

**CONSIDERATION OF THE TREATMENT OF
GOVERNMENT IN NATIONAL INCOME ACCOUNTS**

**Thesis for the Degree of Ph. D.
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Ellis Thompson Austin

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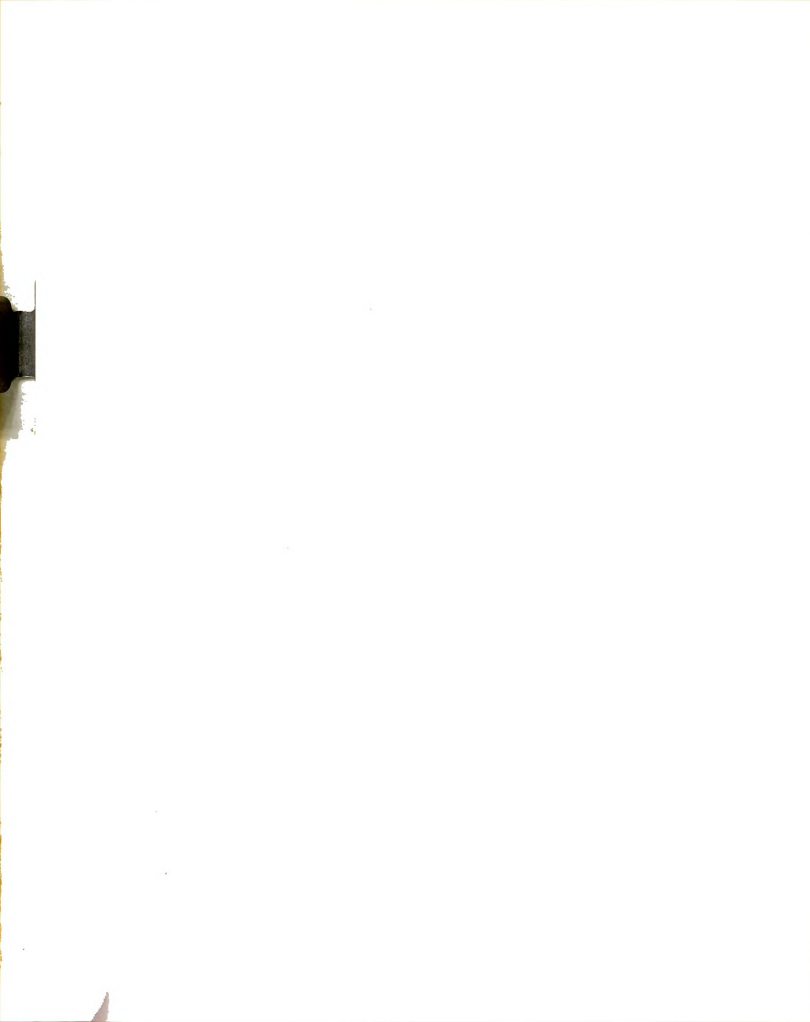
Ellis Thompson Austin

has been accepted towards fulfillment
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Amel C. Cline
Major professor

Date November 28, 1955







CONSIDERATION OF THE TREATMENT OF GOVERNMENT
IN NATIONAL INCOME ACCOUNTS

By
Ellis Thompson Austin

AN ABSTRACT

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This investigation is a consideration of the treatment of the government sector in national income accounting. The current magnitude of government economic activity makes its proper evaluation imperative if national income and product totals are to be meaningful as indexes of welfare.

In this inquiry considerable reliance is placed upon the historical approach. Thus the contributions of prominent authorities on the meaning of income and national income are reviewed. Outstanding among these economists is Irving Fisher whose view that savings are not income stimulated considerable controversy. Full agreement is reached, however, that ultimate income is psychic income, i.e., net satisfaction. Also, substantial agreement was obtained that the best measure of a nation's income and hence welfare is the nation's output of goods and services available for consumption and saving valued at market prices.

A survey of the first comprehensive attempts to measure national income indicates a lack of awareness of the special problems introduced by the government in the evaluation of national income. For example, Charles B. Spahr's estimate of national income in the United States, published in 1896, is characterized by virtual neglect of these problems. Progressive concern over these problems is shown, however, by the successive attempts to measure national income. In making its estimate in 1921 of the United States national income, the National Bureau of Economic Research dealt at length with the government sector, and, in

their 1927 publication, Arthur Bowley and Sir Josiah Stamp give major emphasis to the proper treatment of the government sector.

One of the most controversial questions that arises out of government economic activity is whether government interest payments are income or transfer payments. The consensus of both American and British economists is that interest paid on productive debt is income while that paid on unproductive debt is a transfer payment. American authorities, in general, accept the current Department of Commerce practice of counting all interest payments as transfer payments because of the difficulty of making the division between productive and unproductive debt. The conclusion of this study is that all interest payments are income payments since interest is a payment for a service and does not depend upon the productivity of the debt. A further conclusion is that the exclusion of government interest payments may not seriously impair national income estimates as indexes of welfare if this practice is consistently followed--that consistency is one of the most important ingredients in making national income estimate used for comparative purposes.

A second problem deals with the determination of government intermediate product. Three alternative approaches to this problem are used. The specific approach attempts to classify each item of government expenditure as either intermediate or final product. The tax approach assumes the value of government intermediate product to be equal to

indirect taxes. The "wholesale" approach either completely rejects or accepts all government purchases of goods and services. All these approaches suffer from inadequacies. But there is general agreement that no objective criteria are available and hence any measure of government product must be conventional. After an examination of these approaches, it is concluded here that the Department of Commerce practice of counting all government purchases of goods and services as final product, is the best convention.

