibid.*, pp. 145–56 and 165–72.

[27] Unrealized capital gains and losses should, of course, always be excluded from current income and from earned surplus. For discussion of the problem of the treatment of capital gains and losses in estimates of national income, see *Volume One:* M. A. Copeland, Part One, pp. 19, 20, 30–32, discussion by Simon Kuznets and Dr. Copeland's reply: Clark Warburton, Part Two, pp. 97–101: Simon Kuznets, Part Four, discussion by M. A. Copeland, Milton Friedman, and A. W. Marget, and Dr. Kuznets' reply: and *Volume Two:* Roy Blough and W. W. Hewett, Part Four, discussion by M. A. Copeland, H. M. Groves, Simon Kuznets, George O. May, and H. C. Simons, and the reply by Blough and Hewett.

as well as realized and unrealized capital gains and losses, in theory, do not enter into the calculation of saving or dissaving.[28]

Using the income account method it is possible, though difficult in practice, to eliminate revaluations and capital gains and losses by properly adjusting the available basic data, which often include such transactions among current income.[29] In the overall balance sheet method elimination of revaluation items and capital gains and losses is achieved automatically if care is taken not to include revaluation items among changes in assets and liabilities.[30]

[28] Write-downs occasionally constitute only an acknowledgment of regular depreciation or obsolescence formerly omitted from the accounts: likewise some write-ups represent merely the cancellation of excessive depreciation allowances of the past. See Fabricant, *Volume One*, pp. 133–134. While such revaluations may, to some extent, be regarded as forming part of the current income account, it seems preferable to omit them, together with all other revaluation items, from both income and saving.

[29] In the estimate of saving made by the Brookings Institution capital gains and losses were included in income and in saving, but separate figures were shown so that an adjustment is possible. Dickinson and Eakin include 'advances in values due to price changes' (which they take from the Brookings estimates) in their calculated change in the national net worth but show them also as a separate item (*A Balance Sheet*, p. 29).

[30] Capital gains and losses on securities, constituting the great bulk of all capital gains and losses, will never appear directly in the saving subtotal 'net absorption of securities', because absorption is calculated as the difference between the gross proceeds from the issue of new securities minus payments received by investors for securities matured or retired, adjusted for the net purchase or sales balance on account of security transactions by foreigners and for changes in borrowing on securities. This series is obviously unaffected (except for the relatively minor amount of gains or losses on international transactions) by transactions in already outstanding securities, the type of transaction giving rise to capital gains or losses.

However, realized capital gains (or losses), if not spent (or offset by increased saving) during the period of measurement, may appear at the end of the period as an increase (or decrease) in certain assets or liabilities other than securities of the individual making (or suffering) gains (or losses). But, and this is the essential point, such a change in the assets or liabilities of the recipient of capital gains or losses is balanced in the overall statistics by an opposite change in the assets or liabilities of other economic units. Assuming that both purchase and sale occur within the period of measurement and that capital gains or losses are retained in the form in which they are originally made, e.g., in cash, an increase (decrease) in the cash holdings of the gainer (loser) will be offset by a decrease (increase) in the cash balance of the other party to the transaction or an increase (decrease) in his borrowing on securities. In either case, the aggregate figures quite correctly show no saving. Where one of the parties is a foreigner,

## 3 DEPRECIATION

The treatment of depreciation allowances, which constitute the difference between gross and net saving, raises no problems not already discussed in connection with the estimation of national income.[31] These problems are connected mainly with (1) the determination of the useful life of durable assets, (2) the method of distributing total depreciation charges on a durable asset over its entire useful life, (3) the question whether depreciation charges should be based on the original or the replacement cost of durable assets.

For this study the depreciation charges as entered in the books of corporations have provisionally been accepted as adequate reflections of the depreciation accruing on the durable assets of corporations. There is probably little objection to this treatment so far as the determination of the useful life of durable assets and the distribution of depreciation allowances over it are concerned. Accounting practices are anything but consistent and vary from firm to firm and year to year, but we possess neither an economic theory of depreciation sufficiently consistent or of sufficiently general acceptance to justify a systematic correction of the figures entered in the books of corporations, nor would it be possible to carry through such an adjustment in practice.

The relative merits of original or replacement cost as the basis for depreciation allowances are still subject to controversy. Depreciation allowances are, in fact, based on a conglomeration of pure historical cost, historical cost affected by revaluation, replacement cost, and arbitrary values, with historical cost probably prevailing to an extent not exactly determinable. Strict

the offsetting item is absent and a saving (dissaving) is shown, again as it should be.

The psychological effect of capital gains (or losses), whether realized or not, may nevertheless affect consumption expenditure. An increase in wealth which appears as a windfall rather than as a result of saving out of ordinary income is likely to result in increased consumption expenditure, particularly when the gain is realized. The resulting increase in expenditures has repercussions which may and probably will affect income and saving as compared to the level that would have existed had there been no capital gain. Such indirect effects will be reflected in the statistics as they should be, but the capital gain, as such, will not be.

[31] See particularly *Volume One*, Parts One, Three and Four.

adherence to the principle of replacement cost would in any case be extremely difficult since assets written off or abandoned generally are not replaced by physically identical pieces of property, a fact which makes it almost impossible to determine actual replacement costs. Adjustment of depreciation allowances, which are based on cost, by an index of prices of machinery and equipment, therefore, does not solve the problem. It so happens that for the period covered by this study the difference between depreciation based on cost and on replacement values is, apparently, numerically small.[32] These theoretical and practical reasons have induced us not to make any adjustments in the reported depreciation allowances of corporations.

The depreciation allowances on the durable assets held by individuals, farm enterprises, and government organizations had to be estimated for the purpose of this study. The data on the value of the durable assets to be depreciated are subject to such a wide margin of error and the assumptions that had to be made with respect to the useful life of the different types of such assets so rough that it seems inadvisable at present to consider a refinement such as an adjustment for the difference between replacement value and cost.

## 4 DEMARCATION OF CURRENT EXPENSES

The demarcation of the types of expenses to be regarded as current, which by exclusion determines capital expenses, is necessarily somewhat arbitrary. For this study it has been decided to include expenses on durable consumers' goods, as well as those on durable goods used by business and government, as 'capital expenses'.[33] Durable consumers' goods have been defined so as to include not only houses, but also automobiles and certain other types of consumers' goods that ordinarily have a life of more than a year, namely, furniture and household machinery and equipment. Expenditures on some types of consumers' goods that would ordinarily last more than a year have thus been included among current expenses. A fine segregation in the field of these minor durable consumers' goods, however, is of little importance for the statistical results.

[32] See *Volume One*, p. 129.

[33] 'Capital expenses' include also the cost of services associated with the saving process, such as the cost of distributing new securities.

5 TREATMENT OF INTERNATIONAL TRANSACTIONS

The object of measurement is the combined change in the earned surplus of all residents of the United States. The material is such that for both the income account and the balance sheet measurements certain adjustments have to be made in the figures to eliminate changes attributable to persons residing outside the United States.

Where the income account measurement is used, i.e., for government units and business corporations, adjustment is necessary only so far as part of the net saving or dissaving reflected in a change in the earned surplus must be imputed to foreigners on the basis of their ownership of a certain proportion of the equity. Since foreigners, over the period covered by this study, probably owned not more than about 3 per cent of the total equity in all domestic corporations,[34] the error committed by not segregating the corresponding share of foreigners in the change in the earned surplus of domestic corporations is necessarily very small. This omission, moreover, may be either compensated for or aggravated by the failure to make separate allowance for the equity of Americans in changes in the undistributed earned surplus of foreign corporations (other than consolidated subsidiaries).

Where changes in certain items of assets and liabilities have been used in measuring saving (i.e., in the case of individuals and farmers) the portions attributable to individuals residing outside the United States must be deducted in each instance. This has been done, although but roughly, for bank deposits and securities held by foreigners and for foreigners' equity in insurance contracts with American companies.[35] The impossibility of making similar adjustments for other items of assets and liabilities, e.g., individuals' equity in building and loan associations, is probably of no practical importance. Not enough information is

[34] Total capital stock and surplus of all corporations submitting balance sheets to the Treasury amounted to about $110 billion in 1935, while the value of all foreign investments in domestic corporate stock may be estimated on the basis of Department of Commerce figures to have fluctuated between about $3 and $5 billion from 1934 to 1937. See the *Balance of International Payments of the U. S. in 1937*, p. 64.

[35] The residual credit in the balance of international payments suggests that present statistics understate foreigners' acquisitions of cash and securities.

available to make it possible to adjust for the changes in the deposits of American individual investors with foreign banks and in their equity in contracts with foreign life insurance companies; both items, however, may be assumed to have been very small.[36]

### 6 DUPLICATIONS

The method of measuring saving employed in this study, it is claimed, excludes all duplications that have so beset attempts to measure saving by the balance sheet method. Duplications are theoretically avoided under this method because changes in the earned surplus (exclusive of revaluation items) of different economic units are independent of one another in the sense that an increase or decrease in the surplus of one unit is not reflected in a similar change in that of another unit. Changes in assets or in liabilities that are not reflected in a change in the earned surplus of an economic unit do not in principle enter into the calculations and therefore cannot give rise to duplication.[37]

## *IV The Components of the Saving Estimates*

### 1 COMPONENT SERIES

The following separate series, described in more detail in the Appendix, have been used in estimating national saving:

1. Saving of individuals
   a) Change in individuals' holdings of currency and deposits in banks and Postal Savings System
   b) Change in individuals' equity in building and loan associations

[36] A minor problem is raised by the treatment of the capital brought in by immigrants or removed by persons transferring their residence abroad. The figures used in this study always include assets and liabilities of all persons residing within the United States. Annual changes, therefore, include items that reflect the funds brought in by immigrants or removed by emigrants and belong to the capital account rather than to the current income account. There is no possibility at present of estimating these items or of distributing them among the different forms of assets and liabilities of individuals.

[37] In applying the principle, however, there is a possibility of duplications because it is not feasible to compute the changes in earned surplus for each unit individually. In practice the change in earned surplus of individuals is computed for them as a group from the changes in their assets and liabilities.

c) Change in individuals' equity in insurance and pension contracts (measured by the total assets less borrowings and policy loans of insurance companies; includes Social Security funds [38] and state and municipal trust funds)

d) Change in individuals' equity in securities (measured by deducting from the new issues sold for cash, retirements at or before maturity, and adjusting for net purchases or sales by foreigners and by domestic institutions and for changes in individuals' borrowings on securities)

e) Change in individuals' equity in houses (measured by the value of construction of one to four family urban houses minus depreciation and adjustment for changes in residential mortgage debt outstanding and for loss of residences to non-individuals through foreclosure)

f) Change in individuals' equity in passenger cars (measured by the value of domestic retail sales minus depreciation and adjusted for changes in instalment debt outstanding)

g) Change in individuals' equity in other durable consumers' goods, mainly furniture and household machinery (measured as in Item (f) )

2. Business saving

a) Corporate saving (net earnings, adjusted for capital gains and losses, minus cash dividends paid)

b) Business saving of farmers (measured by the value of farm construction, the sale value of farm machinery and the investment in livestock minus depreciation on farm buildings and equipment, adjusted for changes in farm indebtedness and loss of farms to non-individuals through foreclosure) [39]

3. Government saving

a) Federal government (measured by the difference between current receipts and current expenditures, i.e., excluding capital outlays, minus depreciation on government property)

b) States and territorial subdivisions (measured, in principle, in the same way as for the federal government).

## 2 SOURCES AND CHARACTER OF DATA

The sources from which the figures were derived are described in detail in the Appendix. It may suffice here to mention briefly the main sources of the material utilized in our calculations. Most

[38] See the discussion by Dr. Dulles and Dr. Colm regarding the assignment of growth of Social Security funds to individual saving and our reply.

[39] Saving by farmers in other forms is included with individuals' saving.

of the series used in estimating saving of individuals have been derived from the usual financial and production statistics, although adjustments have often been necessary to make the data conform as closely as possible to the concepts used. However, one of the main series, the change in individuals' equity in securities, is based to a large extent on newly assembled data.[40]

For corporate saving our estimates are based on the *Statistics of Income* of the Treasury Department. There is reason to believe that they understate the actual amount of corporate saving because of the tendency to report to the Treasury Department as unfavorable a picture of net income as is compatible with the law.[41] Inventory profits and losses, bad debts, and write-ups and write-downs, other than gains and losses realized on the sale of capital assets, have not been eliminated.

The data for saving of the federal government have been derived from various statements of income and expenditure by the Treasury Department. They are very tentative because the Treasury Department fails to separate in its accounts current and capital expenditures.[42]

The estimate for state and local governments is still rougher. It is based chiefly on published estimates by the National Industrial Conference Board and the Twentieth Century Fund and on estimates of non-federal public construction by the Department of Commerce.

## 3 DEFICIENCIES OF MATERIAL

It is realized that almost every one of the numerous series from which the estimates have been built up can well stand refinement and improvement. In several cases the changes to be expected will be small enough in size and diverse enough in direction to be without appreciable effect on main subtotals or grand totals. In others, however, the corrections are likely to be in a definite

[40] *Selected Statistics on Securities and on Exchange Markets* (Securities and Exchange Commission. August 1939). Parts I and II.

[41] J. F. Ebersole, S. S. Burr, and G. M. Peterson found that for 104 industrial corporations net income for 1923 through 1926 in returns to the Treasury averaged about 12 per cent below that in published reports ('Income Forecasting by the use of *Statistics of Income* Data', *Review of Economic Statistics*, XI (1929), 178).

[42] However, our figures agree fairly well, for the period as a whole, with the rough estimates presented in the President's budget message of January 4, 1939.

direction year after year and to be sufficiently large to alter materially at least some of the major components of the aggregate.

The series used in preparing the estimates are of very different completeness and reliability. Probably the widest margin of error exists in the tentative figures developed to measure the saving of the various government units. A considerable and probably systematic error also affects the estimates for business saving. Of the series measuring individual saving, the figures for saving in the form of durable consumers' goods other than houses and automobiles are little more than guesses. Of the other series, those for individual saving through cash and bank deposits and through insurance are probably subject to the relatively smallest amount of error.

The most important improvements in the statistical material needed in order to obtain fairly reliable estimates of total saving and its components by the method adopted in this study are listed below.

a) Estimates for the net construction and equipment expenditures and net changes in inventories of unincorporated enterprises other than farms—items now simply omitted because of lack of material

b) A new series for corporate saving, eliminating both the understatement inherent in the use of uncorrected Treasury figures and the write-ups and write-downs and other revaluation items now included

c) A new, or rather the first, comprehensive estimate of the saving of government units

d) Estimates of changes in the equity of individuals in buildings other than one to four family houses—omitted because of lack of data

e) An improved estimate of changes in individuals' equity in durable consumers' goods other than houses and automobiles, particularly of changes in consumers' indebtedness

f) Information on the purchase and sale of non-tax-exempt securities by non-financial corporations and data on individuals' borrowing on securities (now lumped with similar borrowing by corporations), both series necessary for an adequate calculation of individuals' equity in securities

g) Information on other forms of indebtedness of individuals and unincorporated businesses to corporations and government units [43]

[43] Samples of detailed balance sheets of individuals on various income levels, particularly in the upper levels—an item rightly stressed by Dr. Hart in Discussion IV—would go far to fill the gaps indicated under (d), (e), and (g).

h) Information on the composition of the persistent residual credit in the balance of international payments. This credit is believed to represent unreported acquisitions of cash or securities by foreigners. Failure to report such acquisitions leads to an overstatement of increases in domestic holdings and therefore to an overstatement of saving.

## *V The Total Volume and Components of Saving, 1933–1937*

### 1 TOTAL NET SAVING

Our estimates of saving, defined as the change in the aggregate earned surplus of all household, business, and government units in the United States, for 1933–37, and rounded to the nearest half billion dollars, are as follows (the negative items represent, of course, dissaving; estimates are in billions of dollars):

| | | |
|---|---|---|
| 1933 | −$6.0 | −$12.5 |
| 1934 | − 4.5 | |
| 1935 | − 2.0 | |
| 1936 | 4.5 | $10.0 |
| 1937 | 5.5 | |

The main series making up these totals are summarized in Table 1. Sources and methods of calculation are described in the Appendix. These figures are very tentative and somewhat incomplete (see Sec. IV, 3 above). It is as yet impossible in calculations of this type to achieve a high degree of accuracy, the more so since there is no assurance that the errors in some series will be compensated by errors in the opposite direction in others. Rounding off the figures to the nearest half billion, or to the nearest one hundred million as in Table 1, serves to emphasize the approximate nature of all the figures and to avoid too unjustified an appearance of precision.

It is likely that these preliminary estimates for total saving somewhat understate the amount of saving, mainly because of the underestimation of corporate saving, the omission of net in-

They would also provide a check on many other estimates and make it possible to analyze the relation between income and changes in certain assets and liabilities.

vestment in plant and inventory by unincorporated business, and the omission of an apparent decrease in certain types of floating debts of individuals owed to corporations and government units. On the other hand, saving by state and local governments is probably overstated somewhat because of the incompleteness of certain depreciation charges.

TABLE 1

NET SAVING IN THE UNITED STATES

*(billions of dollars)*

| | *1933* | *1934* | *1935* | *1936* | *1937* | *1933–37* |
|---|---|---|---|---|---|---|
| *Individual saving* | | | | | | |
| In Liquid Form | | | | | | |
| Currency and deposits | —1.2 | +2.5 | +2.6 | +3.9 | +0.5 | +8.3 |
| Bldg. and Loan associations | —0.6 | —0.3 | —0.4 | —0.2 | —0.1 | —1.6 |
| Insurance and pension reserves | +0.5 | +1.4 | +1.9 | +2.7 | +2.9 | +9.4 |
| Through absorption of securities | +0.5 | —1.0 | —2.3 | +0.1 | +0.6 | —2.1 |
| In Durable Consumers' Goods | | | | | | |
| Non-farm dwellings | —0.3 | —1.7 | —0.8 | 0.0 | —0.2 | —3.0 |
| Automobiles | —0.7 | —0.4 | +0.2 | +0.3 | +0.7 | +0.1 |
| Other | —1.0 | —0.5 | —0.3 | +0.6 | +1.0 | —0.2 |
| Total | —2.8 | 0.0 | +0.9 | +7.4 | +5.4 | +10.9 |
| *Business saving* | | | | | | |
| Agriculture | —0.2 | —0.4 | —0.1 | +0.2 | +0.2 | —0.3 |
| Corporate | —3.1 | —2.5 | —1.5 | —1.2 | —0.9 | —9.2 |
| *Government saving* | | | | | | |
| State and Local | +0.5 | +0.5 | +0.6 | +1.1 | +1.4 | +4.1 |
| Federal | —0.5 | —2.0 | —2.0 | —2.8 | —0.5 | —7.8 |
| *Total national saving* | —6.1 | —4.4 | —2.1 | +4.7 | +5.6 | —2.3 |

In evaluating these figures for total net saving in the United States, it is important to remember that the same absolute amount of saving or dissaving may mean quite different things for the economic process as a whole depending on how it is made up. There is, first, a considerable difference between saving in the form of repayment of indebtedness or of hoarding, which interrupts the flow of income, and saving of equal magnitude that reflects the acquisition of newly produced assets. Thus the type of assets in which saving appears is of considerable importance. The same addition to assets ordinarily will lead to a more precarious situation when it makes its appearance in the form of an addition

to inventories than when it takes the form of new durable goods. Among durable goods, again, saving in the form of durable owner-operated consumers' goods is likely to lead to shorter disturbances in the existing price and production structure than saving that reflects additions to the stock of durable producers' goods. Aside from the type of the new assets, the method of financing also makes a considerable difference. An increase in stockholders' equity usually raises fewer financial problems than a similar increase that finds its counterpart in an addition to the debt structure. Finally, the same amount of net saving means something quite different if it is a result of large gross saving and large depreciation allowances than if both are small; a larger production of durable goods is implied in the first case than in the second.[44]

## 2 COMPONENTS OF NET SAVING, 1933–1937

At least as much importance and interest attaches to the data on the components of saving as to the estimates of aggregate saving discussed in the preceding section. As a matter of fact, methods like those used in this study provide the only way of obtaining information on changes in the structure of the saving process; the proportion of national income saved could as easily be estimated from statistics of the volume of investment.

