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National Income

Scope of Enquiry

and

Method of Approach

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NATIONAL INCOME-SCOPE OF ENQUIRY AND METHOD OF APPROACH

Introduction -

Part I - The National Income by Types of Payment.
Excluded Items.

Part II - General Method of Computation.

Part III - Outline of Sources.

Part IV - Alternative Methods of Computation.

The national income may be defined as the algebraic sum of the income payments to individuals and the accrued net savings, positive or negative, of the various economic enterprises of a nation. For practical purposes the payments of interest and dividends to "aggregates of individuals", including financial institutions such as banks and insurance companies, which manage the people's savings, are also included in the estimates.

An alternative definition is from the standpoint of production. National income arises mainly through the production of commodities and the rendering of services. Whether these operations are undertaken by the business enterprise or by the individual himself, personal incomes are for the most part derived from productive activity. The enterprise considered as a unit receives a gross revenue from operations and distributes the proceeds either to other concerns or to individuals in the conventional forms of salaries and wages, dividends, interest, withdrawals, pensions, and compensation to workmen for sickness and accidents. When depreciation and expenses paid to other industrial organizations are deducted from the gross revenue, the payments and accruals to individuals, constituting the residue, is considered as the net contribution of the enterprise to the National Income.

National income has also been defined as the algebraic sum of the expenditures and savings of individuals. The amounts credited to individuals may either be devoted to the purchase of commodities and services for direct consumption, or to the formation of capital in preparation for productive expansion. Whether viewed as a return for the production of goods and services or as a means of obtaining personal utilities and expanding the capital equipment, the national income is essentially the sum of payments to individuals, and the computation of it must be directed toward the measurement of such payments.

The most direct means of obtaining the total national income would be by census enumeration, but it is doubtful whether complete information could be obtained in this way. The receipt of salaries and wages by employees in Canada is available for the census years 1910-11, 1920-21, and 1930-31, but the census questionnaire excludes other types of individual income, such as dividends, interest, rent and withdrawals of employers and persons working on own account. Some information regarding income is obtained annually from income tax returns received by the Department of National Revenue. The partial coverage and the lack of detailed distribution, however, prevents the extensive use of such material for the present purpose.

An interesting experiment in the direct method of approach was the income census of Australia taken in 1915. The enumerator enquired as to the personal income, if any, of each individual residing in the country. It is now considered that the returns had a downward bias, and the method has obvious disadvantages stated as follows in the official report; "In view of (i) the emergency nature of the War Census, (ii) the evidence of incompleteness furnished by the returns, and (iii) the tendency for persons furnishing returns to suspect taxation, and hence to furnish a conservative estimate, it is probable that the War Census total is an under-estimate of the position."

It is indeed no easy matter even for an individual to compute in terms of money, the total amount of his annual income. Doubtful items would include the imputed rent of his owned house, the money value of the goods and services produced and consumed on his premises and of the services ordinarily bought and sold but rendered free of charge within the family circle. The rural population is more resourceful than the urban in producing commodities (notably food and fuel) for family consumption, thus adding considerably to the family income. The imputed rent of the owned home in the city is an important item, ordinarily overlooked in this connection. The difficulty in expressing the total income of an individual is infinitely multiplied in the preparation of an estimate of the national income.

PART I - NATIONAL INCOME BY TYPES OF PAYMENT -

Productive effort is the main source of the income of individuals. We find from the decennial Census of 1931, that nearly two-fifths of the Canadian people were gainfully occupied. In other words, there were nearly four million people who earned money or its equivalent, by assisting in the production of marketable goods or services.

1. Out of the four million gainfully occupied persons in Canada at the time of the last census, more than 2½ million received payment in the form of salaries and wages in return for their co-operation in productive operations.

It is also reported that more than one-third of a million persons were working during the year in question without receiving any regular remuneration in the form of salaries or wages. As many of the "No pays" were farmers' sons working at home, the income of at least a part of the group consisted of a living allowance paid principally in the form of food, clothing and housing. Apprentices in other industrial groups, while receiving no money wages, sometimes obtain appreciable compensation in commodities and services. Payments in kind are of considerable variety, including farm rents, food, board and lodging of farm labourers, domestic servants and other employees. As there is not the customary freedom of disposal, some restriction is implied in the nature of such income.