A final problem which is vigorously discussed in national income literature is the meaningfulness of net national product at market prices as opposed to national income at factor costs. It is the conclusion of this study that, in spite of several serious limitations, the net national product at market prices series of the Department of Commerce is the best available index of welfare. It is also concluded that the many arbitrary decisions involved in arriving at a national income at factor costs series render this series invalid as either an index of welfare or factor costs. Out of this discussion a final conclusion is obtained, i.e., the national income and national product series should be identical since they are only two ways of looking at the same thing--the objective index of a nation's welfare.

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I. INTRODUCTION

The process of measuring national income has been a great source of controversy and confusion among economists. Despite the unequivocal nature of numerical national income totals, many arbitrary and subjective decisions are involved in their computation. In order to measure national income it must be defined, but the difficulties of successfully accomplishing this task are clearly noted in the following statement by William W. Hewitt:

The definition of income and its application to specific problems has for many years given rise to vigorous controversy. There are very few corners in the entire field of economics so infested with tricky, intricate problems whose solutions seem to appear just ahead of the student, but have the unhappy faculty of disappearing into thin air, after the manner of a mirage.¹

Simon Kuznets supports this position by noting that much controversy has arisen over the terms used in the definition of national income, and that they have been treated differently, at different times, by different investigators and by different countries. Furthermore, he contends,

The statistician who supposes that he can make a purely objective estimate of national income, not influenced by preconceptions concerning the 'facts,' is deluding himself; for whenever he included one item or excluded another, he is implicitly accepting some standard of judgment, his own

¹William W. Hewitt, "Discussion of Carl Shoup's Distinction Between 'Net' and 'Gross' in Income Taxation," Studies in Income and Wealth, vol. I, p. 291.

or that of the compiler of his data. There is no escaping this subjective element in the work In consequence, all national income estimates are appraisals of the end products of the economic system rather than colorless statements of fact; and, like all appraisals, they are predetermined by criteria that are at worst a matter of change, at best a matter of deliberate choice.²

With these warnings in mind, this study is an investigation of the conceptual problems introduced by the government in national income accounting. National income is comprised of both private and public production. The division of production between these two sectors has undergone a marked change. In the early nineteenth century, most public finance authorities considered that the role of the state should only be that of a "passive policeman."³ This political philosophy is well illustrated by the statement of an English Parliamentarian in 1830. He wrote, "Every particle of expense that is incurred beyond what necessity absolutely requires for the preservation of the social order and for the protection against foreign attack is an unjust and oppressive imposition upon the public."⁴ Under this philosophy, roads, canals, education, and the like, were thought to be outside of the proper sphere of government activity. Today, not only are such expenditures generally considered proper activity for

²Simon Kuznets, National Income and Its Composition, 1910-1938, p. 3.

³W. J. Shultz and C. L. Harris, American Public Finance, 5th ed., p. 10.

⁴Ibid.

the government, but expenditures for health and welfare, old age assistance, relief, government aid to agriculture, disaster relief, and so forth, are also accepted as proper for the government except for those few on the conservative fringe who speak of the dangers of such expenditures in leading down the road to socialism. This study is concerned, however, not with the best scope of governmental expenditures but with the magnitude of these expenditures. The period under study, 1890-1954, witnessed a tremendous growth in the role of the government. In the beginning of this period its part of total production was quite minor, while the end of the period sees the government contributing a substantial part of the total product. While the product of the government could be treated lightly when its scope was insignificant, without serious damage to the meaningfulness of national income totals, its marked growth made its proper treatment imperative if reliable estimates of national income are to be made.

National income and product totals must be appraised in the light of their contribution toward some particular goal. In this study this goal is taken to be social welfare. Social welfare is the sum of satisfactions and dissatisfactions, i.e., net satisfaction of the society under question. It can be divided into economic and non-economic welfare, although, as Professor Cannon has observed, "We must face, and face boldly, the fact that there is no precise line between economic and non-economic satisfactions"⁵ In this study, which

⁵A. C. Pigou, The Economics of Welfare, 4th ed., p. 11.

is concerned with only economic welfare, economic welfare is taken to be that part of social welfare that can be measured by money. As A. C. Pigou says, "The one most obvious instrument of measurement available in social life is money. Hence, the range of our inquiry becomes restricted to that part of social welfare that can be brought directly or indirectly into relation with the measuring rod of money. This part of welfare may be called economic welfare."⁶ Since social welfare is composed of two parts and only one part is being measured, variations in the measurable part do not necessarily make for similar variations in total social welfare. In discussing this problem, Pigou comments, "All this means is that economic welfare will not serve for a barometer or index of total welfare. But that for our purpose is of no importance."⁷

Although non-economic welfare is not measurable, it has considerable importance on total welfare. Thus, the manner in which income is earned can well affect non-economic welfare and consequently, total social welfare. This is illustrated in the change from an agricultural to an industrial society, in which the small village was replaced with the industrial city with its concomitant smoke, odors, hustle and bustle, and the like, and, on the other hand, its greater variety of entertainment, easier access to supply, and so forth. These changes certainly had their effects on social welfare as well as the changes in production. The decline of the church, which placed high emphasis on

⁶Ibid.