### a) *Individual, business, and government saving*

The first striking fact that emerges from any quantitative analysis of the saving process from 1933 to 1937 is the predominance of individual saving. In these five years individual saving is estimated to have aggregated about $11 billion while business and government units showed dissaving of about $9.5 and $4 billion

[44] These distinctions apply with considerable force to a comparison between the situation in 1936–37 and the late 'twenties. In 1936–37 a not inconsiderable part of net saving reflected repayment of indebtedness, particularly of residential mortgage debt and borrowings on securities. Cash and bank deposits among the increase in assets of individuals, and inventories of raw materials and finished goods among the increase in assets of business enterprises, were apparently much more important, both absolutely and relatively, than in the late 'twenties. On the other hand, the much higher ratio of gross to net saving in 1936–37 meant that the same amount of net saving reflected larger expenditures on durable goods, and thus a larger effect on the economic system than a decade earlier.

respectively.[45] In 1933 and 1934 none of the three major groups showed net saving, the net dissaving of business being by far the largest item. In 1935 and 1936 individuals were the only major group with positive saving. Even in 1937, when the current income of government units seems to have exceeded their current expenses, individuals contributed by far the largest part of total national saving.[46]

b) *Direct and indirect individual saving*

Closer analysis must distinguish two types of saving by individuals, which may be called direct and indirect net saving. Direct net saving (or dissaving) takes the form of a change in the equity of individuals in individually owned and operated durable consumers' goods. Indirect saving represents the acquisition by an individual of a money claim of determined amount (or the reduction of a debt of determined amount) or of a participation in the equity of a business enterprise.

For 1933–37 as a whole, direct individual net saving is estimated to have been negative to the extent of over $3 billion, as new purchases of durable consumer goods by individuals were not sufficient to make up in full for the accruing depreciation on the existing stock of such goods and the increase in instalment debt. However, while there was considerable direct dissaving during 1933–35 new purchases exceeded depreciation and increase in instalment indebtedness by about $2.5 billion in the two years 1936 and 1937 together. Individuals' equity in nonfarm dwellings declined in every year; for automobiles and other durable consumers' goods the excess in 1936 and 1937 of new purchases over depreciation and increase in consumers' indebtedness was virtually sufficient to cancel the shortage that had persisted from 1933 to 1935.

[45] Corporate dissaving would probably be considerably smaller if more nearly correct figures could be calculated and might even be positive in a few years. This correction, however, would not invalidate the general statement that over the period as a whole business and government showed a net dissaving and that positive saving was restricted to individuals.

[46] It should be remembered that saving in the form of Social Security reserves and trust funds of government units is classified here as saving of individuals. If it were classified as government saving, these statements would still be correct, the preponderance of individual saving being materially reduced only in 1937.

c) *Structure of indirect individual saving*

A further breakdown of indirect individual saving, which constituted most of the nation's net saving over the last six years, is necessary to bring the relevant facts out adequately. There was but little individual saving through absorption of securities. As a matter of fact, over the period as a whole, individuals are estimated to have reduced their holdings of securities (abstracting from changes in the value of securities held) about $3 billion.[47] Only in 1933, 1936, and 1937 did individuals spend more on the purchase of securities than they received from issuers for securities retired or from foreigners or financial institutions for securities bought from individuals in the open market. However, these relatively small purchase balances were more than compensated for by the large reduction in holdings in 1934 and 1935, to a great extent the result of foreign purchases of stocks and redemptions and institutional purchases of corporate bonds.

In the final analysis, then, individual saving was restricted exclusively to increase in (1) individuals' cash and bank deposits and (2) individuals' equity in insurance and pension contracts.[48] For the period as a whole, individual saving in the form of an increase of cash and bank deposits amounted to over $8 billion while individuals' equity in insurance and pension contracts increased nearly $9.5 billion. The average annual saving in these two main forms of indirect saving, therefore, amounted to over $3.5 billion.[49]

## 3 GROSS SAVING

Gross saving, the sum of net saving and depreciation allowances on producers' and consumers' goods, rose rapidly from about $5.5 billion in 1933 to about $18.5 billion in 1937. Our estimates of

[47] For calculation of this figure, see IV, 1.

[48] In his discussion of this paper Dr. Hart suggests that there may also have been a considerable repayment of indebtedness by individuals.

[49] Year to year fluctuations were considerable for individuals' cash and bank deposits. Saving in this liquid form was at a high level from 1934 through 1936, but fell sharply in 1937. Saving through the medium of private and government insurance institutions, on the other hand, grew steadily from not much over $500 million in 1933 to well over $2 billion in 1937. (But see footnote 46.)

gross saving for each of the years 1933–37, again rounded to the nearest half billion dollars, are as follows (in billions of dollars):

| | |
|---|---|
| 1933 | $5.5 |
| 1934 | 7.5 |
| 1935 | 10.0 |
| 1936 | 17.0 |
| 1937 | 18.5 |

## *VI Comparison with other Estimates of Saving and Investment*

### 1 NET SAVING

A direct check on our figures is provided by a comparison with the (as yet unpublished) estimate of saving of individuals in the year ended June 30, 1936, prepared by the National Resources Committee from material collected in connection with the Consumer Purchases Study. The expenditures on durable consumers' goods other than houses are not included in saving, and depreciation on consumers' durable goods is omitted throughout; otherwise, however, the definitions coincide fairly well with those adopted in our study. To make comparison possible an estimate has been prepared, by the methods used in our calendar year estimates, of individual saving for the year ended June 30, 1936. The estimate so derived, after eliminating net saving or dissaving in consumers' durable goods other than houses, coincides fairly closely with the calculations of the National Resources Committee, both indicating about $6 billion (before depreciation on houses).[50]

[50] Direct comparison of our estimates with those developed by Ezekiel, *op. cit.*, for each year 1918–35 by a method similar to that applied to 1914–29 data by Warburton, *op. cit.*, is not possible because Dr. Ezekiel's figures cover only saving by income tax payers (i.e., individuals with an annual net income of over $1,000) and do not include the change in individuals' equity in automobiles and other durable consumers' goods.

Dr. Ezekiel's estimates are based on the income statistics of the Treasury Department and the ratios of saving to total income at different income levels as determined by the Brookings Institution for 1929. In fact, the estimates represent nothing but a weighted aggregate of the income of taxpayers in the different groups, the Brookings saving ratios being used as weights. The annual movement

The most important check upon our estimates of saving are the calculations of net investment, i.e., the value of expenditure on durable goods minus depreciation, adjusted for changes in inventories not resulting from price changes and for the foreign balance.

Comparison is possible, first, with estimates of expenditures on durable goods prepared by Mr. Terborgh of the Division of Research and Statistics, Board of Governors of the Federal Reserve System.[51] Since Mr. Terborgh's figures do not include the value of changes in inventories or in the foreign balance, these two items must be added to his figure to make them comparable with our estimates of saving. The estimates indicate net aggregate disinvestment and dissaving respectively of about $8 and $12.5 billion for 1933–35, and positive aggregate investment and saving of about $13 and $10 billion, respectively, for 1936 and 1937. Most of the discrepancy occurs in 1935 and 1937, when estimated saving is considerably below calculated net investment.[52]

The differences are considerably larger between the estimates of saving presented in this paper and the figures for net investment (excluding durable consumers' goods other than houses) calculated by Kuznets.[53] Kuznets' estimates for net investment

of the estimates therefore reflects only the changes in the income structure of individual taxpayers and does not allow for changes in the propensity to save for incomes of equal size, which may well be of considerable importance. See W. L. Crum, 'Individual Shares in the National Income', *Review of Economic Statistics*, XVII (November 1935), 116–30; E. W. Gilboy, 'The Propensity to Consume', *Quarterly Journal of Economics*, LIII (November 1938), 120–40.

Although Dr. Ezekiel's estimates cover the saving of only part of the population, his absolute figures for 1933–35 are considerably higher than those presented in this paper. This is probably due mainly to two factors: (1) his estimates include capital gains which were particularly large in 1929, the base year for the saving ratios used throughout; (2) they exclude individuals with a net income of under $1,000, who, as is known from other sources, are responsible for a considerable amount of dissaving.

[51] The figures for net expenditures on durable goods in 1929 prices have been kindly supplied by Mr. Terborgh.

[52] Virtually the same figures are used in estimating individuals' equity in durable consumers' goods, the difference being only the adjustment for changes in instalment debt outstanding which is made in the saving estimate.

[53] 'Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–1938', *Bulletin 74*, National Bureau of Economic Research (June 25, 1939), p. 2.

are higher throughout than our figures for net saving (excluding net saving reflected in purchases and depreciation of durable consumers' goods other than houses). For 1933–35 net investment according to Kuznets was negative to the extent of over $4 billion while our figures show net dissaving of about $10 billion. For 1936 and 1937 estimated net saving of less than $8 billion compared with calculated net investment of over $13.5 billion.[54]

Both comparisons suffer because: (1) the estimates of saving imply a book value measurement of changes in inventories whereas in the estimates of capital formation the change in inventories is adjusted for price changes; (2) the estimates of saving omit the change in non-corporate inventories whereas the estimates of capital formation include the change in inventories of all business enterprises; (3) the estimates of capital formation apparently include certain commodities, the purchase of which is often regarded as a current expense in the books of business corporations. Had it been possible to adjust the saving figures for revaluation of corporate inventories and also to include the value of changes in non-corporate inventories, dissaving (and therefore the discrepancy between the estimates of saving and investment) would probably have been greater in 1933 and 1934 than is indicated above. In 1935 and particularly 1937, and probably also in 1936, positive saving would have been greater, however, and the discrepancy would have been less.

## 2 GROSS SAVING

Our estimates of gross saving for each of the years 1933 to 1937, together with the estimates of gross investment by Kuznets and Terborgh, are shown in the table below to the nearest half billion dollars. This comparison is affected by the differences just mentioned in the preceding section.

[54] Let none assume that any difference as shown here between the estimates of saving and those of investment measures the divergence between saving and investment during a given period. Both sets of figures are undoubtedly still affected with a margin of error so large that differences of the order of magnitude indicated here may be nothing but the result of the imperfections of one or both sets of estimates. They are certainly not able to disprove the theoretically demonstrated equality of investment and saving measured *a posteriori* for any period.

| | ESTIMATED GROSS SAVING [1] | GROSS INVESTMENT [1] KUZNETS' ESTIMATE | GROSS INVESTMENT [1] BASED ON TERBORGH'S ESTIMATE [2] |
|---|---|---|---|
| 1933 | $ 5½ | $ 7½ | $ 6½ |
| 1934 | 7½ | 10 | 9 |
| 1935 | 10 | 15 | 14 |
| 1936 | 17½ | 21 | 19½ |
| 1937 | 18½ | 25 | 23 |

[1] Including consumers' durable commodities.

[2] To Terborgh's figures have been added the additions or reductions in inventories (according to the estimates of Kuznets) and the foreign balance on current account to make the figures comparable with those in the other two columns.

## APPENDIX: STATISTICAL SOURCES AND METHODS

Sections I–VII of the Appendix relate to individuals' saving,[55] Sections VIII and IX to business saving, and Sections X and XI to government saving.

### *I Change in Currency and Deposits in Banks and Postal Savings System held by Individuals (Table I)*

In order to develop a series for the cash holdings of individuals it is necessary to prepare two main subtotals: first, total volume of currency, and bank and Postal Savings deposits in the hands of the public; second, the amount of such cash held by foreigners and by domestic non-individuals. The second subtotal must be subtracted from the first in order to arrive at an estimate of currency and deposit holdings of domestic individuals.

1. *Total currency outside banks and U. S. Treasury*. Obtained from the Division of Research and Statistics, Board of Governors of the Federal Reserve System. It is based on a calculation of total money in circulation outside the Treasury and the Federal Reserve banks and figures for currency in the hands of banks, reported by the Comptroller of the Currency for all banks on June 30 and by the Federal Deposit Insurance Corporation for insured banks on December 31 of 1934 and succeeding years.

[55] Throughout this study the term 'individual' is used to include unincorporated businesses (other than farms), trust funds, and non-profit-making institutions such as churches and universities.

TABLE 1

## CHANGE IN INDIVIDUALS' HOLDINGS OF CURRENCY AND DEPOSITS IN BANKS AND POSTAL SAVINGS SYSTEM

*(millions of dollars)*

| | | YEARS ENDING DECEMBER 31 | | | | | |
|---|---|---|---|---|---|---|---|
| | | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
| 1 | Total currency outside banks and U. S. Treasury | 4,710 | 4,800 | 4,670 | 4,940 | 5,550 | 5,690 |
| 2 | All bank deposits, excl. inter-bank deposits | 41,780 | 38,651 | 44,679 | 48,724 | 53,420 | 52,318 |
| 3 | Deposits in Postal Savings System | 902 | 1,209 | 1,207 | 1,201 | 1,260 | 1,270 |
| 4 | Deposits of Postal Savings System in banks | 793 | 914 | 540 | 287 | 145 | 130 |
| 5 | Items in process of collection by banks | 1,180 | 1,176 | 1,949 | 2,313 | 2,604 | 2,326 |
| 6 | Total currency and deposits, adj. (1+2+3—4—5) | 45,419 | 42,570 | 48,067 | 52,265 | 57,481 | 56,822 |
| 7 | Currency and deposits of non-financial corp. | 6,431 | 6,131 | 6,395 | 6,828 | 7,607 | 6,922 |
| 8 | Currency and deposits of financial corp. excl. banks | 1,698 | 1,659 | 2,357 | 3,035 | 2,908 | 2,472 |
| 9 | U. S. Gov. deposits in commercial banks | 500 | 1,000 | 1,687 | 881 | 947 | 801 |
| 10 | Deposits of other public bodies | 1,826 | 2,026 | 2,601 | 3,079 | 3,263 | 3,256 |
| 11 | Deposits of foreigners | 715 | 390 | 496 | 1,056 | 1,325 | 1,437 |
| 12 | Deposits of foreign banks with Federal Reserve banks | 19 | 4 | 19 | 29 | 99 | 172 |
| 13 | Deposits of foreign banks with U. S. commercial banks | 248 | 136 | 156 | 453 | 442 | 466 |
| 14 | Total deductions (7+8+9+10+11—12—13) | 10,903 | 11,066 | 13,361 | 14,397 | 15,509 | 14,250 |
| 15 | Currency and deposits of domestic individuals in open domestic banks and Postal Savings System (6—14) | 34,516 | 31,504 | 34,706 | 37,868 | 41,972 | 42,572 |
| 16 | Annual change | | —3,012 | +3,202 | +3,162 | +4,104 | +600 |
| 17 | Change in U. S. currency held abroad | | —90 | —26 | | +22 | |
| 18 | Change in individuals' deposits in closed banks | | +1,690 | —770 | —530 | —145 | —85 |
| 19 | Change in currency and deposits of domestic individuals (16—17+18) | | —1,232 | +2,458 | +2,632 | +3,937 | +515 |

2. *All bank deposits excluding inter-bank deposits.* A revision of figures appearing in the *Federal Reserve Bulletin*, also obtained from the Division of Research and Statistics, Board of Governors of the Federal Reserve System. It does not include deposit liabilities of Federal Reserve banks (which consist only of deposits held by domestic or foreign banks and the U. S. Treasury) but does include those of the major private banks.

3. *Deposits in Postal Savings System.* Taken from the *Federal Reserve Bulletin.*

4. *Deposits of Postal Savings System in banks.* Also taken from the *Federal Reserve Bulletin.* In order to avoid duplication it must be deducted from total deposits of banks.

5. *Items in process of collection by banks.* In order to avoid duplication this figure must be deducted from the reported total of deposits because items in the process of collection are included in the deposits reported by the banks of both the payor and the payee. The figures were obtained from the Division of Research and Statistics, Board of Governors of the Federal Reserve System; they are a few million dollars higher than the published figures for insured banks only. The reported data are known to be too low because some banks report their collection items under the heading 'due from banks'.

6. *Total currency and deposits, adjusted.* Sum of items 1, 2, and 3, less items 4 and 5. It is the first main subtotal referred to in the opening paragraph of this section.

7. *Currency and deposits of non-financial corporations.* The primary source for this estimate for 1932–36 is *Statistics of Income,* published by the Bureau of Internal Revenue. This volume contains the total cash reported by corporations submitting balance sheets with their income tax returns. Figures for these corporations are raised slightly to cover all corporations. The figure for 1937 was derived by reducing the 1936 figure 9 per cent. This percentage represents the change in cash held by 385 corporations as reported by the Standard Statistics Company. The estimate should be regarded as preliminary and subject to considerable revision.

8. *Currency and deposits of financial corporations other than*

*banks*. For 1932–36 the figure for financial corporations submitting balance sheets, other than banks, was made available by the Bureau of Internal Revenue. Deposits of mutual life insurance companies and building and loan associations are included. The figure for 1937 was assumed to be 15 per cent less than in 1936, the same as the percentage decline in the cash holdings of 49 life insurance companies reported in the annual proceedings of the Association of Life Insurance Presidents. The estimate is also subject to revision, which may be drastic, when *Statistics of Income for 1937* is published.

9. *U. S. Government deposits in domestic commercial banks.* For 1934–37, taken from the Federal Deposit Insurance Corporation call reports for insured banks. For 1932 and 1933 estimates were made from reports for member banks by multiplying these figures by the ratio between U. S. Government deposits in insured banks and in member banks in 1934–37.

10. *Deposits of other public bodies.* Obtained in same manner as item 9. The duplication referred to in the explanation of item 5 is also involved in item 10 because these figures were taken from bank statements. The outstanding checks of state and local governments are large but neither their size nor the change therein can be estimated. The debits of state and local government were reported only beginning with the week ended February 8, 1939, when they amounted to $360 million.

11. *Deposits of foreigners.* Figures for year-ends beginning with 1932 taken from *The Balance of International Payments of the United States for 1937*, Table 36, p. 87.

12. *Deposits of foreign banks with Federal Reserve banks.* This item, which appears in the statement of the condition of Federal Reserve banks, must be added to total deposits because item 11, which is to be deducted, includes foreigners' deposits with Federal Reserve banks, whereas the total deposits from which the deduction is to be made do not. In Table I this addition is performed by deducting the item from the deductions.

13. *Deposits of foreign banks with U. S. commercial banks.* Based on Federal Reserve Board and Federal Deposit Insurance Corporation reports for member and insured banks. This item

must also be added back to total deposits because it represents inter-bank deposits, not included in item 6 but included in item 11.

14. *Total deductions.* Sum of items 7–11, minus items 12 and 13. It is the second main subtotal referred to in the opening paragraph of this section.

15. *Currency outside banks, U. S. Treasury, and corporations and deposits of domestic individuals in open domestic banks and in Postal Savings System.* Item 6 minus item 14.

16. *Annual change in item 15.*

17. *Annual change in U. S. currency held abroad.* Net receipts from abroad, shown as a negative figure in Table I, must be added to the annual changes in item 4, and net shipments must be deducted since they constitute changes in the domestic stock of cash which would otherwise not appear in the total. The figures, the reliability of which is rather doubtful, were taken from *The Balance of International Payments of the United States.*

18. *Change in individuals' deposits in closed banks.* The estimated annual change in individuals' deposits in closed banks must be added to item 16, since closed banks were not included in the above figures. The deposits of banks closed during a given year are included in total deposits at the end of the preceding year but not in total deposits at the end of the given year.

The basic material for these estimates (Table I–1) is not very satisfactory. The estimates were prepared by the authors, with the advice of experts of the Board of Governors of the Federal Reserve System and Federal Deposit Insurance Corporation who, however, are not responsible for the figures. The footnotes to Table I–1 describe in detail the methods and the sources used in constructing the final figure.

19. *Change in currency and deposits held by domestic individuals.* Sum of items 16 and 18 minus item 17.

Changes in the holdings of foreign currency and deposits of individual Americans in foreign banks should be added in computing the final total, but there is no direct information concerning such changes, and the data now available are insufficient to make an estimate possible. It is believed, however, that nonindividuals hold at least 95 per cent of the total deposits of Amer-

TABLE I-1

CHANGE IN INDIVIDUALS' DEPOSITS IN CLOSED BANKS

*(millions of dollars)*

| | | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|---|
| 1 | Deposits in banks closed during year [1] | 3,599 | 37 | 10 | 11 | 20 |
| 2 | Deposits in banks reopened [2] | 410 | 266 | 20 | 0 | 0 |
| 3 | Dividends paid to unsecured creditors [3] | 775 | 872 | 747 | 220 | 140 |
| 4 | Change in deposits in closed banks (1—2—3) | +2,414 | —1,101 | —757 | —209 | —120 |
| 5 | Estimated change in individuals' deposits in closed banks [4] | +1,690 | —770 | —530 | —145 | —85 |

[1] Figures for 1933 from *Annual Report*, Board of Governors, Federal Reserve System, 1936, p. 177; for 1934–37 from *Federal Reserve Bulletin* (1938), p. 510; 1933 figure excludes deposits in banks reopened between March 16 and June 30.