2. Compensation is provided in eight of the nine provinces for injuries suffered by employees while engaged in industrial occupations. Funds are accumulated by contributions from the firms, classified into industrial groups according to occupational hazards.

Pensions are regarded as a credit item in the national income account. If a pension is paid to a retired worker out of company funds it should be added to the record. Similarly pensions in respect of war services, mothers' allowances, pensions to the blind and similar payments fall under this heading.

Relief payments may be divided into two categories, employment relief and direct relief. Employment relief has either been provided by the federal and various provincial governments on wholly-owned government enterprises or shared by federal, provincial and municipal governments on a percentage basis varying according to the nature of the work performed. A considerable proportion of employment relief has been directly carried out by outside agencies, particularly the construction industry, through transfer payments from the different authorities at varying rates of percentage contributions.

Work relief represents payments for services currently performed by individuals. The practice has been to distribute these amounts on the basis of estimates of salaries and wages, classified according to the contributors including the Dominion and provincial and municipal governments. Ultimate payments to individuals are made to a large extent through the construction industry.

Direct relief payments are disbursements to individuals that are not necessarily related to services currently performed by them. These payments after allowance for general expenses have also been distributed according to origin in the various government agencies.

3. In addition more than one million persons participated in productive enterprise as employers or by working on their own account. It is evident, that, for the most part, working proprietors will normally earn a larger per capita return than the employees. The earnings of this group for the services they render are known as enterprisers' withdrawals.

4. Dividends paid by Canadian corporations contribute greatly to the income of individuals. For example, gross declarations amounted to about $400 million in 1930, but only a portion of the sum was received by individuals living in Canada. A considerable part was paid to other companies and an even larger sum to shareholders living abroad. On the other hand, dividends earned and paid by external companies were received in considerable amount by Canadian shareholders. The amount of net dividends paid by

Canadian companies is determined from the compilation of the Income Tax Branch and the examination of a large sample of company accounts.

The estimated dividends paid by each industrial group represent the net dividends originating therein. Data are not available giving the proportion of dividends paid by each industrial group which flow to individuals and the proportion flowing to other industries. To determine the amount of dividneds originating in each industry, it was thus necessary to deduct dividends received from dividends paid, the sum of the results representing total dividends paid to individuals or aggregates of individuals.

The aggregate of the net dividends compiled in this way is equivalent to the payments to individuals in Canada and to shareholders abroad. It only remains to debit the portion going abroad and credit the payments of external companies directly to individuals in Canada.

5. A similar procedure is followed in computing the amount of bond interest received by individuals. Bond interest received by insurance companies and other aggregates of individuals, is disregarded when computing the net interest paid by such financial institutions. This departure from regular procedure is offset by disregarding the short-term interest paid by banks and trust companies to individuals on account of funds on deposit and return on capital equity from insurance companies. An adjustment for interest payments going abroad and for interest received by individuals from external sources is necessary. Unfortunately it is not possible to allocate these payments by industrial groups and the adjustment is consequently restricted to national totals.

Interest payments on mortgages are chiefly paid to three main groups making loans on real estate: - (a) various government agencies, (b) financial corporations such as insurance, mortgage, trust, land banking and railway corporations and (c) individuals.

It is possible to estimate the amount of mortgage interest paid to individuals by utilizing the decennial census and the annual reports of the federal and various provincial governments and the financial statements of insurance, mortgage, trust, bank and railway companies. Interest and mortgages held by individuals is divided into liens on farms and on non-farm property. The latter covers business and industrial property as well as residential, the total being segregated under the industrial group of real estate.

6. Net rentals, whether for a residential or business property, are an important form of return on investment. Offsetting expenses such as taxes, interest on mortgages, fire insurance, repairs, depreciation, and costs incidental to the ownership of property are deducted and allowances have been made for vacancies and non-collection of rents on rented properties to obtain the net return. An estimate of imputed rent for owner-occupied houses is also included. While a house is a consumption good, the occupation of it involves an addition to the income of the owner-occupant. The net imputed rental is estimated on the basis of actual rents paid for houses of similar type and location.