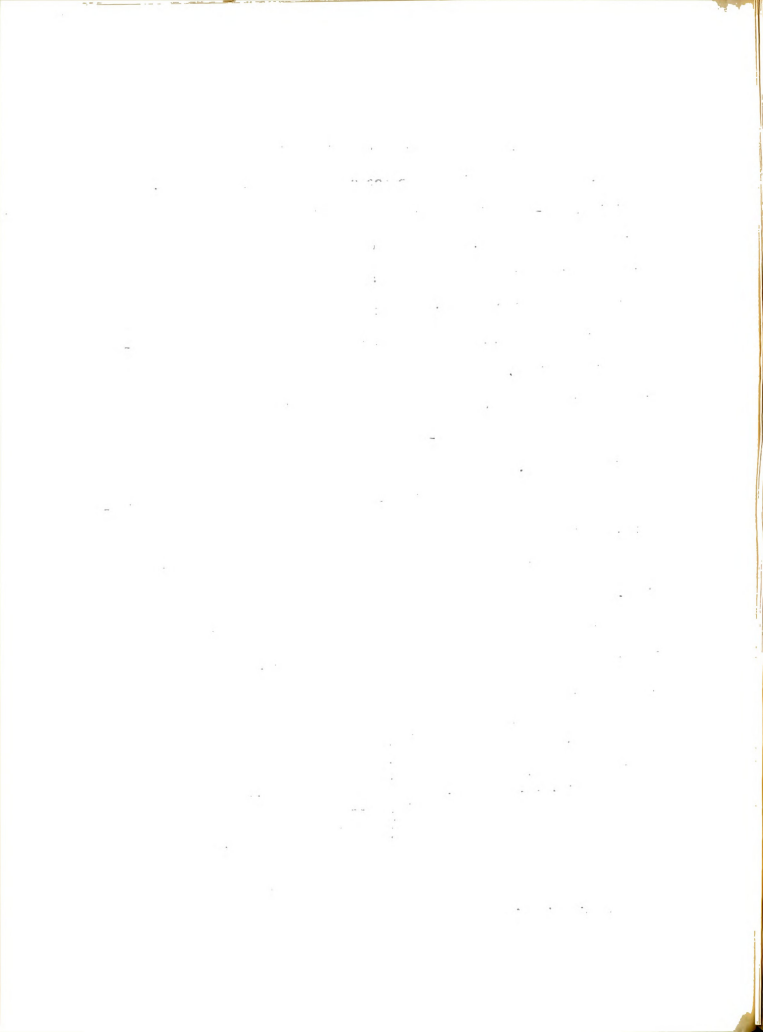
⁷Ibid., p. 12.

spiritual values, and the increasing weight given to materialistic values, also have significant effects on total social welfare. In addition, non-economic welfare may be modified by the direction in which income is spent. Expenditures for whiskey yielding the same direct satisfaction as expenditures for education may affect total social welfare differently; the former leading to drunken brawls and automobile accidents, and the latter to a more enlightened and co-operative society. The distribution of income can affect the manner in which it is spent, and variations in the distribution of income can cause variations in non-economic welfare even though production remains the same. The desires of the rich for yachts may be satisfied during a depression when the very poor may not have adequate nourishment, whereas a more equal distribution of income may make for a different pattern of expenditure leading to greater total social welfare.

The above discussion indicates that no rigid relation exists between economic welfare and total social welfare. But, as Pigou points out,

When we have ascertained the effect of any cause on economic welfare, we may, unless of course there is specific evidence to the contrary, regard this effect as probably equivalent in direction, though not in magnitude, to the effect on total welfare; . . . In short, there is a presumption--what Edgeworth calls an "unverified probability"--that qualitative conclusions about the effect of an economic cause upon economic welfare will hold good also of the effect on total welfare.⁸

⁸Ibid., p. 20.



It appears that no other choice is available to the economic scientist. Total welfare is always modified by non-economic conditions, but the economic scientist is unable to measure these effects. Consequently, the non-economic part of social welfare is neglected in national income accounting, not because it is unimportant but because it is immeasurable. Pigou does not feel that inability to measure non-economic welfare is a serious detriment to the use of economic welfare as a measure of social welfare. He concludes, "The bridge that has been built in earlier sections between economic welfare and total welfare need not, therefore, rust unused."⁹

The appraisal of national income and product totals in the light of their contribution toward the particular goal of social welfare is in accordance with the generally accepted goal of authorities discussing conceptual problems in national income accounting. Thus Kuznets remarks, "We assume that the goal of economic activity is to satisfy wants of individual consumers who are members of the nation, present and future. This is the only goal that seems to underlie the performance of a variety of economies and the only one that can be associated with the economic aspect of social welfare."¹⁰ J. R. Hicks also observes that there is no choice but to follow the tradition of using measures of national income as indexes of social welfare.¹¹ Among

⁹Ibid., p. 22.

¹⁰Carl S. Shoup, Principles of National Income Analysis, p. 180.

¹¹J. R. Hicks, "The Valuation of the Social Income," Economica, December, 1940, p. 107.

recent writers who accept this goal are Bowman and Easterlin, who note the general acceptance of the welfare criterion of a nation's productivity, i. e., the provisions of goods and services that contribute to consumer well-being both present and future; and that the decision as to end goals must be made before decisions can be made as to what to exclude and what to include.¹²

This study is consequently interested in making the best possible appraisal of the government product, with social welfare accepted as the goal of production. The measuring of national income involves two basic problems: what to include, and, once this decision is made, how to place a value on the items included. In the case of the government, these problems show up in the form of controversies on (1) whether government interest payments are income or transfer payments, (2) the determination and treatment of government intermediate product, and (3) the meaningfulness of the net national product valued at market prices and of national income at factor costs. In order to best evaluate these controversies, the historical approach is used. The contributions of early authorities are reviewed as an aid to proper interpretation and evaluation of these controversies. Consequently, this investigation is both historical and analytical.

¹²R. T. Bowman and R. A. Easterlin, "An Interpretation of the Kuznets and Department of Commerce Concepts," Review of Economics and Statistics, February, 1953, p. 42.

It should be emphasized that this inquiry is purely a definitional or conceptual one. As such, no causal relationships are considered and, furthermore, no discussion of arrangements of national income data for predictive purposes undertaken. A closed economy is assumed and only pure government activities are examined, i. e., government enterprise functions are not discussed.