[2] From Board of Governors, Federal Reserve System. The 1933 figure is for July to December only.

[3] Years ending October 31. The figures, which include offset allowances, are estimated to be 280 per cent of the payments by national banks, reported for 1933–36 by the Comptroller of the Currency and estimated for 1937. The ratio of 280 per cent is based on figures for the cumulated deposits of suspended national and state banks.

[4] Estimated at 70 per cent of total deposits on basis of relationship in open banks.

icans in foreign banks. The deposits of individuals in foreign banks may therefore be neglected, since they would vary only between $5 and $15 million at the maximum.

## *II Individuals' Equity in Building and Loan Associations (Table II)*

In calculating individuals' saving through building and loan associations, no distinction need be made between the form such saving takes, namely, whether it is made in the form of purchase of shares or in the form of an increase in deposits. For this reason it can be measured from changes in the total assets of building and loan associations. It is necessary, however, to deduct from total assets the liability for funds contributed by non-individuals. So-called share-loans or pledged shares should also be deducted

TABLE 11

CHANGE IN INDIVIDUALS' EQUITY IN BUILDING AND LOAN ASSOCIATIONS

*(millions of dollars)*

| | | END OF YEAR | | | | | |
|---|---|---|---|---|---|---|---|
| | | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
| 1 | Total assets | 7,750 | 6,978 | 6,451 | 5,889 | 5,742 | 5,712 |
| 2 | Borrowed funds | 280 | 272 | 209 | 183 | 205 | 239 |
| 3 | Preferred stock owned by H.O.L.C. | 0 | 0 | 0 | 20 | 126 | 207 |
| 4 | Preferred stock owned by U. S. Treasury | 0 | 0 | 11 | 49 | 49 | 48 |
| 5 | Pledged shares | 1,100 | 900 | 700 | 500 | 400 | 350 |
| 6 | Total deductions (2+3+4+5) | 1,380 | 1,172 | 920 | 752 | 780 | 844 |
| 7 | Net equity of individual shareholders (1—6) | 6,370 | 5,806 | 5,531 | 5,137 | 4,962 | 4,868 |
| 8 | Change in net equity of individual shareholders | | —564 | —275 | —394 | —175 | —94 |

because they represent either unpaid balances due on shares or actual loans made to shareholders on the security of their shares. The situation is more truly reflected if the share account and the share loans are eliminated from both sides of the balance sheet.

The statistics of building and loan associations are unsatisfactory. The only comprehensive reports available up to 1936 are the annual compilations of the United States Building and Loan League, which do not make possible an adjustment for share loans. In recent years comprehensive and detailed statistics have become available for the federally chartered building and loan associations and for those participating in the Federal Home Loan Bank System. These associations, however, have less than one-third of the total assets of all associations. Any series for saving through building and loan associations must, therefore, be highly tentative. The following figures have been used:

1. *Total assets of building and loan associations.* From *Building and Loan Annals,* published by U. S. Building and Loan League.

2. *Borrowed funds.* Same source as item 1.

3. *Preferred stock owned by Home Owners' Loan Corporation.* Taken from the *Federal Home Loan Bank Review* and from the daily Treasury statement for the end of January, which

shows in detail the assets and liabilities of government corporations and credit agencies for year-ends.

4. *Preferred stock owned by U. S. Treasury.* The annual reports of the Federal Home Loan Bank Board give the government share subscriptions in member associations on December 31, 1935 and later years after deduction of Home Owners' Loan Corporation holdings. The remainder represents direct Treasury holdings which are confined to stock of federal associations. The figures for earlier years were obtained from the itemized statement of Treasury expenditures in the mid-month daily treasury statements.

5. *Pledged shares.* Figures for pledged shares are very incomplete, as may be seen from the discussion of the statistics in *Debts and Recovery*.[56] The figures in Table II for 1933 to 1936 are those used in that volume. The 1937 figure is our estimate, based upon the earlier years and discussions with experts at the Federal Home Loan Bank Board.

6. *Total deductions.* Sum of items 2–5.

7. *Net equity of individual shareholders.* Item 1 minus item 6.

8. *Change in net equity of individual shareholders.*

## *III Individuals' Equity in Insurance and Pension Reserves (Table III)*

Saving through insurance, for the purposes of this study, is measured by the change in policyholders' net equity, i.e., total assets minus capital obtained from non-policyholders and minus policy loans and notes. This method lumps together changes in policyholders' and shareholders' equity. This, however, is not a drawback because most large life insurance companies and funds are mutuals in which there are no stockholders or members distinct from policyholders. The small undistributed net earnings of stock companies, which will appear in the figure for corporate saving (Sec. IX), have, however, been deducted in calculating the net equity of policyholders.

[56] A. G. Hart and the Committee on Debt Adjustment, *Debts and Recovery* (Twentieth Century Fund, 1938), pp. 76, 78, 80, 81, and 298.

TABLE 111

## INDIVIDUALS' EQUITY IN INSURANCE AND PENSION RESERVES

*(millions of dollars)*

| | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|---|
| 1 Legal Reserve Life Insurance Companies | | | | | | |
| a Total assets | 20,117 | 20,259 | 21,162 | 22,612 | 24,267 | 25,598 |
| b Borrowings from RFC | 60 | 63 | 53 | 36 | 33 | 30 |
| c Loans to policyholders | 3,730 | 3,710 | 3,510 | 3,380 | 3,250 | 3,230 |
| d Net equity (a—b—c) | 16,327 | 16,486 | 17,599 | 19,196 | 20,984 | 22,338 |
| e Change in net equity | | +159 | +1,113 | +1,597 | +1,788 | +1,354 |
| f Corporate saving of stock companies | | —29 | —32 | —23 | —27 | —33 |
| g Change in net equity of policyholders (e—f) | | +188 | +1,145 | +1,620 | +1,815 | +1,387 |
| 2 Fraternal Orders | | | | | | |
| a Total reserves | 680 | 794 | 822 | 850 | 888 | 924 |
| b Loans | 37 | 45 | 54 | 65 | 68 | 71 |
| c Net equity (a—b) | 643 | 749 | 768 | 785 | 820 | 853 |
| d Change in net equity | | +106 | +19 | +17 | +35 | +33 |
| 3 U. S. Gov. Life Insurance Fund | | | | | | |
| a Total reserves | 559 | 615 | 665 | 724 | 789 | 850 |
| b Loans | 111 | 122 | 122 | 128 | 129 | 139 |
| c Net equity (a—b) | 448 | 493 | 543 | 596 | 660 | 711 |
| d Change in net equity | | +45 | +50 | +53 | +64 | +51 |
| 4 Social Security Funds | | | | | | |
| a Total | | | | | 64 | 1,138 |
| b Change | | | | | +64 | +1,074 |
| 5 Other Treasury Funds | | | | | | |
| a Total | 224 | 245 | 254 | 282 | 316 | 428 |
| b Change | | +21 | +9 | +28 | +34 | +112 |
| 6 Adj. Service Certificate Fund, Change | | | | | +500 | |
| 7 State and Municipal Trust Funds, Change | | +100 | +200 | +200 | +200 | +200 |
| 8 Total Change (1g+2d+3d+4b+5b+6+7) | | +460 | +1,423 | +1,918 | +2,712 | +2,857 |

1 LEGAL RESERVE LIFE INSURANCE COMPANIES

a) *Total assets.* Derived from annual proceedings of the Association of Life Insurance Presidents. A downward adjustment of approximately 3 per cent, based on the ratio of reserves against foreign business to total reserves, was made to allow for the fact that some of the assets represent the equity of foreign policyholders.[57]

b) *Borrowings from Reconstruction Finance Corporation.* Taken from R. F. C. reports and deducted from item (a). Small in amount, these borrowings are believed to constitute virtually the only funds obtained from other than policyholders.

c) *Policy loans and premium notes in the United States.* The figure for all companies, which must be deducted from item (a), was estimated from that for companies reported in the annual proceedings of the Association of Life Insurance Presidents. The published figures are based on about 50 companies holding fully 90 per cent of the assets of all legal reserve life insurance companies in the United States, and show separately that part of policy loans and premium notes emanating from the United States. The estimate was made by applying to these figures the ratio of total admitted assets of reporting companies to total admitted assets of all companies.

d) *Net equity.* This item, item (a) minus items (b) and (c), represents the net equity of shareholders and policyholders together.

[57] Changes in the equity of American policyholders in contracts with foreign life insurance companies should, on the other hand, be counted as a separate item of saving. In the absence of comprehensive information on the subject, no allowance for this item was made in the final figures.

The Sun Life Insurance Company of Canada reported its net liabilities, in millions of dollars, on United States business as follows:

| | END OF | | | | | |
|---|---|---|---|---|---|---|
| | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
| Amount | 167 | 173 | 190 | 208 | 231 | 252 |
| Change | | +6 | +17 | +18 | +23 | +21 |

The total assets of the Sun Life Insurance Company amount to about 40 per cent of those of all Canadian life insurance companies. No information is available on equity of American policyholders with other foreign life insurance companies but the amount and the changes in it may be assumed to be negligible.

e) *Change in net equity.*

f) *Corporate saving of stock companies.* Obtained from the Income Section, Department of Commerce.

g) *Change in policyholders' net equity.* Item (e) minus item (f). The deduction of item (f) eliminates the equity of shareholders in stock companies, leaving as a final figure the change in net equity of policyholders in stock and mutual companies.

2 FRATERNAL ORDERS

a) *Total certificate and contingent reserves.* Based on figures taken from *Statistics Fraternal Societies* of the Fraternal Monitor and from the *New York Insurance Reports. Volume IV.* The 1935–37 figures from the *Statistics Fraternal Societies* are considered all-inclusive. For prior years the ratio between the 1935 figure from this source and the corresponding figure in the *New York Insurance Reports* was applied to the 'other reserve' figures in the *New York Insurance Reports.* All the figures were, however, adjusted for reserves against liabilities to foreign members on the assumption that these were roughly equal to one-half the total liabilities to policyholders of Canadian companies included in the statistics. As the item is small, details of the adjustment are not important.

b) *Loans and liens to policy and certificate holders.* Estimated by multiplying the data published in *New York Insurance Reports, Volume IV,* by the ratio between total assets as given in *Statistics Fraternal Societies* and *New York Insurance Reports.* This estimate was then adjusted for loans and liens to foreigners on the assumption that half the total for foreign organizations represented loans and liens to foreigners. Figures for 1936 and 1937 are estimated from a sample of the largest fraternal orders.

c) *Net equity of individuals.* Item (a) minus item (b).

d) *Change in item (c).*

3 U. S. GOVERNMENT LIFE INSURANCE FUND

a) *Total reserves.* The 1932–36 figures appear in the annual report of the Administrator of Veterans' Affairs for 1937. The estimate for 1937 is based on the rate of change during preceding years.

b) *Policy loans.* The source for 1932–36 figures and the estimate for 1937 are the same as for total reserves.

c) *Net equity.* Item (a) minus item (b).

4 SOCIAL SECURITY FUNDS AND ACCOUNTS

This figure represents the change in investments of the Old Age Reserve Account and the Unemployment Trust Fund, as reported in the daily statement of the United States Treasury.

5 OTHER TREASURY FUNDS

Under this heading are included the Civil Service Retirement Fund. the Foreign Service Retirement Fund, the Canal Zone Retirement Fund, the Railroad Retirement Account, and the Alaska Railroad Retirement Fund. Figures are obtained in the same way as those for Social Security funds.

6 ADJUSTED SERVICE CERTIFICATE FUND

The certificates have been regarded as equivalent to annuity or life insurance contracts although veterans have not made any payments, the value of the certificates resulting purely from allocations of U. S. Treasury funds. The equity of individuals was therefore the difference between the estimated actuarial value of the adjusted service certificates prior to their redemption in 1936 and the loans made against them to veterans. Changes in this equity from year to year were negligible except in 1936, when the equity is estimated to have increased about $500 million as a result of the premature payment of the face value. Estimates are based on figures appearing in the annual reports of the Administrator of Veterans' Affairs for maturity values of certificates and loans against them.

7 STATE AND MUNICIPAL TRUST FUNDS

Changes in assets were taken as representative of changes in equity of individuals in these funds. They were assumed to be about twice the figure for New York State trust funds plus the funds of cities having a population of 100,000 or over, as derived from various issues of *Financial Statistics of Cities* (Bureau of the Census, U. S. Department of Commerce). The 1937 figure is estimated on the assumption of a continuous growth.

## IV Change in Individuals' Equity in Security Holdings (Table IV)

To measure the saving of domestic individuals in the form of securities, it is necessary to calculate the net purchases (or sales) of securities by individuals and to deduct the increase (or add the decrease) in their borrowings against securities. In the absence of adequate figures bearing directly on transactions by

TABLE IV

CHANGE IN INDIVIDUALS' EQUITY IN SECURITIES

*(millions of dollars)*

| | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|
| 1 Net change in securities outstanding [1] (at cost value) | +1,374 | +4,124 | +1,317 | +5,167 | +3,044 |
| 2 Change in foreign holdings [2] | +10 | +80 | +270 | +655 | +309 |
| 3 Change in holdings of domestic non-individuals [3] | +1,164 | +5,382 | +3,376 | +4,303 | +2,596 |
| 4 Change in holdings of domestic individuals | +200 | —1,338 | —2,329 | +209 | +139 |
| 5 Change in borrowings of domestic individuals on securities [4] | —366 | —306 | +28 | +82 | —463 |
| 6 Change in domestic individuals' equity in securities | +566 | —1,032 | —2,357 | +127 | +602 |

[1] From Table IV–1.
[2] From Table IV–4.
[3] From Table IV–5.
[4] From Table IV–6.

domestic individuals, their net purchases or sales must be determined indirectly. This is done by computing the joint net purchases or sales of securities by both individuals and institutions and by adjusting the result for the net purchases or sales of institutions and foreigners.

The figure for net purchases by individuals and institutions together is the sum of separate computations for different types of securities. Data on new security issues of the federal government and its agencies, and of the states and their terrritorial subdivisions, are directly available. But comprehensive information is lacking on retirements by states and their subdivisions. It is therefore preferable to base the calculation directly on the change in the amount of securities outstanding in the hands of the public. This change is known accurately for securities of the federal

government and its agencies. For state and municipal securities it has to be estimated rather crudely but even this estimate is preferable to a calculation of the difference between new issues and retirements because statistics on retirements are very unsatisfactory. On the other hand, net purchases or sales of corporate and foreign securities by individuals and institutions are computed by subtracting estimated retirements from new issues.

Changes in the value of securities outstanding do not enter into the computations because net sales and purchases are affected only by new and retired issues. This is as it should be, for such changes do not represent saving according to the definition used in this study.

Net purchases and sales of securities by domestic individuals are derived by subtracting from the difference between new issues and retirements the changes in the holdings of domestic institutional and foreign investors. To arrive at a figure representing the net purchase and sale balances of institutional investors (i.e., the money spent or realized from transactions in securities) it is necessary to eliminate from the changes in their holdings the effects of revaluations on securities held and of gains and losses on the sale of securities. To effect this correction an increase in holdings, reported in the balance sheets of institutions, is reduced by the amount of write-ups and capital gains or increased by the amount of write-downs and capital losses, while the opposite adjustments are made in the case of a decrease in the reported holdings.

The change in the equity of domestic individuals in securities, summarized in Table IV, is computed as follows:

1. *Net change in securities outstanding.* This figure, the computation of which is described in detail in Sec. 1–3 below, represents the gross receipts by issuers of securities less their expenditure for retirements, including in gross receipts the amounts received by underwriters and distributors. It therefore indicates the net amount spent on purchases or received from sales of securities by other than issuers.

2. *Change in foreign holdings.* This figure is the net purchase or sale balance of foreigners, taken from *The Balance of International Payments of the United States* (see Table IV–4). Bond redemptions and sinking fund payments to foreigners have to be

deducted. All such redemptions are included in our retirement figures but some of the securities retired were held abroad and must be added back. This addition is performed here by reducing the change in foreign holdings which must be deducted from 'net change in securities outstanding.' No adjustment for revaluation or capital gains or losses is necessary.

3. *Change in holdings of domestic non-individuals.* Computation explained in detail in Section 4 below.

4. *Change in holdings of domestic individuals.* Item 1 minus items 2 and 3.

5. *Change in domestic individuals' borrowings on securities.* This item, whose computation is explained in Section 5 below, represents the change in net liabilities of individuals to non-individuals on account of securities, and must be deducted from the change in holdings to get the change in individuals' equity.

6. *Change in individuals' equity.* This final item, used to measure domestic individuals' saving in the form of securities, is equal to item 4 minus item 5.

## 1 COMPUTATION OF NET CHANGE IN SECURITIES OUTSTANDING (TABLE IV–1)

This item is the total of changes in the following types of securities:

a) *U. S. Government direct obligations.* Measured by the annual change in direct interest-bearing obligations outstanding (including those held by Treasury funds and agencies) as shown by the daily statement of the U. S. Treasury, excluding bills and certificates of indebtedness with maturities of less than one year. Exchanges of bonds and notes for certificates of indebtedness of less than one year maturity are thus treated as cash offerings.

b) *U. S. Government guaranteed obligations.* Of a total United States guaranteed debt of $4,644 million at the end of 1937, only $726 million represents net cash sales, $3,873 million being net issues exchanged for other securities, mortgages and loans, and the remaining $45 million being net issues sold the U. S. Treasury (which, however, is included in the contingent debt of the United States). Exchange issues, as described above, together with retirements through like exchanges, have been excluded from Table IV–1. Data on the guaranteed debt are

TABLE IV–1

## NET CHANGE IN SECURITIES OUTSTANDING

*(millions of dollars)*

| | SALES FOR CASH (1) | RETIREMENTS (2) | NET CHANGE IN SECURITIES OUTSTANDING (3) |
|---|---|---|---|
| *1933* | | | |
| U. S. Gov. direct obligations | | | +2,006 |
| U. S. Gov. guaranteed obligations | | | |
| State and local | 520 | 874 | —354 |
| Corporate | 515 | 683 | —168 |
| Foreign | 70 | 180 | —110 |
| Total | | | +1,374 |
| *1934* | | | |
| U. S. Gov. direct obligations | | | +4,178 |
| U. S. Gov. guaranteed obligations | | | +511 |
| State and local | 939 | 1,396 | —457 |
| Corporate | 715 | 713 | +2 |
| Foreign | 10 | 120 | —110 |
| Total | | | +4,124 |
| *1935* | | | |
| U. S. Gov. direct obligations | | | +1,202 |
| U. S. Gov. guaranteed obligations | | | +245 |
| State and local | 1,232 | 1,193 | +39 |
| Corporate | 2,875 | 2,904 | —29 |
| Foreign | 60 | 200 | —140 |
| Total | | | +1,317 |
| *1936* | | | |
| U. S. Gov. direct obligations | | | +4,305 |
| U. S. Gov. guaranteed obligations | | | +33 |
| State and local | 1,121 | 1,140 | —19 |
| Corporate | 4,985 | 4,007 | +978 |
| Foreign | 160 | 290 | —130 |
| Total | | | +5,167 |
| *1937* | | | |
| U. S. Gov. direct obligations | | | +3,259 |
| U. S. Gov. guaranteed obligations | | | —63 |
| State and local | 908 | 908 | |
| Corporate | 2,600 | 2,582 | +18 |
| Foreign | 150 | 320 | —170 |
| Total | | | +3,044 |

based chiefly on statistics supplied by the Farm Credit Administration and the Home Owners' Loan Corporation and on Statements of the Public Debt.

c) *State and municipal bonds.* Data concerning debts of states and municipalities are available only for June 30 or thereabouts from the annual report of the Secretary of the Treasury. The figures used to represent these debts at calendar year-ends are interpolations of these data, after deduction of the holdings of such securities by state and local sinking funds.

d) *Domestic corporate and foreign securities.* Difference between the gross proceeds from cash sales of new securities and the amount spent by issuers to redeem securities. The computation of these two items is described more fully in the next two sections.