An important source of income is the amount which accrues to the credit of individuals through their interest in industrial and financial corporations. Gains effected by industrial companies in prosperous years, though payment may be deferred, add to the equity of the shareholder. The income of shareholders is reduced in less favourable times when a decline is experienced in the net assets of business enterprises as a result of the current year's operations.

Excluded Items -

The scope of the present study may be further clarified by comment on a number of items which are excluded, partly owing to the lack of primary data necessary for making reasonably accurate estimates.

(1) No attempt has been made to calculate the value of housewives' services, although the aggregate utility contributed by them in the home is doubtless substantial. Such activities, however, are inspired very largely by non-economic motives and form much more a part of life in general than of economic activity proper.

(2) Other uncompensated services of members of families, such as repairing of property, furnace-tending, snow-shovelling, washing and repairing of cars and similar functions performed within and about the home are not reported in the estimates.

(3) The lack of data regarding income from odd jobs is also the only reason for exclusion. These comprise such activities as canvassing by independent sales agents, street sales of newspapers and magazines, the mowing of lawns and shovelling snow for a money remuneration.

(4) The amount of illegal income arising from gambling, sweepstakes, bootlegging and the like, is carefully concealed by the recipients and consequently cannot be computed.

(5) With the exception of house rentals, no account is taken of the return arising from the use of owned durable goods. Besides the difficulty of estimating the hypothetical rent of automobiles, furniture and similar goods used by the owner, there is involved the problem of differentiating between economic and non-economic activities. All types of short-term interest except that paid on mortgages are excluded from the general estimate.

As explained above, banks and insurance companies for certain purposes are regarded as aggregates of individuals, and revenues in the form of dividends and bond interest are not deducted when computing the net revenue from these sources.

As an offsetting item no account is taken of the short-term interest paid by banks to depositors, nor of the income accruing to individual policy-holders through the operations of the insurance companies in excess of the basic requirements of policies. It would be even more difficult to compute the amount of other short-term interest received by individuals. Similarly, no account is taken of the changes in the value of assets or property held.

(6) Profits or losses from the sale of assets or property largely due to changes in prices are regarded as pertaining to the capital rather than the current account of individuals. They result from the capitalization of present or future changes in net income which are independently shown in the general estimate. The inclusion of the gains or losses arising from the change of ownership would amount to duplication. However, profits or losses derived from the sale of assets by professional dealers are included since they presumably represent the value of the marketing services rendered by these individuals.

(7) The changes in value of commodity inventories are excluded, this treatment being carried out aside from the effect on industrial profits or losses as reported in the annual statements of companies. The data of changes in surplus are compiled by calendar years for public interest companies as an indication of the trend of positive or negative savings of business enterprises. Information regarding inventory changes is not fully reported for most industries in profit and loss statements. In another connection change in inventory is computed for a number of large industrial groups as an element in capital formation.

(8) Business enterprise distributes to employees a considerable amount in addition to salaries and wages. These payments include selling costs such as expense accounts of commercial travellers and agents, bonuses and similar supplementary income. Other examples are pensions paid informally and commissions aside from the insurance group, where an estimate has been made of the receipts of agents under this heading.

(9) Another class of payments to individuals for which adequate information is not available includes amounts received from unorganized charity and similar gifts. Bad debts are final transfers from the creditor to the debtor. Inheritances are regarded merely as transfers from the estate of the deceased person to the beneficiaries. Such payments affect the distribution of income rather than alter the amount of it from the national standpoint.

A definite statement of the content of the national income as here computed is presented above as a further measure of guarding against mis-conception. Discussion is also given of the excluded items. As the primary purpose of the study is to determine the purchasing power acquired by or accruing to individuals, there is a presumption in favour of including all such items as affect the amount of personal incomes. The main reason for exclusion is that certain classes of payments to individuals cannot be computed owing to lack of adequate data. Other elements in the national income are derived from non-economic activities or are components in the statement of wealth or capital rather than of income.

PART II. - GENERAL METHOD OF COMPUTATION.