II. EARLY CONCEPTS OF INCOME

As was pointed out in Chapter I, this study is concerned with arriving at as true and meaningful an estimate of national income in terms of economic welfare as possible. It is in particular devoted to the treatment of the government economic activity as a part of this total income. However, before that part of the national income due to government participation in the economic affairs of the nation can be evaluated, it is necessary to know the general meaning of income. This point is made explicit by Lindahl, Dahlgren and Kock in their statement, "To define more precisely the scope of the term 'national income,' it is first necessary to decide what should be understood by income generally."¹

During the period 1890-1930, many authorities expressed great concern over the importance of the proper definition of income.² Willford I. King, for one, points to this importance in the following question: "How shall the economic statistician define the terms income and wealth? The whole science of economics revolves about these concepts."³ Another economist, Irving Fisher, asserts:

¹Erik Lindahl, Einar Dahlgren, Karin Kock, National Income of Sweden, 1861-1930.

²'Early' is used here to mean about 1890-1930.

³Willford Isbell King, "Income and Wealth, How Can They Be Measured?" American Economic Review, September, 1925, p. 457.

I believe that the income concept is, without exception, the most vital central concept in economic science, and that on fully grasping its nature and interrelations with other concepts largely depends the fruition both of economic theory and of its application to taxation and statistics.⁴

Also, Edwin Cannan stated that the "two greatest ends" of economic inquiry were: why communities were rich or poor and why some of their members were above or below the community average.⁵

In spite of the great importance given to the concept of income and the large volume of writing on the topic, the definition of income was not standardized. As Fisher points out, "It is no exaggeration to say that at present the state of economic opinion on this subject is deplorably confused and conflicting."⁶ Kleinwächter, who wrote a book dealing specifically with this subject, contends that there is no useful concept of income.⁷ Among others to express a similar opinion was Professor Felix Flügel, who made a study of nearly all the income tax laws of the world for the express purpose of ascertaining how income was defined. He found that "In most of the income tax laws in force at the present time a definition of income is not to be found. The

⁴Irving Fisher, "Comment on President Plehn's Address," American Economic Review, March, 1924, p. 64.

⁵Edwin Cannan, "Division of Income," Quarterly Journal of Economics, May, 1905, p. 341.

⁶Irving Fisher, The Nature of Capital and Income, p. 101.

⁷Ibid., p. 102.

net taxable income is determined by an enumeration of taxable and non-taxable receipts."⁸ Furthermore, Seligman notes, "The problem of defining income . . . is one that almost baffles the student."⁹

The concept of income has thus been a source of great confusion to economists. Consequently, it was only natural for them to direct their energies to the solution of the general nature of income. In defining income and national income, most of these early authorities paid little heed to the economic activities of the government. Several reasons may be advanced for this neglect. First, the scope of government activity during this period was quite small. Not only was it quantitatively small, but the underlying political philosophy as discussed in Chapter I, was that the role of the government was to be at a minimum, i.e., restricted mainly to maintaining internal and external peace and order. Secondly, a theoretical discussion on the nature of income can be held without bringing in all the various sectors contributing to the national income, i.e., the defining of income has merits of its own. And finally, very few actual measurements of national income were made during this period. In theoretical discussions on the meaning of income and national income, it is easier to neglect the economic activities of the government than when actual attempts are made to evaluate the national income.

⁸C. C. Plehn, "The Concept of Income, As Recurrent, Consumable Receipts," American Economic Review, March, 1924, p. 8.

⁹See Plehn, op. cit., p. 1.

For these reasons government economic activity was virtually ignored in the very beginning of this period. There is, however, some difference in the treatment of the government as the period progressed by those economists who might be classed as theoreticians and by those who could be classed as practical economists, i. e., those who made actual estimates of income. For the most part the theoreticians concentrated on the general nature of income and tended to ignore the government throughout the period. Irving Fisher and Alfred Marshall, writing in the early part of this period, and C. C. Plehn and W. W. Hewitt, writing in the 1920's are representative of these authorities. Some theoreticians, for example, William Smart writing in 1912, give some attention to the government.¹⁰ Also, Hugh Dalton and A. C. Pigou, writing in the latter part of this period, point out the problem of properly treating government economic activity.¹¹ On the other hand, those authorities making actual estimates of national income gave increasing weight to government economic activity as the period progressed. Charles B. Spahr, writing in 1896, treated the government in a summary fashion. W. I. King, making his estimate of the national income in 1915, took note of the growing importance of the government, and although he considered it a separate industry, he gave it little special consideration. But the National Bureau of Economic Research and A. L. Bowley and J. C. Stamp,

¹⁰ William Smart, The Distribution of Income, pp. 7, 20, 27-28.

¹¹ Hugh Dalton, The Inequality of Incomes, pp. 165-166, and A. C. Pigou, The Economics of Welfare, pp. 31, 40-41.

who made their estimates in the 1920's, dealt at length with the problems introduced by the government in national income accounting. The treatment of the government sector by these authors is given in detail in Chapter IV.

A. Fisher's Service Definition of Income

One of the most provocative and interesting definitions of income was Fisher's service definition of income first presented in 1897. His definition aroused considerable controversy, and while much of it was critical, a great appreciation of the problems involved in defining income grew out of the controversy.

Fisher held that income consists of a flow of services through a period of time.¹² In his own words,

Income has already been defined as a flow through a period of time and not, like capital, as a fund at an instant of, and as consisting of abstract services, and not, like capital, of concrete wealth. The income from any instrument is thus a flow of services rendered by the instrument. The income of a community is the total flow of services yielded to him from his property.¹³

The controversial aspect of Fisher's definition is that only consumption leads to income--that savings are not income. His argument is that in the final analysis all income is psychic income. The human body is a transforming agent which takes all the objective services--such as the services of a piano, a house, a loaf of bread--and

¹²Fisher, The Nature of Capital and Income, Ch. VII.