## 2 CASH SALES OF NEW DOMESTIC CORPORATE AND FOREIGN SECURITIES (TABLE IV–2)

Figures for new issues include only issues of one year maturity or over and have been built up as follows:

a) *Issues offered for cash of which notice has appeared in the chief financial newspapers or statistical services, or records of the*

TABLE IV–2

CASH SALES OF NEW DOMESTIC CORPORATE AND OF FOREIGN SECURITIES [1]

*(millions of dollars)*

| | | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|---|
| a | Cash offerings other than lines b to e | 380 | 540 | 2,680 | 4,750 | 2,400 |
| b | Investment company issues | 120 | 150 | 170 | 200 | 200 |
| c | Small offerings not recorded in financial press | 10 | 20 | 20 | 20 | 20 |
| d | Offerings of $100,000 or less and intrastate issues not included in line a | 10 | 10 | 10 | 10 | 10 |
| e | Oil and gas royalty interests | 20 | 20 | 20 | 30 | 30 |
| f | Total cash offerings (a+b+c+d+e) | 540 | 740 | 2,900 | 5,010 | 2,660 |
| g | Unsold amount of cash offerings | 25 | 25 | 25 | 25 | 60 |
| h | Cash sales of domestic corporate securities (f—g) | 515 | 715 | 2,875 | 4,985 | 2,600 |
| i | Cash offerings of foreign securities | 70 | 10 | 60 | 160 | 150 |
| j | Cash sales of new securities (h+i) | 585 | 725 | 2,935 | 5,145 | 2,750 |

[1] Lines a through h cover domestic securities only.

*Commission, whether registered or not and whether publicly offered or sold privately.* (A few private placings not so reported but known from other sources are also included.) This compilation is made by the staff of the Research and Statistics Section.

It has been assumed that all registered public utility issues, all private placings, and all other issues offered through underwriters were sold in full. For non-public utility issues offered for cash but not sold through underwriters [except issues registered on Form A–1, which have been taken account of under item (c)] a deduction of 25 per cent of the amount offered has been made to represent the proportion of the issues not actually sold. (To make these estimates it was necessary to classify new issues by method of offering. Since such a classification is not yet available before January 1936 it has been assumed for these preliminary estimates that the ratio of unsold to total offerings was the same for earlier years as from January 1936 to June 1937.)

b) *Investment company issues.* Taken from Table 2 of Chapter III, Part II, of the Securities and Exchange Commission's *Study of Investment Trusts and Investment Companies.* It is likely that only very small amounts of such securities have already been included under item 2 (a), thus constituting a minor item of duplication.

c) *Small registered issues for which no record of offering appeared in the press.* Sales estimated on the basis of follow-up reports on securities registered on Form A–1 under the Securities Act, collected by the Research and Statistics Section. See *Selected Statistics on Securities and on Exchange Markets* (Securities and Exchange Commission, August 1939), pp. 34–7.

d) *Issues of $100,000 and less, and intrastate issues not included in (a) above.* No comprehensive information is available but the statistics of interstate issues between $30,000 and $100,000 for which prospectuses were filed with the Securities and Exchange Commission indicate that the aggregate volume of small new issues actually sold is almost negligible.

e) *Oil and gas royalty interests.* Rough estimates based on tabulations of actual sales reported to the Securities and Exchange Commission on Form G–1 for part of the period.

f) *Total cash offerings of domestic securities.* Sum of items (a) to (e).

g) *Unsold amount of cash offerings.* Estimated as described under item (a) above.

h) *Cash sales of domestic corporate securities.* Item (f) minus item (g).

i) *Cash offerings of foreign securities.* Obtained from registration statements, financial publications, and the *Balance of International Payments of the United States.*

j) *Cash sales of new securities.* Item (h) plus item (i).

### 3 CASH RETIREMENTS OF DOMESTIC CORPORATE AND OF FOREIGN SECURITIES (TABLE IV–3)

a) *Domestic corporate bonds redeemed in cash at maturity.* The amounts disbursed by corporations for payment of matured

TABLE IV–3

CASH RETIREMENTS OF CORPORATE AND OF FOREIGN SECURITIES

*(millions of dollars)*

| | | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|---|
| a | Domestic corporate bonds redeemed at maturity | 381 | 344 | 313 | 493 | 371 |
| b | Domestic corporate bonds redeemed before maturity | 167 | 243 | 2,242 | 2,961 | 1,850 |
| c | Domestic corporate tenders for bonds and stocks | 35 | 35 | 35 | 35 | 35 |
| d | Domestic corporate retirements of preferred stock | 40 | 31 | 244 | 448 | 246 |
| e | Other repurchases [1] | 60 | 60 | 70 | 70 | 80 |
| f | Total domestic corporate retirements | 683 | 713 | 2,904 | 4,007 | 2,582 |
| g | Retirements of foreign securities | 180 | 120 | 200 | 290 | 320 |
| h | Total redemptions | 863 | 833 | 3,104 | 4,297 | 2,902 |

[1] Includes only repurchases by investment companies.

bonds were estimated from *Moody's Investors Service* and Standard Statistics' lists of maturing bonds. A check was made of all maturing issues of $1 million and over to determine the amounts actually paid off in cash at maturity, i.e., eliminating issues extended or defaulted. Issues of less than $1 million were estimated to have been redeemed in the same proportion as the larger issues.[58] For small railroad issues, which consisted largely of

[58] For all issues under $1 million an attempt was made to determine, by taking a few sample months, the percentage actually paid in cash, but the result was unsatisfactory because so little information on small issues of small companies could be obtained.

equipment trust certificates on which defaults have been very rare, a cash payment ratio was applied which was about 20 per cent higher than the ratio for the issues of $1 million and over.

Certain adjustments in the total monthly maturity figures were necessary in order to exclude issues floated outside the United States, as well as foreign dollar bonds. Moreover, corrections were made to strike out issues that had been called for redemption prior to maturity but were still carried in the maturity list. Deletions and additions were also made in several cases where issues were included or omitted from the lists by error, or otherwise. Adjustments were made only in the issues of $1 million and over, but the percentage of error in the remainder is probably not great, as maturities of $1 million and over comprise about 70 per cent of total maturities.

b) *Domestic corporate bonds redeemed before maturity.* Figures for bonds called for redemption prior to maturity are those compiled by the *New York Times* (also carried by the *Annalist*). From spot checks for several months we believe that this compilation is fairly accurate. Consequently we adjusted the *New York Times* total only to take care of the estimated premiums above par at which the calls were made. Sample studies showed an average call price for railroads of 105 per cent from 1933 to 1937; for industrials and miscellaneous issues, 102 per cent (except for 1936, when 103 per cent was estimated to be the average call price); while for public utility issues, the average price at which bonds were called appeared to be 102 per cent of par for 1933–35, 103 per cent for 1936, and 104 per cent for 1937.

Comparison of Standard Statistics' lists of bonds called for redemption with the individual issues reported by the *New York Times* shows that the two correspond very well for partial, entire, and sinking fund calls for domestic industrials, public utilities, and rails. (The test covers four or five months.)

The total individual issues posted in Standard Statistics nevertheless exceeded the *New York Times* computation of bonds called for redemption. The difference, therefore, must be due to the omission from the *New York Times* figures of some issues marked 'v.b.' (various bonds) and 'e.i.' (entire issue) or 'e.s.' (entire series) where definite information is difficult to get. Thus our figures probably underestimate actual retirements.

c) *Tenders for bonds and stocks.* A sampling of different months from 1934 through 1937 indicated that corporations allotted between $2 and $4 million per month for purchase of their bonds and stocks by tender, including tenders for sinking fund. A rough figure of $35 million per year was used to represent actual retirements by this method.

d) *Retirements of preferred stock.* Tabulated from the press and financial services. The figure obtained in this way is not inclusive, however, because the data on the exact number of shares called are insufficient. Some entire and many partial calls were consequently omitted. The retirements of whole issues that were omitted were mostly those by small companies, the changes in whose capitalization would probably not have affected the total materially. It is believed that partial calls omitted are likewise not very large. No definite information exists on which to estimate the degree of understatement.

e) *Other repurchases.* Includes only the repurchases of their own securities by investment companies as reported in the Securities and Exchange Commission's *Study of Investment Trusts and Investment Companies* (Part II, Ch. III). Other repurchases had to be omitted because of the impossibility of obtaining adequate data.

f) *Total retirements by domestic corporations.* This figure, the sum of items (a) to (e), falls short of actual total retirements by an amount that, though unknown, is believed to be small relative to retirements included in the statistics. However, the absolute amount of retirements and repurchases, which apparently escape the usual sources of information, seems to have been considerable, possibly between $500 million and $1 billion for 1933–37, most of which was apparently in corporate domestic bonds. If these figures, based on estimates by the Department of Commerce of securities outstanding (*Survey of Current Business*, January 1939) and certain unpublished tabulations of Schedule N of the corporation income tax returns for 1936, are correct, then the underestimates of retirements are in the order of 5 to 10 per cent. While a certain underestimation of retirements is fairly certain, the evidence is not yet definite enough to make possible adjustment for individual years. For this reason no

adjustment has been attempted in the estimates derived from the available sources detailed under items (a) to (e).

g) *Retirements of foreign securities by issuers.* Taken from *The Balance of International Payments of the United States* (Table IV–4).

TABLE IV–4

CHANGE IN FOREIGN SECURITY HOLDINGS

*(millions of dollars)*

| | | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|
| 1 | Foreign securities resold to foreigners | 565 | 510 | 425 | 595 | 666 |
| 2 | American securities sold to foreigners | 760 | 480 | 1,305 | 2,685 | 2,274 |
| 3 | Foreign securities purchased from foreigners | 685 | 405 | 475 | 540 | 602 |
| 4 | American securities repurchased from foreigners | 580 | 480 | 970 | 2,070 | 2,014 |
| 5 | Net (1+2—3—4) | +60 | +105 | +285 | +670 | +324 |
| 6 | Bond redemption and sinking fund payments to foreigners | 50 | 25 | 15 | 15 | 15 |
| 7 | Net, incl. retirements of American securities (5—6) | +10 | +80 | +270 | +655 | +309 |

h) *Total redemptions.* Item (f) plus item (g).

4 COMPUTATION OF CHANGE IN HOLDINGS OF DOMESTIC NON-INDIVIDUALS (TABLE IV–5)

This figure is built up from the reported security holdings of different types of 'institutional' holders.

a) *U. S. Treasury investment accounts.* Figures for the security holdings of these accounts at the end of calendar years since 1934 were obtained from special tables prepared by the Treasury Department.[59] For 1932 and 1933 data concerning accounts for which special United States securities are issued were taken from the daily statement of the U. S. Treasury. Estimates for other funds were derived by averaging the June figures, which appear in the annual reports of the Secretary of the Treasury. In the case of funds not reported in the annual reports, estimates were made by extrapolation.

b) *U. S. Government corporations and credit agencies.* For

[59] Since December 1937 all holdings of this type are reported in a monthly release on 'Securities held as Investments in Trust Funds and in Accounts of Certain Governmental Corporations and Agencies'.

TABLE IV–5

## CHANGE IN SECURITY HOLDINGS OF DOMESTIC NON-INDIVIDUALS

*(millions of dollars)*

| | | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|---|
| a | U. S. Treasury investment accounts | 658 | 810 | 1,242 | 1,639 | 1,801 | 3,567 |
| b | U. S. Government corporations and credit agencies | 131 | 364 | 1,299 | 1,448 | 1,494 | 1,580 |
| c | Federal Reserve banks | 1,440 | 1,685 | 1,903 | 1,858 | 1,832 | 1,907 |
| d | Operating commercial banks | 13,658 | 13,144 | 16,994 | 18,792 | 21,121 | 19,676 |
| e | Closed national banks | 137 | 115 | 84 | 19 | 5 | 0 1 |
| f | Mutual savings banks | 4,049 | 4,156 | 4,384 | 4,682 | 4,926 | 5,192 |
| g | Private banks | 310 | 326 | 348 | 442 | 452 | 359 |
| h | Legal reserve life insurance companies | 7,586 | 7,914 | 9,234 | 10,911 | 12,699 | 14,421 |
| i | Fraternal orders | 636 | 597 | 680 | 720 | 748 | 774 |
| j | Other insurance companies | | | | | | |
| | i) bonds | 1,729 | 1,688 | 1,747 | 1,837 | 1,983 | 2,078 |
| | ii) stocks | 0 1 | 0 | 0 | 50 | 100 | 100 |
| k | State and municipal trust and investment funds | 1,950 | 2,100 | 2,280 | 2,370 | 2,470 | 2,570 |
| l | Investment companies | 0 1 | 150 | 150 | 200 | 160 | 35 |
| m | Other corporations 2 | 2,733 | 2,840 | 2,543 | 2,126 | 2,040 | 2,040 3 |
| n | Building and loan associations 4 | 85 5 | 85 | 286 | 235 | 216 | 216 3 |
| o | Total | 35,102 | 35,974 | 43,174 | 47,329 | 52,047 | 54,515 |
| p | Change in unadj. holdings | | +872 | +7,200 | +4,155 | +4,718 | +2,468 |
| q | Adjustment for securities received in exchange for mortgages, loans, and other securities | | | | | | |
| r | Adjustment for profits and losses 6 | | —80 | —2,011 | —697 | —80 | |
| s | Adj. change in non-individual holdings (p+q+r) | | +372 | +193 | —82 | —335 | +128 |
| | | | +1,164 | +5,382 | +3,376 | +4,303 | +2,596 |

1 Arbitrary base figure.

2 Tax-exempt securities only.

3 Assumed no change from 1936.

4 From Table 14, *Debts and Recovery*. Figures represent 'investments', which include chiefly stock in Federal Home Loan Bonds and H. O. L. C. Bonds.

5 Assumed equal to 1933.

6 Losses to be added and profits to be subtracted.

1934–37 figures were obtained from the daily Treasury statement. Year-end figures for 1932 and 1933 were estimated by averaging June figures given in special tables from the Treasury Department. Since these agencies, as well as the Treasury's investment accounts, do not apparently hold any short term securities, no further adjustments are necessary.

c) *Federal Reserve banks.* From 1934 to 1937 holdings of United States long term securities are reported separately in the *Federal Reserve Bulletin.* For 1932 and 1933, however, all United States securities held by the Federal Reserve banks are reported without distinction as to type. For these two years bills and certificates of less than one year maturity were estimated on the basis of information obtained from the Federal Reserve Board regarding the distribution of the System's holdings. These holdings of bills and certificates were deducted from the total reported United States security holdings in order to obtain the desired figure on holdings of Treasury securities with a maturity of over one year.

d) *Operating commercial banks.* For 1934–37 the figures, taken from reports of the Federal Deposit Insurance Corporation, cover operating insured banks. Estimates for 1932 and 1933 are based on the annual reports of the Federal Reserve Board which show holdings of U. S. Government obligations and other securities separately. The ratio, for each of these two groups, of holdings of all commercial banks to holdings of member banks of the Federal Reserve System, as given for June 30, 1934 in the 'Call Reports of Insured Banks' of the Federal Deposit Insurance Corporation, was applied to the figures for holdings of member banks alone at the end of 1932 and 1933. Holdings of Treasury bills are deducted, since they are not included in the figures from which institutional holdings are subtracted. They are reported separately from 1934 on and were estimated for 1932 and 1933 by assuming that at the end of those years they constituted the same proportion of total United States security holdings of commercial banks as at the end of 1934. Holdings of stock in Federal Reserve banks are also deducted.

e) *Closed national banks.* Information is available only on the sales in the New York market of the securities for the account of suspended national banks. The figures, which were supplied by

the Comptroller of the Currency, are supposed to cover the sales of all securities by such banks except those of local issues. Since no basis exists for an estimate of the sales by suspended state banks (and the sales of local securities by national banks) they are of necessity omitted from Table IV–5. The figures for 'adjusted change in non-individual holdings' in the last line of Table IV–5 therefore slightly overstate the increase in non-individual holdings from 1933 through 1937 and correspondingly understate the increase (or overstate the decrease) in individual holdings as shown in line 6 of Table IV. The extent of this omission, however, is very small compared to total changes in non-individual and individual holdings.

f) *Mutual savings banks.* Figures used for the end of each year from 1932 to 1935 are averages of June 30 data, as reported by the Comptroller of the Currency. For 1936 and 1937 the report gives the figures as of December 31. No deduction was made for Treasury bills, but it is assumed that their amount is small.

g) *Private banks.* Estimates for holdings at the end of 1935 and of 1936 were derived by averaging the June 30 figures reported by the Comptroller of the Currency. From 1932 to 1934 the estimates were made on the basis of these figures and supplementary information taken from the statements of J. P. Morgan and Co. A special release by the Treasury Department gave the figure for 1937. No deduction is possible for Treasury bills held.

h) *Legal reserve life insurance companies.* Based on reports of the Association of Life Insurance Presidents, the figures from this source being divided by the ratio of total admitted assets of the companies included to total admitted assets of all life insurance companies. Bill holdings, which have to be deducted, are taken directly from Poor's *Insurance Company Holdings* by totaling figures for individual companies.

For U. S. Government guaranteed obligations, totals are derived from Poor's *Insurance Company Holdings* for those 45 companies included in the *Wall Street Journal* weekly statistics on life insurance companies' purchases. The totals for these companies, which are assumed to represent 90 per cent of total admitted assets of all life insurance companies, are accordingly increased 11 per cent.

i) *Fraternal orders.* The estimate of total securities held by

fraternal orders at the end of each year from 1932 to 1935 is based on the holdings of United States and Canadian societies doing business in New York, as shown in the *New York Insurance Reports, Volume IV*, and the ratio of the assets of these societies to total assets of all United States and Canadian fraternal orders doing business in the United States, as given by *Statistics Fraternal Societies*. Aggregate bond and stock holdings for societies in New York, as given in the *New York Insurance Reports*, are divided by the ratios thus determined, the results being used as estimates of holdings of all societies. No deduction is possible for holdings of Treasury bills, which are believed to be small. For 1936 and 1937 total bonds and stocks are assumed to bear the same ratios to all assets as they do in the estimates for 1935, namely, 67.0 per cent for domestic societies and 45.0 per cent for Canadian societies.

j) *Other insurance companies*. Based on totals for casualty, surety, reciprocal, Lloyds, fire, marine, and automobile insurance companies as given in annual volumes of the *Spectator*. Only combined totals are available in 1932–36 for U. S. Government direct and guaranteed and foreign obligations. Of these totals, 7 per cent (the approximate ratio for 1937) is assumed to consist of foreign securities and the remainder of U. S. Government direct and guaranteed obligations.

Changes in balance sheet figures for stocks are strongly influenced by write-ups and write-downs reflecting changes in market price. Comparison of the balance sheet figures with movements of stock prices suggests that in 1934 and 1937 there were no significant net purchases or sales. In 1935 and 1936 small net purchases, somewhat arbitrarily estimated at $50 million in each year, were indicated; no estimate was possible for 1933.

k) *State and municipal trust and investment funds*. The single available figure, referring only to tax exempt securities in June 1937, is published in the annual report of the Secretary of the Treasury, for the fiscal year 1937 (p. 468). This figure is approximately three times as great as the figure for 'city securities' plus 'other investments'[60] reported for cities with a population of

[60] This figure for 'other investments' includes an unknown amount of time deposits, according to the Bureau of the Census. Since the change in 'other investments' is not very great from year to year, the error involved in assuming that the item represents securities alone is probably not very important.

100,000 and over at the end of 1936 in *Financial Statistics of Cities*. In the absence of satisfactory data on which to base an estimate, it was necessary to assume that this ratio also applied in preceding years. Securities held in state and municipal sinking funds are not included in this item since they have been omitted in calculating the change in securities outstanding under item IV, 1 (c).

l) *Investment companies*. The figures for 1933–35 are based on the net purchase and sale balances of 133 management investment companies, accounting for about two-thirds of total assets of all such companies (see *Study of Investment Trusts and Investment Companies*, Part II, Ch. VIII). Estimates for 1936 and 1937 are based on similar data reported to the Securities and Exchange Commission by 23 companies which hold about 40 per cent of total assets of investment companies. See *Selected Statistics*, pp. 88–91.

m) *Other corporations*. For 1932–36 figures for tax-exempt securities were taken from the combined balance sheet of non-financial corporations submitting balance sheets with their income tax returns, published in *Statistics of Income*. The figure for 1937 is assumed to be the same as for 1936. (Changes in the holdings of financial corporations are taken care of in items (e) to (h), (j), and (l) above.)