As a clue to the best method of measuring the national income, it is obvious that most payments to individuals are due to personal or capital services. Such remuneration is paid by business enterprises to individuals for their contribution to economic activity. The remuneration for capital services is regarded as extended to include not only current payments but accruals treated as shares of the value of current production of commodities and services, retained by enterprises for the benefit of shareholders. The sum of such income and personal earnings, constitutes by far the greater part of the national income as visualized here. Arguments have been presented for and against the inclusion of receipts by individuals not representing a return for services rendered. These include non-contributory pensions and direct relief as paid either by business enterprise or by government. In recent years such one-sided payments have bulked large in the Canadian economy, contributing appreciably to purchasing power. While recognizing that authorities have not yet reached unanimity on this point, it has been decided, following Kuznets, to include the sum of the payments in the general estimate. This decision is justified by the definition adopted at the inception of the study. As payments to individuals many not be compiled directly, owing to the paucity of the data, an indirect method must be formulated. In the production of commodities and services by business enterprises, personal services and capital are furnished by individuals and "aggregates of individuals". (The term "aggregates of individuals" includes organizations such as banks and life insurance companies which are considered as associations of individuals organized to manage their collective savings). In return for their services, the business enterprises pay out income to the individuals and aggregates of individuals in the form of wages, salaries, withdrawals, dividends, interest and rents, etc.

(a) A considerable part of the activities of the Dominion Bureau of Statistics has for many years been devoted to obtaining information regarding the annual operations of economic groups. An annual census is maintained of the operations of the eight main industrial groups producing commodities. The reports include the gross production, cost of materials, fuel and electricity and fixed capital. From the latter item may be computed a reasonable amount for depreciation. From 1919 to 1921, the amount of miscellaneous expenses was also collected for some important groups. By deducting from gross revenue, the above mentioned payments to other industrial groups and an allowance for depreciation, we obtain the national income derived from the group.

(b) A further step is the allotment of that total among the different claimants. Information regarding salaries and wages is readily available for most groups. The number of enterprisers is reported by the decennial census and the remuneration for their services is estimated by use of wage data and other pertinent material. The number of enterprisers in inter-censal years is estimated from the number of plants or establishments wherever available. Dividends and interest are computed from information furnished by the Income Tax Branch of the National Revenue Department and through the examination of a large sample of corporate accounts. Other payments to individuals include compensation for injuries, interest on mortgages, etc. The sum of the above-mentioned payments to individuals will differ from the national income by the positive or negative savings of enterprises. While the residual item is retained by the enterprise, it is evident that it affects the income of the shareholder or other participant. The enterpriser working on his own account or as a member of an unincorporated firm may appropriate the profit immediately or, by ploughing back profits, enhance the net worth of the enterprise. In any case the residual positive or negative savings accrue to individuals. The estimate of withdrawals is restricted in this study to a fair remuneration for services performed, including the contribution of the enterpriser to the management of the concern.

The research work in this connection included an analysis of about 30 industrial groups. In many of these the gross revenue was known and it was possible to improvise a profit and loss statement for each of the years during the period of observation. Briefly, the plan was to regard payments to other industries and depreciation as a debit and payments to individuals either in current form or in accruals as credit in the national-income account. The sum of the debits and credits is equivalent to the gross revenue, providing an excellent verification of the distribution.

The gross revenue and payments to other industrial groups are unavailable for a considerable part of the economic field. The procedure in such cases was to compile the payments to individuals including positive or negative business savings. The absence of information as to the other phases of the group accounts was a disadvantage, but alternative methods of verification have been adopted wherever possible.

Company profit and loss accounts seldom furnish sufficient information for the compilation of the contribution to the national income. They are normally arranged in such a form as to avoid the disclosure of the cost of operations. Even if a complete set of profit and loss accounts of all business enterprises as usually prepared were assembled, a number of items essential to a national-income study would be lacking. Nevertheless, by drawing on the data available from manifold sources, it is possible to obtain results within a reasonable margin of error.

PART III. - OUTLINE OF SOURCES.

The main source of income data is obviously the reports of the Dominion Bureau of Statistics. The annual censuses of agriculture, mining, manufactures, electric power, construction and related primary industries are a treasure-house for the research worker along this line. The construction census was re-established in 1934 after having been discontinued thirteen years previously. During the interval, considerable information may be obtained from MacLean's Building Reports, giving construction contracts awarded by months and years for each of the provinces as well as the Dominion.