¹³Ibid., p. 101.

transforms them into a stream of consciousness. In other words, satisfaction is income and anything that yields satisfaction yields income. Only consumption leads to satisfaction; therefore, only consumption is income.¹⁴

Since Fisher rules out savings as income, he counts depletion of capital as income. He is forced into this position in order to account for that part of production or income that goes into savings. Thus, if a man receives an annuity payment of \$1,000 per year, this is his income even if \$400 of it may be capital consumption.

Vigorous protestations were forthcoming against Fisher's position. One of the strongest attacks was made by W. W. Hewitt.¹⁵ He makes several comments noting defects of the service definition. In the first place, it deviates from the common usage of the market place. Suppose, for example, that a store makes a profit of \$10,000. Whether this is considered income or not depends on the manner of its disposition. If it is consumed, it is income. Reinvestment makes it capital but not income. Thus the test of income is the act of consumption. Unless consumption takes place, no income may be said to be received. Secondly, it is impractical for application to such

¹⁴Ibid., Ch. X.

¹⁵William Wallace Hewitt, "The Definition of Income," American Economic Review, June, 1925, pp. 239-240, and "Professor Irving Fisher on Income, in the Light of Experience," American Economic Review, June, 1929, pp. 219-225.

matters as the income tax, since it would now become a consumption tax. Thirdly, it is inconsistent with its use by economists in the theory of distribution. The total flow of wealth is distributed and that part of the flow that is saved is distributed along with that which is consumed. And finally, Hewitt objected to Fisher's counting depletion of capital as income, as it then becomes possible for businessmen to take losses and yet show a positive income.

Winthrop M. Daniels and Frank Fetter are among others to condemn Fisher. They point out that his view is opposed to the usual view of economists, businessmen and accountants, and that it leads to peculiar conclusions as to justice in taxation.¹⁶ The National Bureau of Economic Research also took a strong position against Fisher. This organization faced the problem of making an actual estimate of the national income of the United States in 1921. The Bureau states,

In the accounts of practically every business, the net income as recorded includes the annual surplus as well as all disbursements to stockholders or owners. This uniform policy shows that a consensus of opinion exists among accountants that savings are a form of income. If the accountants are wrong, we are driven to the conclusion that the amount of the annual income of a corporation may be altered greatly by a vote of the directors, concerning the disposition of earnings!¹⁷

¹⁶Winthrop M. Daniels, "Are Savings Income--Discussion," American Economic Association, Vol. 9, 1908, p. 50.

¹⁷National Bureau of Economic Research, Income in the United States, vol. II, p. 3.

While the bulk of the ventured opinions were against Fisher, some support was given him. Thus Pigou says, "Personally, while recognizing that awkwardness of wide departure from business usage, I am inclined to prefer the shorter and simpler term 'services.'"¹⁸ Also, when concerned about the economic welfare of the community over a long period of time, "Then, no doubt, Professor Fisher's conception is the proper one." But further on Pigou asserts, ". . .despite its inferiority from the standpoint of dialectics, I hold that Dr. Marshall's conception is substantially the one we require; . . ."¹⁹ Dr. Marshall's definition, discussed below, contends that consumption plus savings equals income.

Although Fisher does not take the government into special consideration in his discussion of income, it could be deduced that he would consider government services in the same light as any other services, since in his discussion of capital he speaks of public parks, streets, and public buildings and of the services derived from their use.²⁰

¹⁸A. C. Pigou, Wealth and Welfare, p. 15.

¹⁹Ibid., pp. 19-20.

²⁰Fisher, The Nature of Capital and Income, p. 27.

B. The Wealth Definition of Income

Alfred Marshall subscribes to the wealth definition of income-- that income equals consumption plus saving, or, as defined by Hewitt, a "flow of commodities and services, that is, wealth itself."²¹ Marshall thus defines gross income as "that stream of Economic Goods which flows in (or comes in) during a certain time, of (i) new elements of wealth, (ii) benefits derived from the use of wealth, and (iii) such passing enjoyments as from their fleeting nature cannot be included in the stock of wealth, but yet have a market value. . ."²² To find net income, the outgoings necessary to the production of the gross income are deducted. Marshall introduces a term, the 'Usuance of Wealth,' which corresponds to Fisher's service definition of income, that is, the services or benefits derived from the use of wealth.²³