Changes in the figures reported for other investments appear to reflect to a large extent write-ups and write-downs and other revaluation items. In the absence of data on actual purchases and sales and of any information on which to base a satisfactory estimate, other investments have been disregarded and only tax-exempt investments have been included in the calculations.

n) *Securities held by building and loan associations*. Since the total assets of these associations have already been included in computing the equity of individuals in building and loan associations, their holdings of securities must be deducted from individuals' holdings of securities in order to avoid double-counting. The figures for 1933–36 were taken from the Twentieth Century Fund study, *Debts and Recovery* (p. 303). The figures for 1932 and 1937 are assumed to be the same as those for 1933 and 1936, respectively.

o) *Total holdings of domestic non-individuals.* The sum of items (a) through (n) represents the actual or estimated balance sheet holdings, without correction to eliminate the effects of write-ups and write-downs and of realized profits or losses on the sale of securities of domestic non-individuals.

p) *Annual change in total holdings of domestic non-individuals (unadjusted).* Change in item (o).

q) *Securities received by institutions in exchange for mortgages, loans, and other securities.* These securities must be deducted from non-individuals' holdings, since they are not included in the figures for new issues of securities from which the changes in non-individuals' holdings are to be subtracted. The amounts of securities exchanged by institutions for mortgages or other securities were estimated on the basis of information supplied by the Home Owners' Loan Corporation and the Federal Farm Mortgage Credit Corporation.

r) *Profits and losses, write-ups and write-downs on securities.* Profits and write-ups are deducted from the change in unadjusted holdings, and losses and write-downs are added. The figure for commercial banks was estimated from reports for all member banks of the Federal Reserve System for 1933; for 1934–37 the figures were taken from the annual reports of the Federal Deposit Insurance Corporation for operating insured banks. The estimate for life insurance companies is based on the reports of five companies with 55 per cent of the assets of all United States legal reserve life insurance companies. No adjustment is possible for the holdings of other institutions. None is necessary, however, for items (j) and (l), where the estimates relate to net purchase or sale balances rather than changes in the value of holdings. For items (a), (b), (c), (k), and (m) profits and losses and write-ups and write-downs may be assumed to be small.

s) *Annual change in adjusted holdings of non-individuals.* This final figure is equal to item (p) plus items (q) and (r).

### 5 COMPUTATION OF CHANGE IN DOMESTIC INDIVIDUALS' BORROWINGS ON SECURITIES (TABLE IV–6)

For the purposes of this study only borrowing on securities by individuals or unincorporated businesses from banks or other incorporated lenders is taken into account. Borrowing by one

TABLE IV–6

CHANGE IN BORROWINGS ON SECURITIES BY DOMESTIC INDIVIDUALS

*(millions of dollars)*

| | | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|---|
| a | Commercial bank loans to brokers and dealers in securities | 614 | 1,032 | 1,068 | 1,268 | 1,417 | 971 |
| b | 'All other loans' by commercial banks to individuals on securities | 3,420 | 2,676 | 2,328 | 2,152 | 2,068 | 2,044 |
| c | Total individuals' borrowings on securities | 4,034 | 3,708 | 3,396 | 3,420 | 3,515 | 3,015 |
| d | Foreigners' debit balances with brokers | 60 | 100 | 94 | 90 | 103 | 66 |
| e | Total net domestic individuals' borrowings on securities (c—d) | 3,974 | 3,608 | 3,302 | 3,330 | 3,412 | 2,949 |
| f | Change | | —366 | —306 | +28 | +82 | —463 |

individual from another is omitted since it must cancel in the national total, the liability of the borrower being offset by the asset of the lender. Adjustments have to be made, however, for borrowing on securities by foreigners from domestic individuals.

Fairly satisfactory and comprehensive figures are available for the loans on securities made by banks to brokers and dealers in securities. Most of the borrowers may be assumed to be unincorporated. Considerably more serious difficulties are encountered in determining the borrowing on securities from banks by individuals. Some of these loans are made to domestic corporations and to foreigners but no definite information as to the proportion is available. For the purposes of this calculation, changes in borrowing on securities by domestic individuals and unincorporated businesses from corporations other than banks were assumed to be negligible. Table IV–6 shows the component figures, the details of which are discussed in the following paragraphs.

a) *Commercial bank loans to brokers and dealers in securities.* Figures for all insured banks are available for the end of 1934 and subsequent years from the annual reports of the Federal Deposit Insurance Corporation. An entirely satisfactory comparable estimate for 1932 and 1933 can be made on the basis of

the figures for all member banks reported annually by the Board of Governors of the Federal Reserve System. These figures run consistently about 3 per cent below those for operating insured commercial banks in the years when both are known. It has been assumed that, in the period studied, all the changes in this figure may be attributed to unincorporated brokers and dealers.

b) *'All other loans' by commercial banks to individuals on securities.* Based on 'all other loans on securities' by operating insured commercial banks from 1934 to 1937, as reported by the Federal Deposit Insurance Corporation. The figure for 1932 and 1933 was estimated from the statistics for member banks of the Federal Reserve System in a manner similar to the estimate in item (a), except that in this case the ratio of member to insured banks was only 90 per cent.

In the absence of any concrete indications it has been assumed, for the present purposes, that about two-thirds of such loans are attributable to borrowing by domestic individuals and unincorporated businesses.

c) *Total individuals' borrowings on securities.* Item (a) plus item (b).

d) *Foreigners' debit balances with brokers.* This figure, taken since 1934 from *Statistics of Capital Movements,* published by the Treasury Department, must be deducted from total individuals' borrowings on securities in order to obtain the net liabilities of domestic individuals on securities. Figures for 1932 and 1933 are estimated on the basis of total customers' debits with brokers.

e) *Total net domestic individuals' borrowings on securities.* Item (c) minus item (d).

## *V Change in Individuals' Equity in Nonfarm Dwellings (Table V)*

This series is built up by estimating the annual expenditure on construction, additions to, alterations, and repairs of one to four family nonfarm dwellings, deducting depreciation, and adjusting the remainder for changes in the mortgage indebtedness of individuals to institutions on account of such dwellings and for changes in institutional holdings of such dwellings.

TABLE V

CHANGE IN INDIVIDUALS' EQUITY IN NONFARM DWELLINGS

*(millions of dollars)*

| | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|
| 1 Net construction of one to four family nonfarm dwellings [1] | —1,169 | —1,105 | —732 | —235 | —135 |
| 2 Change in institutional holdings of one to four family nonfarm dwellings [2] | +363 | +426 | +314 | +145 | +165 |
| 3 Change in mortgages on one to four family nonfarm dwellings [3] | —1,227 | +211 | —191 | —345 | —101 |
| 4 Change in individuals' equity | —305 | —1,742 | —855 | —35 | —199 |

[1] From Table V–1. [2] From Table V–2. [3] From Table V–3.

The final figures were computed as follows:

1. *Net construction of one to four family nonfarm dwellings.* Derived from estimates of new construction, additions, alterations, repairs, and depreciation. For details see Section 1 and Table V–1, below.

2. *Change in institutional holdings of one to four family nonfarm dwellings.* Increases in institutional holdings must be deducted from net construction and decreases added thereto in order to find the net change in individuals' ownership. The figures are estimates based on data obtained from various sources, indicated in the footnotes to Table V–2.

3. *Change in mortgages on one to four family nonfarm dwellings held by institutions.* In order to compute the equity of individuals, increases in individuals' mortgage indebtedness to institutions must also be deducted from net construction and decreases must be added. The figures are estimates of the Federal Home Loan Bank Board. For details see footnotes to Table V–3.

4. *Change in individuals' equity in nonfarm dwellings.* Item 1 minus items 2 and 3.

## 1 COMPUTATION OF NET CONSTRUCTION OF ONE TO FOUR FAMILY NONFARM DWELLINGS (TABLE V–1)

a) *Cost of all new nonfarm residential construction.* The figures are those prepared by the Division of Construction and

Public Employment, Department of Labor, from statistics of building permits. They do not include hotels, clubhouses, dormitories, etc.

TABLE V–1

NET CONSTRUCTION OF ONE TO FOUR FAMILY NONFARM DWELLINGS

*(millions of dollars, except line b)*

| | | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|
| a | Cost of all new nonfarm residential construction | 193 | 199 | 557 | 1,132 | 1,163 |
| b | Percentage of line a composed of one to four family dwellings | 85 | 88 | 86 | 83 | 86 |
| c | Cost of new one to four family nonfarm dwellings | 164 | 175 | 479 | 940 | 1,000 |
| d | Additions to, alterations, and repairs of nonfarm dwellings | 92 | 126 | 187 | 204 | 224 |
| e | Assumed cost of additions to, alterations, and repairs of one to four family nonfarm dwellings | 69 | 95 | 140 | 153 | 168 |
| f | Annual depreciation on one to four family nonfarm dwellings [1] | 1,402 | 1,375 | 1,351 | 1,328 | 1,303 |
| g | Net construction of one to four family nonfarm dwellings (c+e—f) | —1,169 | —1,105 | —732 | —235 | —135 |

[1] CALCULATION OF DEPRECIATION *(millions of dollars)*

| | | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|
| 1 | Cost value, beginning of year | 70,000 | 68,598 | 67,223 | 65,872 | 64,544 |
| 2 | Additions to stock to be depreciated (50% of new construction) | 116 | 135 | 310 | 546 | 584 |
| 3 | Depreciation (2% of 1+2) | 1,402 | 1,375 | 1,351 | 1,328 | 1,303 |
| 4 | Value, end of year (1—3) | 68,598 | 67,223 | 65,872 | 64,544 | 63,241 |

b) *Percentage of item (a) consisting of one to four family nonfarm dwellings.* Same source as item (a).

c) *Cost of new one to four family nonfarm dwellings.* Product of items (a) and (b) divided by 100.

d) *Additions to, alterations, and repairs of nonfarm dwellings.* Same source as item (a). Also covers only housekeeping dwellings.

e) *Estimated additions to, alterations, and repairs of one to*

*four family nonfarm dwellings*. Assumed to be 75 per cent of item (d).

f) *Annual depreciation of one to four family nonfarm dwellings*. Estimated at 2 per cent of the cost of the dwellings (excluding land values). The depreciated cost value at the beginning of 1933 was estimated to be approximately $70 billion, equivalent to about $3,000 per nonfarm dwelling unit. For the detailed computation of this item see footnote to Table V–1.

g) *Net construction of one to four family nonfarm dwellings*. Item (c) plus item (e) minus item (f).

TABLE V–2

INSTITUTIONAL HOLDINGS OF ONE TO FOUR FAMILY NONFARM DWELLINGS

*(millions of dollars)*

| | | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|---|
| 1 | Commercial banks | 160 | 169 | 201 | 238 | 242 | 225 |
| 2 | Mutual savings banks | 120 | 190 | 270 | 330 | 360 | 400 |
| 3 | Life insurance companies | 134 | 196 | 256 | 302 | 305 | 305 |
| 4 | Building and loan associations | 589 | 746 | 930 | 1,030 | 1,030 | 930 |
| 5 | Mortgage and other companies | 175 | 240 | 310 | 375 | 390 | 400 |
| 6 | Home Owners' Loan Corporation | | | | 6 | 99 | 331 |
| 7 | Total | 1,178 | 1,541 | 1,967 | 2,281 | 2,426 | 2,591 |
| 8 | Change | | +363 | +426 | +314 | +145 | +165 |

*Line 1* For 1937, *Sixth Annual Report of Federal Home Loan Bank Board*, Exhibit I, p. 100. Figures for other years are estimated on the assumption that holdings of one to four family dwellings bore the same ratio to total urban real estate holdings as did loans on such dwellings to loans on all urban real estate at the end of each year. This ratio was based on Federal Home Loan Bank Board estimates of loans on one to four family dwellings and F.D.I.C. figures for total loans on urban real estate. It was applied to the figure for total urban real estate held as reported by the Federal Deposit Insurance Corporation or Federal Reserve Board.

*Line 2* Sources same as for line 1.

*Line 3* For 1932–34 derived in a way analogous to that described for line 1; for 1935–37, from *Federal Home Loan Bank Review*.

*Line 4* Assumed equal to 90 per cent of holdings of real estate owned, not including office buildings, as reported in *Building and Loan Annals* for 1932–37.

*Line 5* For 1937, estimate of the Federal Home Loan Bank Board. Figures for 1932–36 derived by assuming that holdings of one to four family dwellings by mortgage and other companies increased between the end of 1932 and the end of 1937 at the same rate as those for banks and life insurance companies taken together.

*Line 6* From annual reports of Home Owners' Loan Corporation.

TABLE V–3

MORTGAGES HELD BY INSTITUTIONS ON ONE TO FOUR FAMILY NONFARM DWELLINGS [1]

*(millions of dollars)*

| | | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|---|
| 1 | Commercial banks | 1,995 | 1,810 | 1,189 | 1,189 | 1,230 | 1,400 |
| 2 | Mutual savings banks | 3,375 | 3,200 | 3,000 | 2,850 | 2,750 | 2,700 |
| 3 | Life insurance companies | 1,835 | 1,715 | 1,535 | 1,351 | 1,305 | 1,330 |
| 4 | Saving and loan associations | 5,756 | 4,906 | 4,012 | 3,467 | 3,361 | 3,480 |
| 5 | Home Owners' Loan Corporation | | 103 | 2,209 | 2,897 | 2,763 | 2,398 |
| 6 | Total | 12,961 | 11,734 | 11,945 | 11,754 | 11,409 | 11,308 |
| 7 | Change | | −1,227 | +211 | −191 | −345 | −101 |

SOURCE: *Sixth Annual Report of Federal Home Loan Bank Board*, p. 16, for 1934–37 figures; 1932 and 1933 figures supplied by the Board.

[1] Does not include loans held by title and mortgage companies, construction companies, trust departments of commercial banks, and miscellaneous lenders.

## *VI Change in Individuals' Equity in Automobiles (Table VI)*

It has been assumed that all passenger cars are owned and operated by individuals or unincorporated businesses and that all trucks are owned and operated by corporate business or government units. While neither assumption is strictly correct the errors are probably not very large and tend to cancel one another to a certain extent.

TABLE VI

INDIVIDUALS' EQUITY IN AUTOMOBILES

*(millions of dollars)*

| | | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|
| 1 | Retail sales | 975 | 1,341 | 1,992 | 2,539 | 2,706 |
| 2 | Depreciation | 1,561 | 1,678 | 1,699 | 1,842 | 1,930 |
| 3 | Net | −586 | −337 | +293 | +697 | +776 |
| 4 | Change in instalment debt | +90 | +100 | +60 | +366 | +84 |
| 5 | Change in individuals' equity | −676 | −437 | +233 | +331 | +692 |

The final figure is computed as follows:

1. *Retail sales of passenger cars.* Estimates (since published with minor changes) made by George Terborgh. The general

method of computation used by him is to estimate the average wholesale value of passenger cars in the United States on the basis of published figures for factory sales. The resulting average wholesale value is increased by an estimated average mark-up to obtain an estimate for average retail value per car. This last figure is then multiplied by the reported number of new passenger cars sold at retail.

2. *Depreciation.* Based on unpublished figures by Terborgh, who has estimated the depreciation on automobiles in 1929 dollars. His estimate was converted into current dollars on the basis of his price figures. The basic estimate uses depreciation rates based on a life expectancy increasing from 7.95 to 8.25 years.

3. *Net change in the value of individuals' automobiles.* Item 1 less item 2.

4. *Change in instalment debt.* The figure for 1937 is based on Department of Commerce figures for outstanding retail automobile receivables of 224 identical organizations at the end of 1936 and of 1937. No satisfactory year-end figures are available before 1936. The net change for 1936 has been approximated, however, by using the figure for the change during the year ended January 31, 1937. The figures for 1933–35 are rough estimates based on the percentage of new cars sold on the instalment plan, the average amount per instalment note, and the estimated instalment debt outstanding as a percentage of new business.

5. *Change in individuals' equity.* Item 3 less item 4.

## *VII Change in Individuals' Equity in Durable Consumers' Goods other than Houses and Automobiles (Table VII)*

The principle used to compute this figure is identical with that used for automobiles. The figures for depreciation and for changes in instalment debt are even less satisfactory than the corresponding figures in the preceding series.

Change in owners' equity is estimated as follows:

1. *Retail sales of household goods.* Estimated by Terborgh.

2. *Estimated depreciation.* Based on Terborgh's estimate of depreciation on household goods in 1929 prices. Conversion to current prices is based on the relation between Terborgh's fig-

ures for expenditures in terms of 1929 and current prices. This figure should be regarded merely as an informed guess. Solomon Fabricant, who has made the most thorough published study of depreciation, did not try to estimate depreciation on furniture or other durable consumers' goods because of the unsatisfactory nature of the data.[61]

3. *Net change in household goods.* Item 1 minus item 2.

4. *Construction by non-profit institutions.* Estimated by Terborgh.

TABLE VII

INDIVIDUALS' EQUITY IN DURABLE HOUSEHOLD GOODS OTHER THAN HOUSES AND AUTOMOBILES

*(millions of dollars)*

| | | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|
| 1 | Retail sales of household goods | 2,470 | 3,050 | 3,550 | 4,500 | 5,000 |
| 2 | Estimated depreciation | 3,227 | 3,341 | 3,411 | 3,532 | 3,766 |
| 3 | Net change in household goods (1—2) | —757 | —291 | +139 | +968 | +1,234 |
| 4 | Construction by non-profit institutions | 96 | 95 | 114 | 131 | 190 |
| 5 | Estimated depreciation on structures of non-profit institutions | 228 | 238 | 236 | 248 | 280 |
| 6 | Net change in structures of non-profit institutions (4—5) | —132 | —143 | —122 | —114 | —90 |
| 7 | Total net change (3+6) | —889 | —434 | +17 | +854 | +1,144 |
| 8 | Change in instalment debt | +100 | +100 | +300 | +300 | +100 |
| 9 | Change in individuals' equity (7—8) | —989 | —534 | —283 | +554 | +1,044 |

5. *Estimated depreciation on structures of non-profit institutions.* The estimate in current prices is based on Terborgh's estimate of depreciation in 1929 prices.

6. *Net change.* Item 4 minus item 5.

7. *Total net change.* Item 3 plus item 6.

8. *Change in instalment debt.* A very rough estimate based on the fragmentary information available.

9. *Change in individuals' equity.* Item 7 minus item 8.

## *VIII Business Saving of Farmers (Table VIII)*

Part of the saving of farmers, namely, changes in their bank deposits, cash and equity in insurance contracts, as well as their

[61] Cf. *Capital Consumption and Adjustment*, p. 139.

net absorption of securities and their purchases of household machinery, has necessarily already been included with saving of individuals in these forms. A segregation is not feasible with the material at our disposal. The saving of farmers which must be separately calculated therefore includes only the net investment in new machinery, farm buildings, and livestock, adjusted for changes in mortgage debt and in such types of short term debt as do not enter into the computations of 'individual saving'.[62] Changes in crop inventories, which should logically be included, had to be omitted because the data are inadequate. This omission is partly offset by the omission of the change in liabilities of farmers on account of crop loans.

To obtain farmers' net business saving a figure representing the surrender of farm real estate by farmers to others must also be deducted. In computing farmers' indebtedness and farm real estate held by non-farmers, we have used the farm indebtedness and real estate held by institutions. Since the holdings of individual non-farmers are probably small this procedure introduces no appreciable error into the final figure for business saving of

TABLE VIII

BUSINESS SAVING OF FARMERS

*(millions of dollars)*

| | | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|---|
| 1 | Expenditure on farm machinery | 241 | 375 | 593 | 730 | 900 |
| 2 | Expenditure on farm buildings | 175 | 200 | 350 | 450 | 500 |
| 3 | Total (1+2) | 416 | 575 | 943 | 1,180 | 1,400 |
| 4 | Depreciation | 972 | 1,004 | 993 | 1,021 | 1,026 |
| 5 | Net (3—4) | —556 | —429 | —50 | +159 | +374 |
| 6 | Investment in livestock | +40 | —239 | —17 | —78 | —38 |
| 7 | Net change in farmers' mortgage indebtedness to institutions [1] | —311 | —128 | —208 | —142 | —114 |
| 8 | Net change in farmers' short term indebtedness to institutions [2] | —136 | —302 | +202 | —136 | +273 |
| 9 | Change in institutional holdings of farm real estate [3] | +186 | +144 | +77 | +79 | —32 |
| 10 | Business saving of farmers (5+6—7—8—9) | —255 | —382 | —138 | +280 | +209 |

[1] From Table VIII–1. [2] From Table VIII–2. [3] From Table VIII–3.

[62] Farmers' indebtedness to farm machinery companies is not included.

farmers. In any case no error is introduced into the figure for total national saving because farm real estate and farm debt held by individual non-farmers is not included in individual saving in the form of houses and securities.