The gross and net value of production, summarizing the results for nine main branches, is published in the Annual Survey of Production. In branch reports as originally published, a considerable amount of duplication is shown between the gross operating revenues of the manufacturing group and the various primary industries. The lumber and pulp and paper industries are included with forestry and smelting and a number of non-metallic mineral industries with mining. Owing to the many changes in method and content in recent years a revision of the totals originally published in the Survey of Production was necessary for the period of observation. The deduction from Dominion and Provincial totals of the cost of fuel and purchased electricity by industrial groups and the elimination of duplication by reducing the manufactures total was a heavy task. The use of totals for manufactures n.e.s. rather than for the total group causes a difficulty in establishing the relative contribution of the different industrial groups, but this treatment is regarded as the best solution under the circumstances. The term "manufactures n.e.s." signifies the residue of the value added by manufacturing operations after deducting of industries closely connected with primary groups, including fish curing, sawmilling, pulp and paper, smelting and certain mineral industries.

Annual operating reports for railway and public utilities are published by the Bureau, but the water and road transport groups require special research. The Income Tax Branch of the National Revenue Department furnishes excellent material regarding dividends and interest. The Dominion-Provincial Relations Commission compiled the distribution of dividend payments by provinces for the years 1926-1936, making use of Income tax files. The examination of many company accounts listed in the Annual Financial Review and the Corporate Securities Year Book of the MacLean Publishing Co., assisted in the distribution by industrial groups. The international flow of dividends and bond interest was furnished by the Internal Trade Branch from the study on the Balance of International Payments. Banking totals were made up by the use of the averages of the monthly reports published in the Canada Year Book and the study of corporation reports. Data as to salaries and wages was furnished by the Canadian Bankers' Association. The reports of the Department of Insurance were the main source of the estimates on the insurance group, but a special enquiry was made by the Life Insurance Association as to the division of Canadian and external disbursements. The Government contribution was mainly compiled from the Public Accounts of the Dominion and Provinces, with examination

of samples for the principal cities and rural municipalities. A special questionnaire was sent to the provincial governments regarding the amount of work and direct relief and the distribution of governmental contributions.

The payments derived from wholesale and retail trade were obtained mainly from the reports of the census of merchandising and service establishments. The monthly employment enquiry was of assistance in the computation for the years preceding 1930. The service census collected for one year only (1930) was the principal basis of the estimates for custom and repair and various forms of recreational, business and personal service. Data collected by the manufactures census from 1919 to 1921 was valuable in establishing relationships between the operating accounts in the different service groups.

Income produced through educational institutions was compiled by the Education Statistics Branch of the Bureau of Statistics and assistance wae obtained from the census of institutions regarding the income of the medical group.

The decennial census of 1931, with its thorough analysis of agriculture, population, occupations and employment, proved invaluable as a source of information unavailable elsewhere. The census of agriculture furnishes comprehensive data regarding the value and disposal of farm products and the cash expenditures of the farmer. The numbers and status of gainfully occupied were presented in Volume VII of the census of 1931, while the salaries and wages paid to employees, distributed by industrial groups, are reported in Volume V. As the information is given by provinces, the census compilations are an excellent guide to the geographical distribution.

An appendix to the report of the Commission on Dominion-Provincial Relations is devoted to a study of the National Income of Canada. A considerable staff was engaged in this project for nearly two years and extensive detail prepared, which will undoubtedly prove very useful to investigators in the field. (Upon publication of the Appendix, further comment will be presented).

PART IV. - ALTERNATIVE METHODS OF COMPUTATION.

The fundamental concept of the national income is that it consists of the sum of individual incomes. Such incomes are mainly paid to individuals in view of their participation in economic activities and may be considered under several headings such as productive and distributive functions, saving and expenditure. Economic activity is a continuous process, but may be examined from different standpoints.

(a) Productive method - Commodities are produced and services rendered by business enterprises classed as individual, partnership or company. The gross operating revenues from the sale of the product are divided for the present purpose into (1) payments to other industrial groups and depreciation allowances and (2) payments to individuals, including accruals in the form of positive or negative savings. The items under the former include the costs of raw materials for fabrication or resale, general expenses for services of transportation, advertising, banking, government and other producing units and depreciation allowances for the value of capital equipment consumed in the process of production.