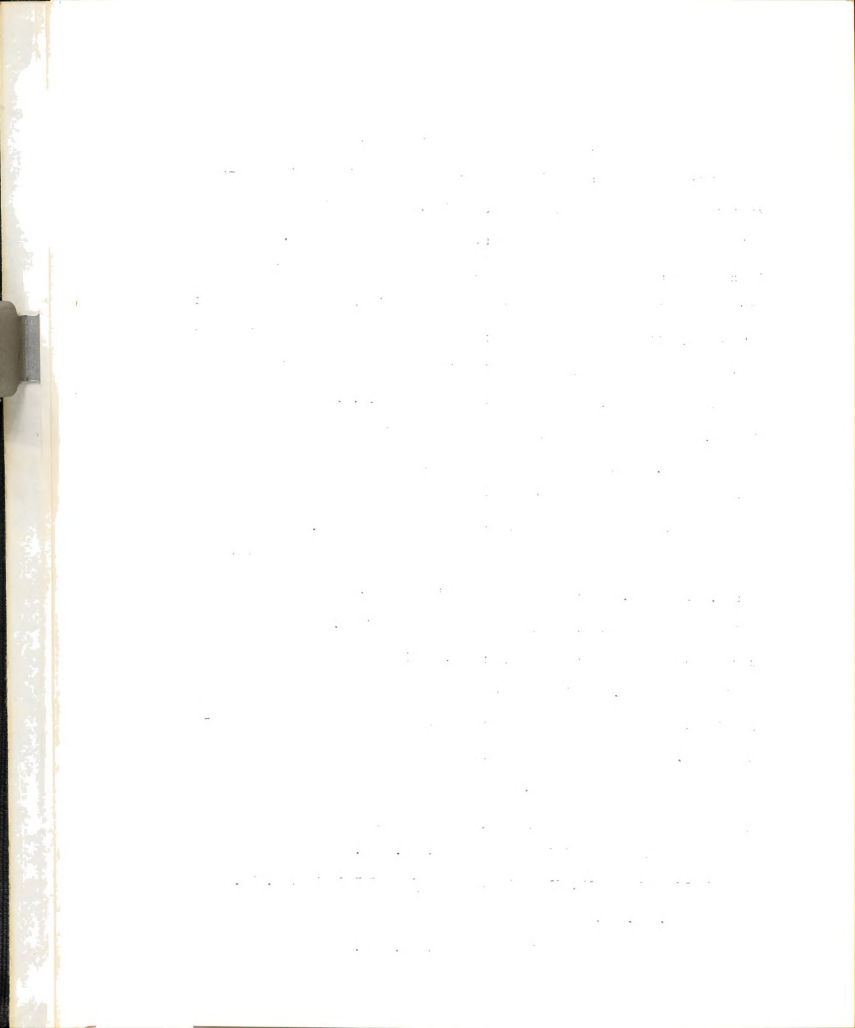
Among others to proclaim the superiority of the wealth definition was W. W. Hewitt, who speaks of society's machine-like organization which annually produces a flow of goods and services. Out of this stream must be drawn consumption goods, capital replacements and capital additions. Social income is this flow of commodities and services, through a given period of time, that are available for distribution. To obtain net social income, depreciation must be deducted from the gross social income.²⁴

²¹Hewitt, "The Definition of Income," p. 239.

²²Alfred Marshall, Elements of Economics of Industry, p. 66.

²³Ibid., p. 68.

²⁴Hewitt, "The Definition of Income," p. 240.



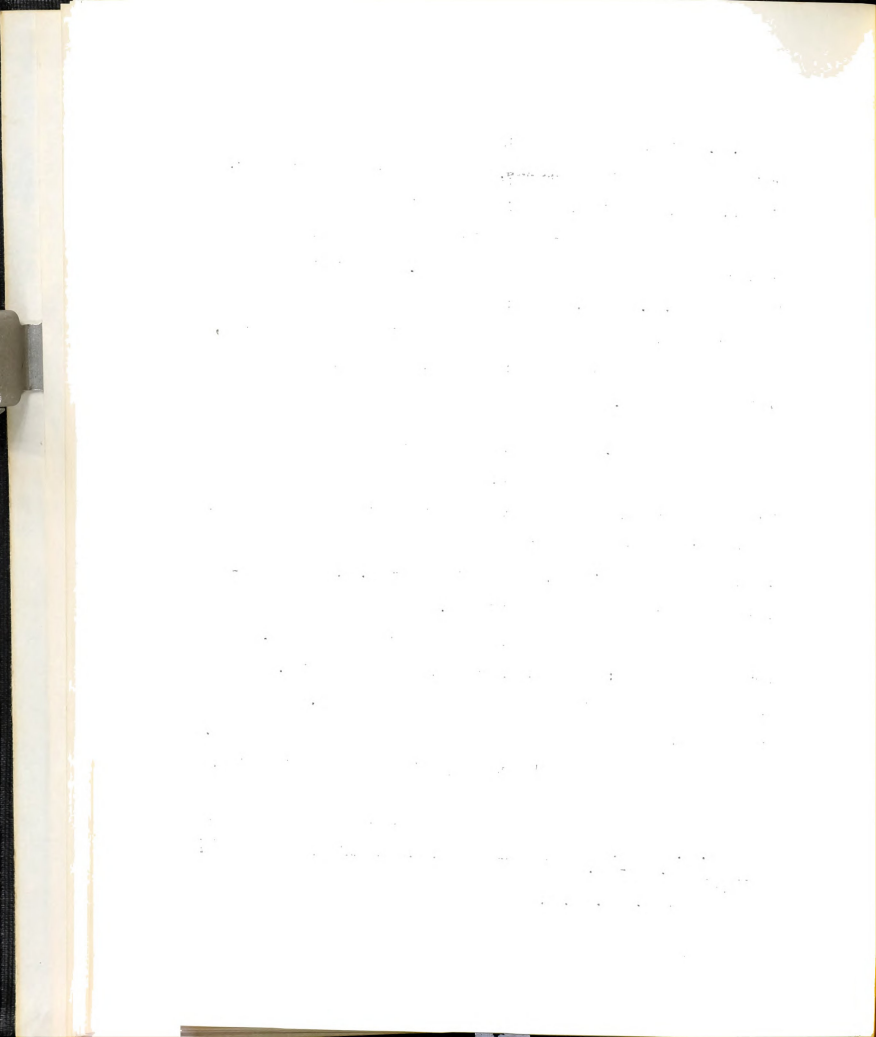
A. L. Bowley, a foremost British authority who made an actual estimate of national income asserts, "Whether we are considering individuals, groups or nations, there is the equation that the money value of goods and services produced or received equals the value of goods and services consumed or used plus value saved."²⁵ It is interesting to note that A. L. Bowley, the National Bureau of Economic Research mentioned above, and all the other authorities discussed in Chapter IV, who made actual estimates of national income, accept the wealth definition of income.