The final estimate is derived from the following data:

1. *Expenditure on farm machinery.* Figures for 1933–35 taken from *Income from Farm Production, 1935,* published by the Department of Agriculture. Figures for 1936 and 1937 estimated by the Agricultural Adjustment Administration. This whole series is now being revised by the Bureau of Agricultural Economics but the revised data are not yet available.

2. *Expenditure on farm buildings.* The 1933 figure was obtained from Simon Kuznets' *Commodity Flow and Capital Formation, Volume I,* and is the sum of the figures given there for farm dwellings and farm construction and repair other than dwellings. The figures for 1934–37 are very rough estimates based on available building data.

3. *Total expenditure on farm machinery and farm buildings.* The sum of items 1 and 2.

4. *Depreciation on farm machinery and farm buildings.* Figures for 1933–35 taken from Fabricant's *Capital Consumption and Adjustment* (pp. 114 and 145). He has used the estimates of the Bureau of Agricultural Economics and stepped them up slightly to correct for underreporting of farm machinery (p. 118). The figures for 1936 and 1937 were estimated on the basis of the rates used in preceding years and the additions to the stock of machinery and buildings given in items 1 and 2.

5. *Net value of change in farm machinery and farm buildings.* Item 3 less item 4.

6. *Investment in livestock.* Estimated by multiplying the change in the number of livestock on farms by an estimated farm value, represented by the mean of the farm values at the beginning and the end of each year. The final figure is the sum of separate computations for each kind of livestock. The basic figures come from *Agricultural Statistics, 1937* and *United States Livestock Reports.*

7. *Change in farmers' mortgage indebtedness to institutions.* Based chiefly on the institutional holdings of farm mortgages at the end of each year as reported in the *Agricultural Finance Re-*

*view*, May 1939, published by the U. S. Department of Agriculture. Holdings of open state and national banks at the end of 1932 and 1933 were estimated by multiplying the figure for all deposit banks given in D. C. Horton, *Long Term Debts of the United States* (U. S. Bureau of Foreign and Domestic Commerce, 1937) by the ratio between holdings of open state and national banks and those of all deposit banks at later dates.

The increase in farmers' liabilities to institutions in 1934 and 1935 was more than offset by Federal Farm Mortgage bonds which the institutions received in exchange for mortgages. A figure representing the amount of these bonds issued in exchange for mortgages must, therefore, be deducted from the change in mortgage indebtedness to institutions in obtaining the true change in indebtedness. The amount of bonds so received was obtained from the Farm Credit Administration. The derivation of item 7 is shown in detail in Table VIII–1.

TABLE VIII–1

FARM MORTGAGES HELD BY INSTITUTIONS

*(millions of dollars)*

| | | END OF YEAR | | | | | |
|---|---|---|---|---|---|---|---|
| | | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
| 1 | Federal land banks and land bank commissioners | 1,106 | 1,274 | 2,502 | 2,854 | 2,889 | 2,836 |
| 2 | Joint stock land banks | 459 | 392 | 256 | 176 | 133 | 104 |
| 3 | Life insurance companies | 1,869 | 1,661 | 1,259 | 1,055 | 936 | 895 |
| 4 | Open state and national banks | 840 | 640 | 499 | 488 | 488 | 501 |
| 5 | Farm Security Administration | | | | | | 4 |
| 6 | Three state credit agencies | 81 | 80 | 62 | 48 | 33 | 25 |
| 7 | Total | 4,358 | 4,047 | 4,578 | 4,621 | 4,479 | 4,365 |
| 8 | Change | | −311 | +531 | +43 | −142 | −114 |
| 9 | Assets received in exchange for mortgages [1] | | | 659 | 251 | | |
| 10 | Change in mortgage indebtedness of farmers to institutions, less assets received in exchange | | −311 | −128 | −208 | −142 | −114 |

[1] These figures represent Federal Farm Mortgage bonds.

8. *Net change in farmers' short term indebtedness to institutions.* This figure, the computation of which is shown in Table VIII–2, is taken chiefly from the *Agricultural Finance Review,* May 1939 (p. 83). The figure for Farm Security Administration loans outstanding at the end of 1935 and 1936 is estimated from data furnished by that organization. Short term indebtedness of farmers to commercial banks at the end of 1932, 1933, and 1935 is estimated, the estimates for the first two years being very rough.

TABLE VIII–2

SHORT TERM LOANS TO FARMERS

*(millions of dollars)*

| | | END OF YEAR | | | | | |
|---|---|---|---|---|---|---|---|
| | | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
| 1 | Commercial banks | 1,400 | 1,100 | 808 | 726 | 594 | 788 |
| 2 | Federal intermediate credit banks | 83 | 61 | 56 | 47 | 41 | 40 |
| 3 | Production credit associations | | 0 | 61 | 94 | 105 | 138 |
| 4 | Regional agricultural credit corporations | 24 | 145 | 87 | 43 | 26 | 16 |
| 5 | Emergency crop loans | 31 | 91 | 79 | 107 | 104 | 115 |
| 6 | Farm Security Administration | | | | 8 | 80 | 162 |
| 7 | Drought relief loans | | | 32 | 66 | 60 | 57 |
| 8 | Commodity Credit Corporation | | 65 | 37 | 271 | 216 | 183 |
| 9 | Total | 1,598 | 1,462 | 1,160 | 1,362 | 1,226 | 1,499 |
| 10 | Change | | −136 | −302 | +202 | −136 | +273 |

9. *Change in institutional holdings of farm real estate.* This item, shown in Table VIII–3, was taken from the *Agricultural Finance Review,* November 1938 (p. 63). Figures for farm real estate holdings of commercial banks for 1932–35 were estimated by assuming that the farm real estate held by active insured commercial banks was about one-fifth of the non-bank real estate held by all member banks—the ratio known to have prevailed on June 30 and December 31, 1936. While this estimate may be subject to a considerable percentage error, any mistake in the estimate of the change in holdings is not large enough to affect the total carried over to the final table.

10. *Business saving of farmers.* Sum of items 5 and 6, less the sum of items 7, 8, and 9.

TABLE VIII–3

FARM REAL ESTATE HELD BY INSTITUTIONS

*(millions of dollars)*

| | END OF YEAR | | | | | |
|---|---|---|---|---|---|---|
| | *1932* | *1933* | *1934* | *1935* | *1936* | *1937* |
| 1 Federal land banks and farm mortgage corporations | 85 | 97 | 97 | 120 | 135 | 132 |
| 2 Life insurance companies | 317 | 465 | 601 | 646 | 713 | 705 |
| 3 Joint stock land banks | 72 | 86 | 82 | 78 | 73 | 62 |
| 4 Three state credit agencies | 47 | 56 | 60 | 62 | 68 | 72 |
| 5 Active insured commercial banks | 54 | 55 | 63 | 74 | 70 | 56 |
| 6 Total | 573 | 759 | 903 | 980 | 1,059 | 1,027 |
| 7 Change | | +186 | +144 | +77 | +79 | −32 |

## *IX Corporate Saving (Table IX)*

The basic figures for the estimate of corporate saving are taken from income tax returns as published in *Statistics of Income*. These figures differ considerably from corporate saving or dissaving as it would be if calculated to conform to the basic con-

TABLE IX

CORPORATE SAVING

*(millions of dollars)*

| | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|
| 1 Compiled net profits less total tax | −1,353 | 2,379 | 4,688 | 6,580 | |
| 2 Cash dividends paid | 3,128 | 4,890 | 5,941 | 7,379 | |
| 3 Net saving, unadj. (1—2) | −4,481 | −2,511 | −1,253 | −799 | |
| 4 Capital losses | 1,686 | 297 | 239 | 142 | |
| 5 Capital gains | 262 | 242 | 470 | 581 | |
| 6 Net saving, adj. (3+4—5) | −3,057 | −2,456 | −1,484 | −1,238 | −900[1] |
| 7 Depreciation and depletion | 3,742 | 3,674 | 3,701 | 3,723 | 3,750 |
| 8 Gross saving, adj. (6+7) | +685 | +1,218 | +2,217 | +2,485 | +2,850 |

[1] Estimated from Department of Commerce figures which run slightly higher than those computed from *Statistics of Income*.

cepts of current income and saving used in this study. It would be necessary to consider adjustment of the present figures for (1) capital gains and losses, (2) inventory profits and losses, (3) the write-down or write-off of bad debts, (4) other write-ups and

write-downs reflecting purely book transactions. In addition it would be desirable to correct the figures for the underreporting of net income and the consequent understatement of corporate saving (or the overstatement of corporate dissaving) which apparently results from the use of income tax figures.

An adjustment for capital gains and losses can be made simply by subtracting capital gains from and adding capital losses to the unadjusted figures, since these gains and losses are reported in *Statistics of Income*.

No satisfactory data exist for adjusting corporate profits and saving for the revaluation element in inventory changes. In any case doubt exists as to just how such an adjustment should be made.

Debts written off or written down may be regarded either as elements of cost or as revaluations. We have preferred to regard them as elements of cost for which no adjustment need be made. Even if they were regarded as revaluations, however, it would be difficult to adjust for them because only a gross figure is reported in *Statistics of Income* while the amount for which an adjustment should be made is only the net bad debts, i.e., debts written off on which no recoveries were subsequently realized. No information is at present available that would make possible adjustments for other revaluations or for underreporting of net income.

In order to calculate gross corporate saving (net corporate saving plus depreciation and depletion charges), it is also necessary to determine the total allowance for depreciation and depletion. Figures for corporations from 1933 to 1936 were taken from *Statistics of Income;* that for 1937 was estimated.

## *X Saving of State and Local Governments (Table X)*

Statistics of the saving of state and local governments are among the poorest used, and, because of the magnitudes of the sums involved, the estimate of saving by these government units is probably subject to as great an absolute error as any other component of the total.

Up to 1932 the Bureau of the Census published financial data for states and for cities with a population of 30,000 and over. In

TABLE X

SAVING OF STATE AND LOCAL GOVERNMENTS

*(billions of dollars)*

| | | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|---|
| 1 | State revenues | 1.8 | 2.0 | 2.2 | 2.6 | 2.8 |
| 2 | Local revenues | 5.4 | 5.3 | 5.4 | 5.5 | 5.7 |
| 3 | Total revenues (1+2) | 7.2 | 7.3 | 7.6 | 8.1 | 8.5 |
| 4 | State expenditures | 2.0 | 2.1 | 2.2 | 2.4 | 2.4 |
| 5 | Local expenditures | 5.2 | 5.4 | 5.5 | 5.8 | 5.8 |
| 6 | Total expenditures (4+5) | 7.2 | 7.5 | 7.7 | 8.2 | 8.2 |
| 7 | Capital outlays | 1.0 | 1.2 | 1.2 | 1.7 | 1.6 |
| 8 | Current expenditures (6—7) | 6.2 | 6.3 | 6.5 | 6.5 | 6.6 |
| 9 | Gross saving[1] (3—8) | 1.0 | 1.0 | 1.1 | 1.6 | 1.9 |
| 10 | Depreciation | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| 11 | Net saving (9—10) | 0.5 | 0.5 | 0.6 | 1.1 | 1.4 |

[1] Gross saving for cities having populations of 100,000 and over in 1933–36 was $310, 493, 654, and 556 million.

1933 the compilation of state statistics was discontinued and statistics were collected only for cities with populations of 100,000 and over. Although the collection and publication of state statistics is being resumed, beginning with data for 1937, we are without any reliable information on the financial activities of a major sector of the economy during the important period covered by this study.

In the absence of Census data for states, localities, and cities with populations of less than 100,000 since 1932, it was necessary to consult figures presented in the National Industrial Conference Board's series, *The Cost of Government in the United States,* the Twentieth Century Fund's study, *Facing the Tax Problem,* an unpublished study conducted by the Senate's Special Committee to Investigate Unemployment and Relief,[63] and

[63] The Senate Committee's study, which covers 24 state governments, presumably follows Census definitions and classifications, but there is no indication as to how many of the data are the result of questionnaires and how many of original classification. Although the Census includes subventions and grants in receipts, the Senate Committee's study apparently excludes for the most part federal grants

the Social Security Board's tabulation of receipts entitled *Fiscal Capacity of States*.[64]

The saving of state and local governments has been estimated from the following data:

1. *State revenues.* The estimated total of revenue receipts in Table X is the sum of total state and local tax collections as estimated by the National Industrial Conference Board and state and local non-tax revenues as estimated by the Twentieth Century Fund (without description of bases and details). The figure may be too small, since it is probably based on the relation of such revenues to taxes existing in 1932, which ratio has very probably increased. Total revenues exclude subventions and grants.

2. *Local revenues.* For derivation, see item 1.

3. *State and local revenues.* Item 1 plus item 2.

4. *State expenditures.* Expenditure figures for 1933–35 taken from *Facing the Tax Problem*. The estimates for state expenditures presented there for 1933, 1934, and 1935 are based on actual fiscal statements published in such official state reports as could be obtained and on letters from state officials. By this method data for 1933 and 1934 were obtained for 45 states (covering 94 per cent of all state expenditures in 1932) and in 1935 for 39 states (covering 85 per cent of all state expenditures). These figures were extended by the authors to cover all states on the assumption that the trend in the missing states was the same as that in the states covered.[65] The figures for 1936 and 1937 are rough estimates based on data for the preceding years and on current

for relief, while including other grants. Again, there may be differences in the treatment of receipts from public service enterprises (although this cannot be checked). The Census gives the aggregate receipts of such enterprises, while the Senate Committee's study in its instructions asks only for the profits transferred to the general departments.

[64] The Social Security Board tabulation of revenues differs from the Census tabulation in several respects. Federal aid is not included, although separate totals for it are given. Agency revenues such as pension assessments are not included, although they are included in the Census tabulation. Tax collections made by states as agents for local government units, however, are excluded from the Census totals for state revenues but are included in the Social Security Board totals. Certain other receipts such as donations and exceptional returns from sale of property are included in Census totals but omitted from Social Security Board totals.

[65] *Facing the Tax Problem*, p. 97.

press releases by the Bureau of the Census covering certain states for 1937.

5. *Local expenditures.* Information concerning local expenditures is in even worse form than data for states and on local receipts. Figures for 1933, 1934, and 1935 were estimated by the authors of *Facing the Tax Problem* on the basis of local receipts and bond issues and retirements (p. 538). Their estimate for 1936 was used for both 1936 and 1937. For 1933–35 the figures for local expenditures are from $250 to $400 million lower than those of the National Industrial Conference Board. The state figures differ by less than $100 million.[66]

6. *State and local expenditures.* Item 4 plus item 5.

7. *Capital outlays.* In order to reduce the figure for total expenditures to one for current expenditures it was necessary to estimate state and local capital outlays. The only continuous source for such estimates is the annual Census report for cities with populations of 100,000 and over. Material for states is available for only one year, in *Financial Statistics of State and Local Governments, 1932.* On the basis of these sources a rough estimate was made by computing a relative for the ratio of capital outlays to expenditures for cities over 100,000 and comparing this with the ratio for states in 1932 to find the ratio for states in subsequent years. These ratios were then applied to the estimated state expenditures. A comparison of the very rough estimates so obtained with the cost of construction by state and local governments, as estimated by the Department of Commerce ('Recent Developments in Construction Activity', *Survey of Current Business,* August 1939, Table 5) shows the following picture (in millions of dollars):[67]

| | *1933* | *1934* | *1935* | *1936* | *1937* |
|---|---|---|---|---|---|
| Computed capital outlays | 906 | 849 | 1,147 | 1,390 | |
| Estimated state and local construction | 904 | 1,091 | 1,001 | 1,653 | 1,490 |

Comparison of Department of Commerce construction figures with those compiled by Peter Stone of the Works Progress Ad-

[66] Because of the crudity of the local data and of the estimates for capital outlays the figures are shown only to the nearest hundred million dollars.

[67] Neither figure includes work-relief construction.

ministration in *Construction Expenditures and Employment* suggests that any error involved in the former is probably on the side of understatement. They therefore may be taken as a minimum for capital outlays. Since there are capital outlays other than construction the estimates for capital outlays in Table X were derived by slightly increasing the cost of state and local construction as estimated by the Department of Commerce.

8. *Current expenditures.* Item 6 minus item 7.

9. *Gross saving.* Equal to the difference between current revenue (item 3) and current expenditures (item 8).

10. *Depreciation.*[68] Based on:

a) Fabricant's estimates of the value of all government property (exclusive of roads and sewers) as of the end of 1932 ($20,269 million for state and local governments and $4,365 million for the federal government; see *Capital Consumption and Adjustment*, pp. 126 and 137).

b) Depreciable capital outlays during 1933–37. Such outlays are equal, for state and local governments, to those shown in item 7 minus outlays for roads and sewers constructed by non-relief labor ($709, $875, $690, $991, and $953 million for the years 1933 to 1937, respectively; see 'Recent Developments in Construction Activity', Table 4).

c) An annual rate of depreciation of 2½ per cent (Fabricant, *op. cit.*, p. 136). Following Fabricant's procedure, we assume that depreciation on roads and sewers is covered by maintenance expenditures which are not treated as capital outlays in our calculations. Such expenditures amounted to $441 million in 1933; $498 million in 1934; $518 million in 1935; $561 million in 1936; and $560 million in 1937, according to Department of Commerce estimates. This assumption may involve an understatement of depreciation, especially since capital expenditures have been increasing over the period studied. However, capital outlays on roads and sewers by W.P.A., C.W.A., and C.C.C. labor

[68] The calculation of depreciation on both federal and state and local property was revised as a result of criticism and suggestions received from Mr. George O. May. In the original estimates some inconsistencies existed between the additions to government property on which depreciation was computed and the annual estimated additions to physical property for 1933–37. These inconsistencies have now been eliminated so far as is possible with the rather unsatisfactory primary material.

are depreciated because it is not feasible to segregate them from other work relief capital outlays.

The calculation follows the procedure used in calculating the depreciation on one to four family nonfarm dwellings shown in Table V–1.

11. *Net saving.* Item 9 minus item 10.

## *XI Saving of the Federal Government (Table XI)*

The federal government does not keep an inclusive balance sheet; it lists only liabilities and cash assets. Its saving can there-

TABLE XI

SAVING OF THE FEDERAL GOVERNMENT

*(millions of dollars)*

| | | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|---|
| 1 | Total receipts | 2,526 | 3,492 | 3,857 | 4,372 | 6,312 |
| 2 | Capital receipts | 31 | 8 | 10 | 26 | 37 |
| 3 | Seignorage | 1 | 54 | 31 | 46 | 40 |
| 4 | Current receipts (1—2—3) | 2,494 | 3,430 | 3,816 | 4,300 | 6,235 |
| 5 | Total expenditures | 5,106 | 8,028 | 7,613 | 8,651 | 8,373 |
| 6 | Public works [1] | 513 | 799 | 745 | 1,082 | 907 |
| 7 | Loans | 1,130 | 402 | —77 | —540 | —8 |
| 8 | Subscriptions to capital stock and paid-in surplus | 374 | 586 | 115 | 39 | 52 |
| 9 | Debt retirements | 37 | 472 | 769 | 118 | 92 |
| 10 | Capital outlay of WPA, CWA, and CCC | 134 | 408 | 309 | 970 | 758 |
| 11 | Total deductions (6+7+8+9+10) | 2,188 | 2,667 | 1,861 | 1,669 | 1,801 |
| 12 | Current expenditures (5—11) | 2,918 | 5,361 | 5,752 | 6,982 | 6,572 |
| 13 | Gross saving (4—12) | —424 | —1,931 | —1,936 | —2,682 | —337 |
| 14 | Saving under 'Trust Accounts, Increment on Gold, etc.' | 50 | 50 | 47 | 14 | 14 |
| 15 | Total gross saving (13+14) | —374 | —1,881 | —1,889 | —2,668 | —323 |
| 16 | Depreciation | 120 | 130 | 145 | 165 | 195 |
| 17 | Net saving (15—16) | 494 | 2,011 | 2,034 | 2,833 | 518 |

[1] Includes grants to public bodies for public works, as follows (in millions of dollars): 9, 35, 124, 269, and 197.

fore be computed only from statistics of its expenditures and receipts. The difficulties that arise in computing saving are due almost entirely to the problem of classifying expenditures. Treasury statistics are kept on a cash basis; capital and current expenditures are not shown separately, and must be estimated from the classifications now being used. In such an attempt several difficulties are encountered. In the first place, the classification that seems most satisfactory, namely, that shown for the first time in Table 7 of the annual report of the Secretary of the Treasury for the year ending June 30. 1937, is available only on a fiscal year basis. Monthly statistics may be found in the special mid-month daily Treasury statement, but the classifications used there are not exactly the same as those used in Table 7 of the Secretary's annual report. For example, the item 'public works' as it appears in the daily Treasury statements is much more inclusive than the figure that appears in the annual report under the same heading. The second difficulty with the Treasury statement is that, although it makes possible computation on a calendar year basis, there have been many changes in classification since 1933, so that it is almost impossible to be absolutely certain of consistency in allocating expenditures between current and capital items. In view of the apparent superiority of the classifications in Table 7 of the Secretary's annual report, this table was used as a basis for the computations.