Deducting the sum of these expenses from the gross revenue, it is evident that the residue is the amount available for distribution to individuals including accruals in the form of positive or negative savings of enterprises. This method is quite generally used in computing the national income ariginating in agriculture. Failing adequate data for other methods, the agricultural totals were made up in this way by Colin Clark in "National Income and Outlay" pages 73 to 78, as a component in the estimate of the national income of Great Britain. The method was also used by the United States Department of Commerce and the Commission on Dominion-Provincial Relations. Owing to the comprehensive data available through annual census reports in Canada the method has been applied in the present study to a considerable number of other economic groups. The ultimate objective is to extend the application of the method to the whole economic field, making at appropriate places such adjustments and amendments as may be necessary to arrive at the desired total of aggregate income payments to individuals. The resulting total should correspond closely to the national income or "income produced" published for the United States by Dr. Simon Kuznets in "National Income and Capital Formation".

For the purposes of this report, the procedure outlined under (a) is named "The productive method".

(b) The industrial framework is also the starting point for the explanation of the distributive method. Business enterprises distribute to individuals in one form or another, the remainder of the gross revenue after providing for depreciation and operating expenses paid to other organizations. Individuals co-operate in supplying labour and capital for the production of commodities and services. The claimants are remunerated for their participation by the payment of salaries and wages and other labour compensation, the withdrawals of owners for their services, dividends, interest and net rents. If a business gain accrues during a given period and is ploughed back into the enterprise, the retention adds to the equity of the shareholders. A loss on the year's operations would have the contrary effect of reducing the accrued income. The sum of these payments should be equivalent to the total obtained by the production method (a). For the industrial groups on which sufficient data are available for the application of both methods, an excellent form of verification is provided. The distributive method (b) is the most popular in Britain and America in preparing estimates of national income. Except for agriculture the production method is practically disregarded by the research workers on national income in those countries. The conventional method is to make a summation of payments to individuals whether distributed by industrial groups as by the Department of Commerce in the United States, or in bulk as by Dr. Colin Clark in his latest book, "National Income and Outlay". The sum of payments to individuals by economic enterprises for productive activities with no adjustment for business gains or losses is named "income paid out". This total differs from the national income by the extent of accruals in the form of positive or negative savings of enterprises, but is valuable for some purposes. One of these is the geographical distribution, where the breaking up of accruals according to the location of the shareholders presents a difficult problem.

Detailed income tax data contribute greatly to the estimates of national income prepared by method (b) in Great Britain and the United States. The compilation of the tax returns in the latter, presents information by industrial groups as to payments to individuals in the form of salaries and wages and dividends, etc. Even business gains and losses are known from this source and the national income may be obtained by adjusting the payments to individuals for the positive or negative savings. The income tax returns of Canada, however, have not yet been used to any appreciable extent in making up the industrial totals, as the industrial classification used by the Income Tax Branch does no conform to that of the Bureau. Even in other countries it is found that while income tax material is of valuable assistance, many other sources must be requisitioned to complete the picture. The distributive method has been applied in the present study to each of the economic groups and on the whole this approach appears the most suitable for the computation of national income. In view of the availability of basic data, no other procedure can compare under present circumstances with the distributive method. Our object is to obtain the sum of individual incomes and it seems that the cardinal method must be to examine the records of the different economic groups from which that income is derived. While method (b) is on the whole superior to other procedures, it must not be overlooked that basic data for most of the groups are far from adequate, and other methods must be used for verification. The application of alternative methods will also furnish supplementary information of great value in interpreting economic operations.

(c) A third method is the summation of the expenditures and savings of individuals. Surveys of urban family expenditures have recently been collected in the United States and Canada. The project in the United States was under the direction of the National Resources Commission with other governmental agencies co-operating. Data were collected for 300,000 families and a further study is under consideration for 1940. With such a large body of records available it may be possible to construct a picture of the disbursement of income in the United States. Returns were received from a sample of 1,800 families in Canada during the later months of 1938. While furnishing valuable information regarding problems of nutrition and for the weighing of cost of living indexes, the sample is regarded as too selective and consequently unsatisfactory for the determination of the total expenditure and savings of Canadian families.