C. Characteristics of Income

In attempting to define income, some authors sought to establish its characteristics. These authors were more interested in the general nature of income and its identification for tax purposes than in the measuring of national income. In the mid 1920's, C. C. Plehn introduced his recurrency definition of income. "Income is essentially wealth available for recurrent consumption recurrently received. Its three essentials are: receipt, recurrence, and expendability. It is wealth looked at primarily from the point of view of time."²⁶ Wages and salaries, rents, interest and dividends have these characteristics. Gains and profits in a person's business, while they may be irregular,

²⁵A. L. Bowley, The Nature and Purpose of the Measurement of Social Phenomena, pp. 135-136.

²⁶Plehn, op. cit., p. 5.

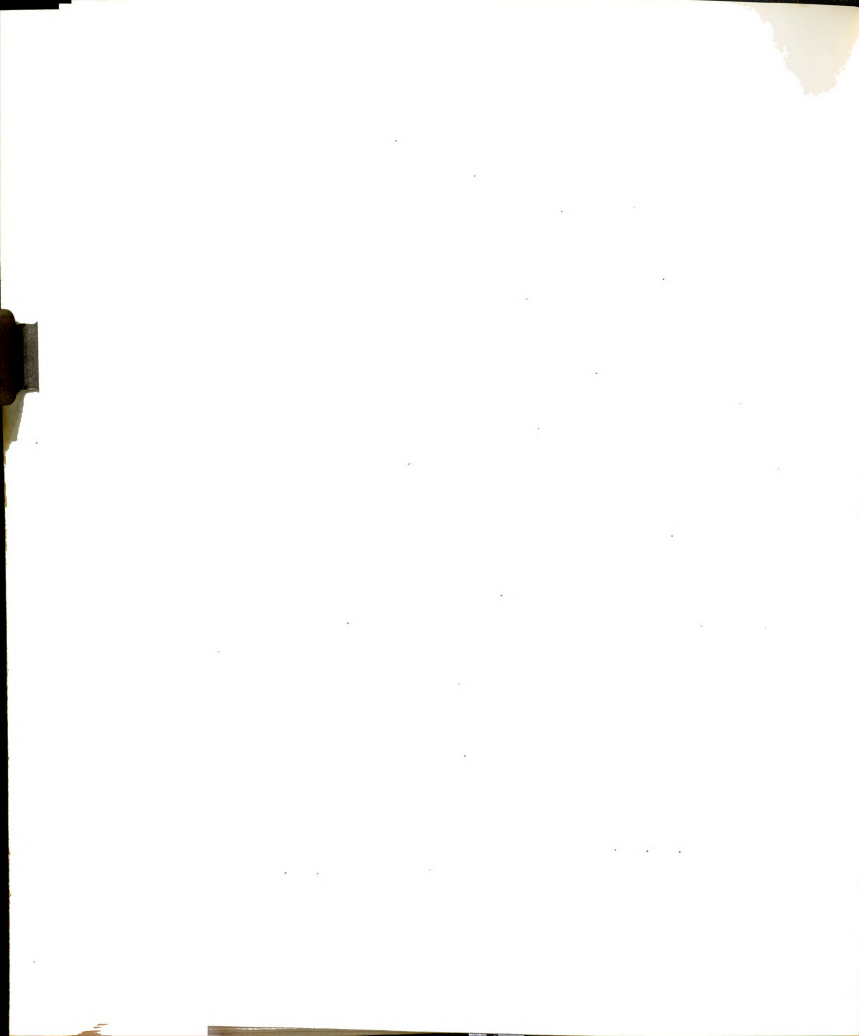


are expected to be recurrent and hence are income. What is not income is a gain outside of one's own business, such as the selling of a house and realizing a capital gain. Income can be measured only by the succession of receipts, and periodicity and measurability are of the essence of both.²⁷

Professor Fisher gave Plehn's criterion of recurrence credit for being of practical use in determining income for tax purposes and for working in normal cases. Thus Fisher argues that a person realizing a capital gain on the sale of a piece of real estate when the selling of property is not that person's vocation would normally not consume it but reinvest it, and hence it is not income. The criterion breaks down, however, in the case of a Rip Van Winkle who would drink up a windfall gain. The criterion again fails in the case of a Hetty Green who would reinvest all earnings even though they are recurrent, and in this case they would not be income. In this manner Fisher is able to fit Plehn's criterion into his own service definition. But after claiming it has practical value, he finds little use for it in theory. The problem is determining when income is recurrent. Plehn says that it need not be regular but how irregular can it be and still not be recurrent? Every windfall may reoccur.²⁸

²⁷Ibid., p. 12.

²⁸Fisher, "Comment on President Plehn's Address," p. 66.



Another authority, E. R. A. Seligman, maintains that the characteristics of income are separation and realization. Whether savings are income or not depends on these criteria. The five dollar interest payment on a one hundred dollar bond may be merged and added to the capital. It is income because it has been both separated and realized. Even though merged with the principal, "No one can question the fact that the gain, even though added to the capital, is pure income."²⁹ Also, if a herd of cattle grows, the increment in the value of the herd is income because it is both realized and separated. But, if a tract of timber becomes more valuable due to the forest growth, this increment is not income as long as the trees are uncut, as it has not been separated.³⁰

D. Subjective and Objective Income

While considerable controversy reigned over savings being or not being income, substantial agreement obtained among the authorities of this period that the true or ultimate income is psychic income. Fisher contended that the ultimate income was psychic and defined it as a stream of consciousness of any human being, that "Subjective income simply means one's whole conscious life. Every item of it comes via the body of the person."³¹ Many others expressed the same opinion,

²⁹E. R. A. Seligman, "Are Stock Dividends Income?" American Economic Review, September, 1919, p. 523.

³⁰Ibid., p. 524.