'Grants to public bodies, including administration', are included in capital outlays of the federal government. The expenditure of these funds by the states and localities is classified as capital outlay but our estimate of current receipts by the states and localities does not include them. Their inclusion in capital expenditures by the federal government therefore does not result in any overstatement of saving.

The final estimates are derived as follows:

1. *Total receipts.* From annual reports and daily statements of the Treasury.

2. *Capital receipts.* Includes proceeds from the sale of foreign securities, other proceeds of investments, and sales of government property. Data from annual reports and daily statements of the Treasury.

3. *Seignorage.* From annual reports and daily statements of the Treasury.

4. *Current receipts.* Item 1 minus items 2 and 3.

5. *Total expenditures.* From annual reports and daily statements of the Treasury.

6. *Expenditures on public works.* Corresponds to the figures shown on a fiscal year basis in Table 7 of the annual report of the Secretary of the Treasury. Experimentation with individual items in the daily Treasury statement revealed the composition of the public works in Table 7 (except for 'other public works') and thus made it possible to prepare figures on a calendar year basis, in accordance with Table 7 definitions. The item 'other public works' in Table 7 was apportioned for calendar years more or less arbitrarily since we did not know its composition.

7. *Loans.* Taken from annual reports and daily statements of the Treasury.

8. *Subscriptions to capital stock and paid-in surplus of government corporations and credit agencies.* Taken directly from the expenditures in the mid-month Treasury statements after being checked against the figures in Table 7 of the annual report.

9. *Debt retirement.* From annual reports and daily statements of the Treasury.

10. *Capital outlays of W.P.A., C.W.A., and C.C.C.* Some of the work done on these projects has taken a form that should be regarded as capital expenditure, such as construction of roads and bridges, but which is not classified as 'public works' under Table 7. It is impossible for us, with the information now available, to apportion these W.P.A., C.W.A., and C.C.C. expenditures accurately. Forty per cent of these expenditures have been regarded as capital outlays. The resulting estimate is lower, for the period as a whole, than the figures presented in the President's budget message of January 5, 1939.

11. *Total deductions.* Sum of items 6 through 10.

12. *Current expenditures.* Item 5 minus item 11.

13. *Gross saving.* Item 4 (current receipts) minus item 12 (current expenditures).

14. *Saving of trust funds.* Transfers to trust accounts and trust funds have been regarded as current cost of the federal government. Thus, expenditures accruing as saving to the benefici-

aries of the various accounts by the resulting increase in their equity have already been included in Table 1 under the heading 'Individual Saving in Liquid Form—Insurance and Pension Reserves' (see also Table III). Item 14 therefore includes only the increase in such minor trust accounts as are not included in Table 1.

15. *Total gross saving.* Sum of items 13 and 14.

16. *Depreciation.* See item X, 10.

17. *Net saving.* Item 15 (total gross saving) minus item 16 (depreciation).

Several items are omitted from this computation. Changes in supplies and inventories held by federal agencies are disregarded except so far as they appear in the insignificant item 'sales of government property'. In the War and immediate post-War years, this part of the government's assets changed considerably. It may be assumed, however, that no serious error is involved in neglecting this item during the years with which this study is concerned.

## *Discussion*

### I GERHARD COLM

I should like to raise a minor question in connection with Dr. Goldsmith's extremely careful and valuable estimates. Dr. Goldsmith interprets the increase in the social security funds of the federal government as individual saving (Sec. IV, 1; Ap. Table III). The fact that individual saving appears as the main positive contributor to the national net saving in recent years (Table 1) is partly due to this interpretation. Social security reserves do not fit naturally the usual classification into individual, business, and government saving. It seems to me that there are two possible methods of treating such reserves.

On the one hand, social insurance can be treated by analogy with private insurance. This is the procedure followed by Dr. Goldsmith. According to this analogy, the claims of individuals eligible to social security payments appear as individual saving. If the government holds an actuarially adequate reserve against these individual claims there is neither government saving nor dissaving. If the government plans to finance a part of later social security disbursements by later tax revenue this liability ought to be counted as negative saving. If, e.g., the old age insurance scheme should be shifted from the reserve system to the pay-as-you-go system, then individuals would still acquire the same claims, and thereby would show individual saving. Consequently, the government should be charged with negative saving of a corresponding amount. If this system is followed there seems no justification for including individual saving only to the amount accumulated in the government reserve; rather, the present value of all claims acquired should be counted as individual saving. The excess of this total sum of individual saving over reserves accumulated by the government should be posted as an item of negative saving. If this method were used I should prefer

to distinguish voluntary and compulsory saving and to regard the acquisition of social security claims as compulsory saving.

There is, however, another possible interpretation: old age insurance can be interpreted by analogy with old age assistance schemes. Individuals do not acquire legal claims on old age assistance. The introduction of old age assistance would thus not lead to individual saving and not necessitate the posting of corresponding negative saving by the government. Unemployment relief furnishes another example of the same sort. Were this analogy followed the claims acquired under the Social Security Act would not be regarded as individual saving and the corresponding liability would not be treated as negative government saving; rather, the accumulation of reserve funds would be treated as positive government saving.

It is not entirely arbitrary which interpretation should be chosen. We are interested in an interpretation that disturbs as little as possible the comparability of the estimates for the period before the enactment of the social security legislation and for the period after its enactment. If it were true that social security actually displaced chiefly private insurance and other private individual saving, it would be preferable to follow Dr. Goldsmith's method. I believe, however, that it is much more the function of social security to displace on a higher level relief and assistance schemes. If this is so, then it would be more appropriate to disregard the acquisition of individual claims and to treat the accumulation of funds as government saving.

## II M. A. COPELAND

Dr. Goldsmith's treatment of saving is an important step forward in a field that has hitherto proved somewhat elusive. He is careful to state that his approach to the problem runs in terms of consolidated balance sheets and consolidated income accounts. He comes to the conclusion that saving may be measured as the sum of (a) the net increase in direct investments and net equities held by individuals (not counting capital gains), (b) additions to corporate surpluses, (c) additions to what may be called the residual equities of governments.[1]

[1] He does not directly mention under (c) an item for churches and other non-profit institutions which corresponds to 'additions to the residual equities of governments'.

A memorandum recently prepared by the Committee of Statistical Experts of the League of Nations on *Statistics relating to Capital Formation* arrives at a substantially identical conception of saving and this, despite the fact that the idea of consolidated financial statements is certainly not explicit in the memorandum, and despite what seems a marked Robertsonian influence. This Robertsonian influence manifests itself in a suggestion that there is a time lag (and possibly a causal relationship) between saving so measured and replacement expenditures on the one hand and money outlay for the acquisition of new capital goods (investment) on the other. The memorandum explicitly states that saving plus replacement expenditures may not be equal to investment for short periods. In *Studies in Income and Wealth, Volume Two*. Professor Haberler, also following Professor Robertson, argues that for short periods saving and investment will not, in general, be equal. On the other hand, Dr. Goldsmith takes the position (which since Keynes' adoption of it has come to be called 'Keynesian') that I (net investment) equals S (saving). Dr. Warburton also appears to hold that estimates of investment should equal estimates of saving apart from differences in the bases of valuation, errors, omissions, and allowances for replacement and for international transactions. He has given an excellent statement of these sources of difference between estimates of saving and investment.[2]

I think it is probably true that those who take the position that investment equals saving (subject to the Warburton qualifications), have made the empirical significance of their conceptions of saving and investment clearer than have those in the Robertsonian tradition. Thus in *Volume Two*, I suggested that the various items that comprise 'investment' are increases in what an accountant would call the tangible assets on the consolidated balance sheet of the community and that the various items that comprise saving are increases in what an accountant would call the equities in these assets on the consolidated social balance sheet.[3] Professor Haberler explicitly denies that the above meaning is the meaning usually attached to the two terms,[4] but he offers

[2] *Volume One*, p. 102.
[3] *Volume Two*, p. 167.
[4] *Ibid.*, p. 186.

no example of an item that he or any other economist would regard as either saving or investment but that does not conform to my statement.

I propose to offer here an outline balance sheet set-up to illustrate the problem of measuring wealth, saving, and investment. This set-up agrees with Dr. Goldsmith and the League of Nations memorandum in the conceptions of saving and investment. It shows investment as an increase in assets, and saving as an increase in equities, as I suggested in *Volume Two* and as would be expected from Dr. Goldsmith's statement. I submit that it is difficult to understand how the authors of the League of Nations memorandum could ever have arrived at so nearly the same conception unless we assume that the idea of a consolidated financial statement of the community was somehow implicit in their thinking.[5]

Various assumptions will be made for simplicity in presenting the balance sheet set-up which follows. It is assumed. first, that we are dealing with an isolated economy. Second, we shall deal only with broad classes of asset and equity items: for many purposes, finer breakdowns might be desirable. These the reader can readily substitute in the balance sheet set-up. Third. it is assumed that all businesses are either (i) incorporated or (ii) conducted by individuals who do not separate their business from their personal accounts. Four types of entities are distinguished: (a) business corporations, (b) governments and other non-profit institutions. (c) individuals, (d) banks (including those government activities involved in the issuing of currency). Further differentiation among types of entities would complicate the argument but not affect its result for the present purpose. Finally, we shall assume that the balance sheet of each entity is first arranged in the appropriate form outlined below and that the various items on the balance sheets of all entities of each class are then

[5] It might be argued that investment is a simple and natural concept representing merely the increase in wealth, so that no implication of consolidated financial statements is involved. But the notion of wealth itself, as Professor Irving Fisher clearly pointed out in *Capital and Income* in 1906, is dependent on the consolidated statement idea.

In this connection, it might be noted that the statement by Dr. Goldsmith in an earlier draft of his manuscript, that only tangible assets will appear on the community's consolidated balance sheet, is not strictly true. See below where an item 'special privileges' appears, and Sec. II, 1 of Dr. Goldsmith's paper.

totaled to give us four total balance sheets which can be combined into a consolidated balance sheet for the economy as a whole.

## ISOLATED ECONOMY

### *A. Business Corporations*

1. Tangible assets (less valuation reserves)
2. Special privileges (patents, trademarks, etc.)
3. Cash and bank deposits
4. Net of adjustment items (n.e.c.)
9. Total corporate wealth

11. Due to others
12. Stock (capital and surplus)
13. Subtotal
Less (5) Due from others
And less (6) Stock in other corporations and banks
19. Net total corporate equities

### *B. Governments and Non-Profit Institutions*

1. Tangible assets
2. Cash and bank deposits

9. Total government and institutional wealth

11. Due to others
Less (3) Due from others
And less (4) Stock in business corporations and banks
Subtotal
12. Residual equities
19. Net total government and institutional equities

### *C. Individuals*

1. Due from others
2. Stock in business corporations and banks
3. Cash and bank deposits
Less (11) Due to others
4. Subtotal (net investment in other parties' affairs)
5. Special privileges
6. Tangible assets
9. Total

12. Net worth of individuals

19. Total

### *D. Banks (including currency issuing agencies)*

1. Monetary gold and silver stock
2. Other tangible assets
3. Due from others

9. Total

11. Total currency and deposit liabilities (less till money and interbank deposits)
12. Due to others
13. Stock (capital, surplus and undivided profits)
19. Total

NOTES: 'Due to others' includes: (a) policy reserves for insurance corporations, (b) accrued charges payable, (c) deferred credits to income for payments received in advance, (d) bonds less bond discount unamortized, etc. 'Due from others' includes

the corresponding items on the creditors' books. 'Reserve for bad debts' is to be deducted from 'receivables'.

'Discrepancy in liability valuations' is defined as total due to others ($A_{11}+B_{11}+C_{11}+D_{12}$) minus total due from others ($A_5+B_3+C_1+D_3$). This discrepancy may be a negative quantity.

'Discrepancy in stock valuations' is defined as total stock outstanding ($A_{12}+D_{13}$), less net of adjustment items (n.e.c.) ($A_4$) and less total stock held by all parties ($A_6+B_4+C_2$). This discrepancy may be a negative quantity. It is assumed that $A_4$ is chiefly 'deferred promotion and organization expense' and may be treated for convenience as if it were a kind of stock discount, so that $A_{12}-A_4$ in some sense equals the net book value of the proprietorship equity of corporations.

*E. Consolidated Balance Sheet of the Economy*

1. Monetary gold and silver stock ($D_1$)
2. Other tangible assets ($A_1+B_1+C_6+D_2$)
3. Special privileges ($A_2+C_5$)

9. Total wealth

11. Residual equities of governments and non-profit institutions ($B_{12}$)
12. Net worth of individuals ($C_{12}$)
13. Discrepancy in liability valuations
14. Discrepancy in stock valuations

19. Total 'ultimate' equities

We may assume that $E_3$ is small and that increments, apart from capital revaluations, may be neglected. $E_{13}$ is almost certainly small enough to be neglected.

'Net new investment' may be defined as the net increase in $E_1 + E_2$, before any capital revaluations.

'Net saving' may be defined as the net increase in $E_{11} + E_{12} + E_{14}$, before capital revaluations. The increase in $E_{14}$ may be approximated by 'net additions to surpluses of business corporations and banks'; so that saving equals 'individual saving' plus 'government saving' plus additions to surpluses of business corporations and banks.

It will be noted that these items correspond respectively to items (3) and (1) under Part II on page 11 of the League of Nations memorandum. This seems to substantiate the view that the consolidated balance sheet approach is implicit in the League of Nations memorandum.

The balance sheet approach has an important corollary for the view [6] that currency and bank deposits account for differences in timing of movements of the items 'net saving' and 'net investment'. Since currency and bank deposits cancel out and do not appear on the consolidated balance sheet, it would seem that they cannot explain differences in movements of $E_1 + E_2$ on the one

[6] See League of Nations memorandum, pp. 8 and 16.

hand and E11 + E12 + E14 on the other. Moreover, the balance sheet approach casts grave doubt upon the existence of such a difference in timing, when the items are defined as on pages 11 ff. of the League of Nations memorandum. Indeed it provides a clear-cut way of defining I and S, according to which the equality between them is valid whatever the length of the time interval to which the measurements apply.

The balance sheet approach has one further important advantage. It provides several equations which make possible substitution of one group of items for another in making measurements. Since statistical data for several items that would help in measurements of saving are not available, this possibility of shifting from one set of items to another is particularly important.

I suggest that this balance sheet set-up might well replace the diagram on page 9 of the League of Nations memorandum. What is there referred to as Cross-section 2 would appear in this balance sheet set-up as an analysis of changes in some of the items that cancel out in the process of consolidation. Such an analysis is, of course, highly useful in revealing the processes of capital formation.

## III E. L. DULLES

In commenting upon Dr. Goldsmith's paper, Dr. Colm questioned the classification of funds accumulated under the old-age insurance program as saving of individuals and suggested that these funds be grouped with government saving. The accounting procedure employed by Dr. Goldsmith is valid, and there is no question of double-counting (or under-counting) the old-age reserve funds in the total of national saving. The specific classification of these funds as individual saving, however, is open to question. There are many economic, as well as legal, aspects involved in the classification of these funds and no method of treating them is completely adequate. A more significant approach seems to be to classify the funds deposited in the reserve account as government saving. Several reasons for this conclusion may be indicated briefly.

First of all, the individual contributor to the old-age insurance program has no legal equity in the reserve account; that is, he

does not have to his credit an earmarked portion of the account, he cannot claim refunds of total contributions, nor can he borrow against accumulated funds. What the contributor actually has is a claim on the federal government for a benefit to be received at a future date and this benefit is subject to certain eligibility qualifications determined by social insurance principles which restrict payments to certain groups of contributors. Moreover, the lump-sum payment provision under the present act is even now being revised and the money-back principle replaced by current insurance protection.

Second, the reserve mechanism set up for old-age insurance does not necessarily reflect completely either amounts of contributions or accumulating benefit rights and it seems desirable to make the volume of individual savings independent of the financial policy of a particular government program. Legally, the claims to benefits are not dependent upon the financial structure of old-age insurance and benefits will be paid irrespective of the type of financial policy followed. If a reserve fund is not built up and 'saved' the government may have a larger burden to finance in the future because of the failure to make prior provision for a completely self-financed system. It is unthinkable, however, that the individual's claim to benefits would not be honored.

Still another consideration suggests that the reserve be classified as government saving. Although the deductions from consuming power or spending, resulting from contributions, gives some basis for counting them as saving by individuals, this is no more true of contributions for old-age insurance on a year-to-year basis than it is for tax payments generally. Furthermore, once contributions are paid, control of the accumulated funds is in the hands of the government, and the government directs the use of the funds into saving or consumption channels.

## IV A. G. HART

Dr. Goldsmith's paper, so far as I am aware, is the first attempt to use for the analysis of saving the rich supply of new data that have been built up in the last few years. In consequence both of this better statistical foundation and of the extremely workman-

like procedure he has followed, Dr. Goldsmith's estimates for 1933–37 impress me as much more secure than any of the estimates for pre-depression years which make up the existing statistical literature on saving. Numerous details are open to revision—along lines I shall suggest in a moment—but I am confident that the general outlines of Dr. Goldsmith's results will prove unassailable.

One basic statistical limitation should be emphasized at the outset. As Dr. Goldsmith notes, the paucity of income and expenditure data for the upper income groups makes it necessary to estimate the saving of individuals by a method of balance-sheet comparison. But balance-sheet data also are unavailable, so far as direct data from individuals go. Their place is supplied by over-all figures obtained from the accounts of credit institutions, etc., supplemented by data on durable consumers' goods. For purposes of using global saving estimates as a rough check on investment estimates, or of determining the types of assets into which saving of individuals flow, this is not a fatal defect. But it leaves us helpless before fascinating puzzles such as the differences in saving habits of different income groups in different phases of the cycle. Dr. Goldsmith's list of needed improvements in the statistical material (IV, 3) should include sample income, expenditure, and balance-sheet data for individuals, by income groups, extending into the upper brackets.

Several rather important statistical details seem to me to call for adjustment, or at least exploration. In particular:

1. Estimates of the saving of local governments (Ap. Table X) seem to correspond roughly to the rise in their cash balances plus the shrinkage in their bonded debt, that is, to the shift toward creditorship in their visible debt position. Allowance should also be made, however, for the important invisible receivable item of accrued taxes, which doubtless fell appreciably in 1933–37 as delinquency was reduced. Some of the saving attributed to local governments should properly be ascribed to these taxpayers. As a partial offset, unpaid bills, salaries, etc., must have been reduced.

2. Estimates of bank deposits of individuals seem to me slightly out of line owing to an understatement of corporate balances (Ap. Table I and point (7) in Sec. I of the Appendix).

The figures used for corporations are from corporation balance sheets. Checks in the mails between corporations have been deducted by senders, but not added to balances of prospective recipients; reciprocally, receivables are overreported by the same amount. For a method of adjustment see Currie and Krost's memorandum on the ownership of bank deposits and my *Debts and Recovery,* Table 9, note c (p. 297). Since it is only *differences* in these errors from year to year that affect Dr. Goldsmith's estimates, however, the net effect is probably very slight.

3. The treatment of deposits in closed banks (Ap. Table I–2) involves a valuation problem which seems to have been evaded. Presumably valuation at face value is excessive, as the fact the banks were closed implies losses. I should suggest valuation at 75 per cent of face value, for reasons indicated in *Debts and Recovery,* Table 6, notes h and j (p. 293). As to the proportion to be ascribed to individuals, the recently published study of failed banks by the F.D.I.C. may suggest revision.

4. The estimate of security holdings of non-individuals (Ap. Table IV–5) makes no allowance for shifts of corporate holdings outside the investment trust field, except for tax-exempts. I suspect that an appreciable amount of inter-corporate holdings may have been handed over to individuals during these years, though I can cite no direct evidence except a fall in figures for railroad bonds held by other railroads.