(d) The fourth method has greater promise. It consists of a study of commodities and services made available for consumption and for the expansion of capital. The primary purpose of income is to provide utilities for the breadwinner and his dependents. This may be accomplished directly by the purchase of goods and services or indirectly by an expansion in capital equipment. The assumption behind this approach is that income is used up by the purchase of consumption goods and the formation of capital. The method is to classify goods and services into consumers' goods and producers' goods and to trace

the flow from primary production or from importation, with adjustment for exports, until the goods or services are acquired by the ultimate consumer. The value of the goods and services computed as the end-product should approximately equal the national income.

The only thorough application of this method was made by the National Bureau of Economic Research under the direction of Dr. Kuznets. The results are outlined in "National Income and Capital Formation", and in greater detail in "Commodity Flow and Capital Formation" published in 1938.

A variation of this method was used in computing the national income of Sweden from 1861 to 1930 by the Institute for Social Sciences of the University of Stockholm. It was stated (page 16 of Part I) that, "disregarding the complications introduced by foreign trade, the total income in a given period will equal the sum total of consumption and net investment. The consumption group will include all services and non-durable commodities produced in the period that are ready for consumption, i.e., capable of satisfying without further processing human wants to which must be added any consumption from existing stocks, while any increase of stocks must be deducted. The investment group comprises the balance of the net product i.e., all items in excess of consumption and consequently involving a corresponding increase in the stocks of goods, whether consumers' or producers' goods." The following indicates the adjustment for external trade. "If exports are larger or smaller than imports, the total income of the country must be reduced by the export surplus or increased by the import surplus in order to represent the sum total of consumption and investment."

In addition to furnishing a device of verification, method (d) makes available valuable information not provided by the other procedures. The relative fluctuation of consumers' outlay and capital formation in different years is particularly useful in the interpretation of current economic movements. In recent years capital formation has been projected into the limelight in theoretical discussion and a statistical background is needed to place the controversy on a realistic basis. Research has solved many problems and it may be that these results will be of assistance in understanding the economic cycle and reducing the evils of extreme fluctuations in evidence for the last two hundred years.

(e) Finally, the population of the country may be considered as an economic unit and all the net incomes of individuals added up. The total income accruing to the inhabitants in a closed community, must be equal to the total income derived from the agents of internal production. In a community of this nature the result will thus be the same whether we add together in a given period all the individual incomes or the exchange value of all the productive contributions. The only difference is that another method of estimating the national income is being used. The calculation now proceeds from the receivers of income, while previously it originated at the source. Providing income tax returns were filed by those receiving income below exemption limits as well as by those above those limits, information would be available for estimating the national income according to this plan. The principal on which the individual incomes are estimated must be the same as that used when the productive contributions were calculated. The total should be modified in respect of any differences between the income concept adopted for taxation purposes and that on which the estimate of the productive contribution is based. Adjustments may include: additions for payments in kind, for example, the food products consumed by the farm family, capital gains and losses which should be eliminated and positive or negative savings or enterprises accruing to shareholders which should be included.

Method (e) presents a bird's eye view of national income by summing up the various types of payment for the population as a whole. From this viewpoint definite information is lacking on some of the streams of income flowing to individuals even in census years. Consequently the method should only be used for verification of results obtained by methods (a), (b) and (d) which involve detailed estimates by production and commodity groups.

The five methods outlined above by no means exhaust the possible procedures for estimating the national income. Estimates may be prepared for a variety of purposes and in consequence differ somewhat in content. A measure of the total output of the entire economy will differ from a measure of the total national consumption or the total current payments to individuals. The objective adopted here is to estimate the sum of

the payments and accruals flowing to resident individuals from year to year. In obtaining this income, it is advisable to make use of as many procedures as may contribute to the aim in view. While dependence has been placed mainly on the productive (a) and distributive methods (b), it is proposed to explore as time permits the expenditure (c) and consumption (d) and other procedures. We propose, however, to reserve the name "national income" for the most inclusive concept as defined above. Other variants may be computed for particular uses, but the main purpose of employing alternative methods is to verify the general result.

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