5. The net spread to catch changes in the debt position of 'individuals' (which, it must be remembered, includes unincorporated business, etc.) seems to me too wide-meshed. It allows only for debts secured by stock exchange collateral, real estate, automobiles, and other durable consumers' goods. But what of other individual short term debt? Business debts of unincorporated business to corporations and banks, unsecured bank loans of individuals, book credit of individuals with incorporated merchants, and 'personal loans' are important classes of debt which slip through the net. The only easy procedure I can suggest is a very audacious and risky residual method devised by Eugene Adams of the National City Bank. For 1933–35 this gives a cumulative shrinkage of individual short term debt of $6.2 billion (see *Debts and Recovery,* Table 25, pp. 321–2), whereas

Dr. Goldsmith's estimate shows a growth of $700 million in instalment debt and a shrinkage of $644 million in security loans. It is possible, then, that some sizeable fish have escaped the net, though my residual estimate must be regarded as a statistical *tour de force* rather than a genuine measurement. The indicated remedy is an attempt to locate and measure the missing debt items. Incidentally, if such a search confirms my estimate, the gap between Dr. Goldsmith's savings estimates and Dr. Kuznets' figures for investment will be appreciably narrowed.

From the standpoint of the analyst interested in business fluctuations, Dr. Goldsmith's estimates illumine two very critical points. One is the astounding extent to which the private individual during the recovery period insisted on putting his saving into an improvement of his creditor position. The whole individual saving seems to have taken the form of bank deposits and insurance cash values; or if my finding on short term debts is accepted, the form of bank deposits, insurance cash values, and reduced short term debt. As Colm and Lehmann have pointed out in their *American Tax Policy* [1] and I in *Debts and Recovery*, this indicates a crucial 'qualitative' defect of the capital market, and may go far to explain the partial and incomplete nature of the recovery.[2]

The second salient fact is the extreme cyclical variability of total saving, much greater than that of individual saving. This should have been apparent from the instability of business saving. Plainly, individuals who are stockholders will not in general feel impelled to save more because their corporations have fallen on evil days and are paying dividends out of surplus, or because their corporations have failed to plow in any earnings. Probably many students of business cycles have long been conscious of this fact, which is plain enough once observed, but for me at least the evidence of a wide gulf between individual and total saving has proved most illuminating.

[1] Gerhard Colm and Fritz Lehmann, *Economic Consequences of Recent American Tax Policy*, Supplement 1 to *Social Research* (1938).

[2] Incidentally, there seem to be signs that this shift toward creditorship has been chiefly in the upper income groups, indicating a significant relative shift of position among classes; see *Debts and Recovery*, pp. 121–6.

## V WALTER SALANT

As a result of the great emphasis recent economic thought has placed upon the phenomena of saving and investment, statistical estimates of national saving such as those presented by Dr. Goldsmith attract a greater interest than ever before. They are being used not merely to measure how much income is devoted to capital formation but also to throw light on the movements and level of income itself. It is therefore timely to examine the statistics of saving to see whether they are appropriate to these new uses. In order to do so we must recall the meaning of saving and analyze more exactly just what there is about the process that makes it important in determining the flow of income.

Saving has been considered important in determining the flow of income because it has been regarded as primarily a negative process: a failure on the part of the saver to spend on consumption goods. If the saver does not spend his income on current output of capital goods, or if others do not purchase capital goods in an amount equal to his saving, the flow of income will be reduced. This version of the process, though strictly correct, can apparently beget unnecessary complications. So far as total income is concerned is there much use in distinguishing between expenditures on different kinds of current output? Income is earned in the production of goods and services whether they are capital goods or consumers' goods, durable or perishable.

### 1 THE DISTINCTION BETWEEN INVESTMENT AND CONSUMPTION EXPENDITURE

The reason for differentiating investment from consumption expenditure was and is still a good one, but it is necessary to remind ourselves what it is. So far as the theory of income and employment is concerned, it lies in the supposition that the motives to spend are different in the purchase of consumption goods and capital goods.

Consumers' goods yield direct utilities; capital goods are ordinarily thought of as desired for a money return, so that the

demand for them is supposed to reflect a nice estimate of expected costs and returns. Durable capital goods are supposed to become more or less attractive with changes in long term interest rates. We have been accustomed to think of consumption goods, on the other hand, as perishable and their purchases therefore as virtually unaffected by changes in the rate of interest. Thus, movements of interest rates will not cause changes in the one type of expenditure to be offset by opposite changes in the other.

There is another way in which investment and consumption expenditure are supposed to be significantly different. It is usually assumed that consumers' goods are purchased out of the current income of the purchaser, while capital goods are not ordinarily purchased out of current income or even out of funds acquired in the past, but are externally financed. Thus the saving and the purchase of capital goods are performed by different economic agents. It is thought that this fact makes it necessary to distinguish consumption from investment expenditure in analyzing changes in income. Because the saver is one agent and the purchaser of capital goods, a different one, it is thought that their expenditures are less likely to fluctuate in offsetting directions than if they were the same agent, since there is no efficient and automatic mechanism to produce the desired relation.

A study of actual capital expenditures and actual saving, however, leads one to wonder whether we may not be overdoing the distinction between investment and consumption expenditure and raising some unnecessary problems. The importance of durable consumer goods and public expenditures in our economy raises the question of classification. Are automobiles and radios to be considered consumption of investment goods? How much of the federal government's expenditures on work relief is to be considered capital expenditures? These and many similar problems must necessarily arise in connection with all estimates of saving and investment because the definition of the thing being measured is partly a matter of taste. Yet so far as the analysis of income is concerned, they are simply red herrings, having only a verbal significance. Obviously the real nature of the process by which income is generated does not depend upon definition.

A survey of expenditures ordinarily called 'capital' shows that a large fraction does not belong unambiguously in the investment

pigeonhole. Public construction, which amounted to 11 per cent of all expenditure on durable goods in 1919–37, is clearly investment expenditure according to any sensible definition, yet it has neither of the characteristics that justify the distinction for the purposes of monetary analysis. It is not undertaken for profit. Nor are rates of interest and other problems incidental to private external financing major considerations, except in the case of local government capital expenditures financed by borrowing.[1]

Consumers' expenditures on passenger automobiles and durable household commodities constituted 37 per cent of total expenditure on durable commodities from 1919 to 1937. Except, perhaps, for the fraction purchased for commercial purposes the demand for these items does not reflect any fine calculation of utilities. The terms of credit, it is true, are important, since commodities of this type are so frequently sold on instalment. But it is the down payment that is of primary importance, i.e., the amount that will be lent, not the rate charged for it. Purchases of these commodities, furthermore, depend greatly on current income and the individual's prospects for the immediate future.

The capital formation of business is composed of the profit-making durable goods par excellence. It might be expected that expenditure on these goods would exhibit in full measure the characteristics associated with 'investment'. Yet in the fields of mining and manufacturing the facts seem to suggest that the most important determinants of a firm's capital expenditure are the level and direction of change of its current output. The rate of interest does not seem especially important, particularly for expenditures financed with a firm's own funds.[2] Expenditures financed in this way constitute the major part of capital formation by mining and manufacturing enterprises.

Only railroad and public utility capital expenditures exhibit the supposed characteristics of 'investment' in appreciable degree. Here we have the most durable capital equipment and the smallest proportion of self-financing. Yet even in these fields it

[1] It should be remembered that much public construction is not financed by borrowing at all.

[2] Although in pure theory interest rates should be as important in the disposition of undistributed earnings and previously acquired liquid funds as they are in determining borrowing, there seems little doubt that most firms do not calculate as closely when they can finance themselves.

is not certain whether capital expenditures are responsive to interest rates or whether their behavior in general differs appreciably from that of current expenditures.

Nor is there a clear-cut distinction between investment and consumption expenditures in their independence of or dependence on the level of income. The idea that investment demand (the 'marginal efficiency of capital') is independent of income is usually greatly exaggerated. We might class automobiles, furniture, radios, etc. as consumption goods and thus increase the accuracy of this idea to some degree.[3] But the dependence of investment expenditures, even excluding those for durable consumers' goods, on the incomes of those who make them is still sufficiently great to make this a weaker ground for the distinction than has usually been supposed.

These problems of classifying expenditures are inevitable problems of definition in measuring saving and investment and are relevant to measurements of the composition of output or use of income. But the preceding comments suggest that they are not directly relevant at all in analyzing the level of total expenditure, income, and employment.

Some changes in saving and investment clearly should be disregarded when the statistics are being used in connection with such analysis: for example, shifts of expenditure between capital and consumption goods, such as might occur if people began to cut down their vacation expenditures in order to build homes.[4] On the other hand, mere shifts in the disposition to save in particular forms do have direct effects on income even though they do not result in any shift of the disposition to save *in toto*. For example, a decision simply to 'put money in the bank' instead of buying a house would not affect the disposition to

[3] If we include these goods in consumption expenditure it may be that the marginal propensity to consume exceeds unity for a certain range. An increase in income may induce people to increase their purchases of automobiles and radios by a greater amount, giving them the courage to borrow to finance the difference.

[4] An illustration from actual events is afforded by the change in the federal government's expenditures from relief to public works. Such a shift produces an increase in saving and investment but has no direct effect on income. In Keynesian language, it is a fall in the propensity to consume which is exactly offset by increased investment.

save *in toto* but it would affect income.[5] This is the sort of change that would be unnoticed by anyone who uses the ordinary statistics of total saving (although it would appear clearly in those of investment). It is the components of saving, as analyzed in the paper presented by Dr. Goldsmith, that are important in analysis.

I do not mention these difficulties of definition because they present real difficulties in the analysis of income and its changes. On the contrary, my purpose is to point out that they do not and that the appearance of difficulty where none exists suggests that the distinction between investment and consumption in the process of income-creation is perhaps overemphasized. This distinction is a simplification that is useful to us in learning to understand the process, but economists who have a firm grasp of the theory of income and employment should be able to lean less heavily on this distinction and proceed to the business in hand—the specific types of expenditure, who makes them, and what determines their amount.

## 2 THE DATA RELEVANT TO THE ANALYSIS OF INCOME

The conclusion that over-all saving statistics do not tell us precisely what we need to know for an analysis of the determinants of income would be accepted, I believe, by all who use the saving-investment analysis. The justification for using such statistics lies in the assumption that they are at any rate not *far* from what we really want to know. This is an hypothesis we can now test in a rough sort of way.[6] Before elaborating on this statement, however, let us define what we want to know in the light of the foregoing observations.

Apparently what is relevant to the analysis of income is not the disposition of income as between current expenses (some of which, by the way, are merely book charges) and all other uses, but its disposition between actual expenditure on goods and services and all other uses. In other words, we want to know for the separate areas of the economy the behavior of the gap between income and income-creating disbursements *of all sorts* as income

[5] Another example from the federal government is the cutting down of public works expenditures in the fiscal year 1938 without increasing other expenditures.
[6] We could test it more accurately if we had a consolidated analysis of the uses of funds by corporations.

changes, not merely the gap between current income and *consumption* outlays.

Corresponding to the excess of income over income-creating disbursements in some economic areas there must be elsewhere in the economy a deficiency. The two discrepancies must be equal in the economy as a whole, just as saving and investment are equal. A reduction of expenditures on newly produced goods, whether capital or consumption goods, at one point in the economy will increase a positive discrepancy (or decrease a negative discrepancy) between income and income-creating disbursements at this point. But by reducing incomes it will increase the negative discrepancy (or decrease the positive discrepancy) elsewhere.

This formulation may be applied by subtracting from the saving figures the direct investment of savers and adding such current expenses as are merely bookkeeping charges. The remainder represents the increase in net claims (including money) held by the sectors of the economy under consideration.

On the other side of the picture, we may obtain the excess of income-creating disbursements over income by subtracting from the capital expenditures for each sector of the economy its saving and such current expenses as are merely bookkeeping charges. This remainder is the amount of income-creating disbursements financed by net sale of claims (including money).

This procedure is similar to the source and use of funds analysis except that it omits the funds raised by selling claims used to buy claims. For example, if the increased federal debt were exactly equal to the purchase of preferred stock (assuming the latter to be merely a 'capital-bolstering' expenditure) no discrepancy would arise.

In applying this formulation statistically it would, of course, be impossible to distinguish for any unit the purchase of goods actually produced during the period from the purchase of second hand goods, which creates no income. This presents no substantial difficulties for the economy as a whole, however, and even if it did we could surmount the difficulty by including in outlays the expenditure on all producible goods whether new or old, and including in income the receipts from the sale of all such goods, whether currently produced or not.

The analogy of this sort of measurement to that of saving and investment should not be pressed too far. It should be pointed out above all that its sole use would be in its application to particular sectors of the economy. Indeed, for a closed economy the sum of the discrepancies must be zero, since the increase in net claim liabilities (represented by the excess of income-creating disbursements over income) must be equal to the increased net holdings of claims (represented by the excess of incomes over income-creating disbursements).[7]

The procedure suggested could be of great value in studying the flow of income. The methods used in deriving the estimates presented by Dr. Goldsmith constitute the groundwork for such an analysis. By examining the propensity to increase net assets in non-producible forms we can get an idea of the amount of outside financing and sale of owned claims that is necessary to obtain given levels of income. By eliminating direct investment by savers this procedure is more appropriately pointed toward the problem of the financial markets. Perhaps more important is the fact that it focuses our attention on the relation between investment on the one hand and growth in debt and equity claims on the other. That a disposition to save large amounts at high levels of income requires large investment for prosperity is now generally accepted. It must sooner or later be realized also that in a community with a disposition to save *in the form of non-produced assets* the attainment of prosperity requires corresponding increases in debt [8] and equity claims outstanding.

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The points raised by Dr. Colm and Dr. Dulles really involve two questions:

[7] In fact this measurement is in substance nothing but the difference between gross investment and gross saving for each of the main groups in the community and its algebraic sum must therefore be zero. The difference between investment and saving approximates very closely what Messrs. Krost and Currie call the 'net contribution to money incomes'.

[8] Including money. The analysis would be significant for an understanding of the velocity of money so far as it threw light on the disposition to save in that form.

a) Is the saving done under the Social Security Act to be regarded as government or individual saving?

b) If it is to be regarded as individual saving, should it be measured by the increase in reserves or by the increase in the present value of individuals' claims to benefits under the Act, in which case it would have to be offset by government dissaving equal to the excess of the present value of claims over reserves?

If the saving performed under the Social Security Act is regarded as that of individuals, the question of how to measure it is not merely academic, since the increase in present value of benefit claims is not equal to the increase in reserve.[1] The reserve represents more nearly what individuals have paid. The difference between the reserve and the present value of the claims would, therefore, have to be regarded as a contribution by the government and, therefore, as dissaving by it if the total present value of claims is included in individual saving. If, instead, we measure the saving by growth of the reserves we are not really measuring the increase in individuals' equity. Also individuals' saving would be affected by Congressional appropriations for transfers to the Old Age Reserve Account. This seems to introduce an arbitrary element into individual saving. On the other hand, computation of the present value of claims must be based on the most hazardous assumptions. In short, as far as question (b) is concerned there are objections to both methods.

As both these treatments prove unsatisfactory it might be better to consolidate the trust accounts in question with the government's general accounts and to regard the increase in reserve as government saving. This method has the advantage of avoiding question (b). It would not involve the questionable computation of changes in the present value of claims nor would it imply any equality between Title 8 taxes and transfers to the Old Age Reserve Account, as does the reserve system when credited to individuals. Dr. Colm's point that individual saving before and after the Social Security Act are more nearly comparable when Social Security saving is not credited to individuals does have merit. Furthermore, individual saving can more legitimately be compared with the Department of Commerce series of

[1] See the report on the actuarial status of the Old Age Reserve Account contained in the Annual Report of the Secretary of the Treasury for 1938, p. 56.

'Income Payments to Individuals' when Social Security reserves are excluded from individual saving than when they are included. This is an important advantage when studying the relation of saving to income. Therefore, we are not inclined to object to the change Dr. Dulles and Dr. Cohn have suggested.

Dr. Copeland is quite correct in saying that when all the balance sheets in the community are consolidated, the equity item is balanced not only by tangible assets but also by special privileges. Our statement on this subject has been corrected to take account of this minor complication.

Dr. Hart is, no doubt, right in saying that saving in the form of a reduction in tax arrears—now attributed by us to state and local governments—should properly be credited to individuals. The errors involved here affect only the distribution of saving and not the total figure because we do not take into account changes in either taxes receivable by governments or in taxes payable by individuals. Since we do not know how much of state and local tax receipts represents payment of accrued taxes, we do not know the amount that should be shifted to individuals.

The question of whether to correct for the understatement of corporate deposits and how to do so is complicated and fairly important since items in transit between depositors over the year-end probably changed by several hundred million dollars a year during the period. It may be considered on two planes. First, what procedure is best designed to make this figure itself correct, disregarding the possibility that there may be offsetting errors elsewhere that reduce the error in the total saving figure? Second, is the understatement of corporate deposits associated with any offsetting errors that would remain when the understatement is corrected, so that the correction would increase the error in the total saving figure?

Consider, first, the separate correction of our estimate for corporate deposits, for the moment ignoring deposits that belong to neither individuals nor corporations. The problem is to remove the overstatement of individual deposits that results from estimating them as the residual of total deposits taken from banks' balance sheets after insufficient deduction for corporate deposits. We might reduce the residual by deducting from the minuend (total deposits) the items in transit between depositors,

thus putting 'total deposits' on the basis of figures in the depositors' rather than the banks' books. Then when we subtract corporate deposits the residual for individuals is on the basis of their books. This downward adjustment is too great. The items in transit, instead of being credited to *either* the payer *or* recipient as they should be, are credited to neither. The result is an understatement of individual deposits, so far as this component is concerned. The amount of this understatement depends on whether we decide to credit these items to the payer or recipient. If we want to credit the payer, the understatement is equal to checks in transit written by individuals. If we want to credit the recipient it is equal to checks in transit written to the order of individuals. While either alternative presents very great difficulties when it comes to actual calculation, these difficulties seem somewhat smaller if the payer is credited.

A second way of reducing the residual is to add a correction to corporate deposits. Again it seems more practical to estimate the checks in transit written by corporations rather than those going to them. If this method is used, however, it must be remembered that some checks in transit are written by governments. If these are not to be credited to individuals they must be included in government deposits which also are deducted from total deposits in arriving at deposits of individuals.

Now let us consider our understatement of corporate deposits in conjunction with certain other errors and omissions Dr. Hart mentions. When in the future we attempt to estimate debts payable by individuals to corporations we shall probably have to resort to corporations' figures of accounts receivable and payable. These figures will overstate net items receivable just as they understate deposits because a corporation that has mailed a check and deducted the amount from its deposits will also have deducted it from its bills payable. The prospective recipient, not having received the check, will not add it to his deposits but neither will he have reduced his accounts receivable. Accordingly, any estimate of individuals' indebtedness to corporations that is based on corporate net accounts payable must take account of this error. Since it would exactly offset the present error in the deposit figures it might be best to leave the present overstatement

of individuals' deposits and to allow it to be offset by the overstatement of their indebtedness.

Dr. Hart's criticism concerning debts of individuals is justified in principle. We have probably missed an important volume of individuals' debts to business corporations and banks. Whether Dr. Hart's own attempt to estimate individuals' short term indebtedness is successful is difficult to say. Part of the reduction in debt undoubtedly reflects write-downs of bad debts which we want to eliminate. Part was probably offset by an increase in debts owed by individuals to non-reporting corporations such as government agencies, which seem to be neglected in Dr. Hart's computation. It seems doubtful that the net debt repayment we have omitted amounts to as much as $6 billion. But we recognize the necessity for filling this gap.

Our estimate of the change in deposits in closed banks does not seem subject to Dr. Hart's criticism of excessive valuation. During 1935–37 the figure is almost entirely composed of actual payments made to depositors, and to a less extent, also in 1934 (Ap. Table I–2). Our estimate of the change in deposits does not and should not include losses suffered in the liquidation of deposits in closed banks. Losses do not involve dissaving as defined for our study; they are merely a writing down of assets. Dr. Hart's suggestion, as we understand it, would introduce a revaluation, which we have throughout tried to exclude.

The omission of a figure for net security purchase or sale balances of business corporations is a defect. The main source of information, the book value of non-tax-exempt securities as reported in *Statistics of Income,* seems affected to such a degree by revaluations and other extraneous factors as to be unusable. It may be possible, however, to compile a sample of corporate balance sheets that is less affected by these factors and will indicate the direction and order of magnitude of corporate transactions in outstanding securities.