³¹Fisher, The Nature of Capital and Income, p. 176.



from which several are selected. Thus Davenport observes, "It is also evident that in the final analysis, all incomes are psychic income, the experiences of having wants gratified."³² And Seligman states, "We desire things. . .because of their utility. They can impart this utility only in the shape of pleasurable sensations or satisfactions. These alone constitute true income. . . .Income is the inflow of satisfaction from services and utilities. Income is therefore fundamentally pleasure or benefit income."³³

Although accepting the ultimate income as being psychic income, its immeasurability leads Flux to warn, "But it may be doubted whether the course selected--the segregation of the term 'income' so as to apply only to psychical income, ultimate income of satisfactions--is a course which, at present, if at any stage of development of economic discussion, is a feasible one."³⁴ Since psychic income can't be measured, these early authorities turned to money income as a measure of objective income. For example, W. I. King, who also accepted psychic income as the ultimate income, held that only economic income in the form of economic goods should be counted, and that the preliminary step in their measurement is computation in money value.³⁵ King thus used

³²See Hewitt, "The Definition of Income," p. 243.

³³Seligman, op. cit., p. 517.

³⁴A. W. Flux, "Irving Fisher on Capital and Interest," Quarterly Journal of Economics, February, 1909, p. 310.

³⁵King, op. cit., p. 457, and The Wealth and Income of the People of The United States, p. 117.



money as a common denominator for combining the differing flows of income. Hugh Dalton also considered the only practical measure of the value of production to be the sum of money paid for it.³⁶ These early authorities thus recognized that total social welfare could not be measured and that only that part of welfare that could lend itself to measurement in money, i. e., economic welfare as defined in Chapter I, could be measured.

E. Conclusion

Although Fisher's concept of income was stimulating, the majority opinion of these early authorities rejected his contention that savings are not income. Hewitt's attack on Fisher's position is quite devastating. In addition, it should be pointed out that it is hardly right to say that no satisfaction is derived from saving. As Gerhard Colm remarks, "But does the thrifty person really abandon all enjoyment until the moment he consumes his savings or the yield from them? Does he not 'enjoy' meanwhile a feeling of security or prestige, derived from the possession of this capital?"³⁷

General acceptance is given today to the concept that income is equal to consumption plus net savings. It is also generally accepted that while total social welfare is its total psychic income, only that part of it which can be put in money terms, i. e., economic welfare, can be measured.

³⁶Dalton, op. cit., p. 163.

³⁷Gerhard Colm, "Public Revenue and Public Expenditure in National Income," Studies in Income and Wealth, vol. I, pp. 176-177.



III. EARLY CONCEPTS OF NATIONAL INCOME

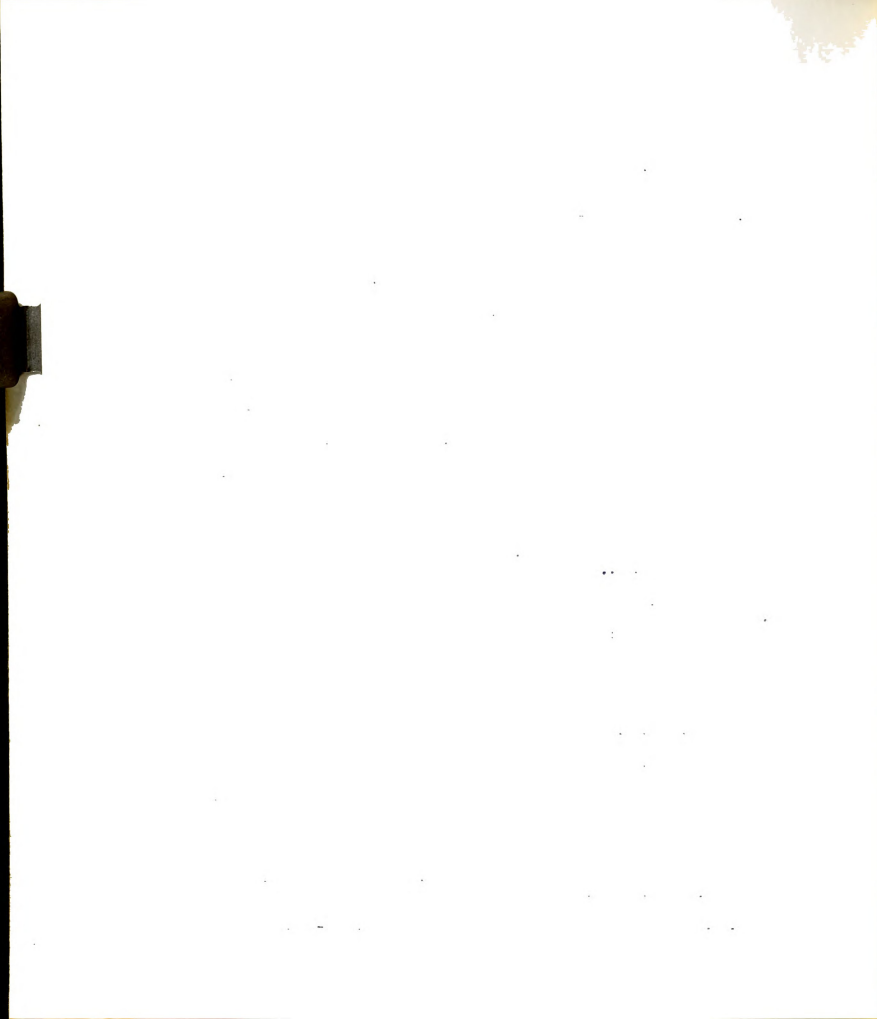
A. Economic Welfare--Money Valuation of Goods and Services

Having established the nature of income generally, there remains the problem of defining a nation's income or product. Although the general nature of income may be known, the problem still remains as to what should and what should not be counted in the national income, and once this decision is made, how to place a value on the items included. These questions give rise to considerable controversy when the treatment of the government sector is considered. Chapters VII, VIII and IX examine the controversy on the treatment of the government in detail.

In defining national income, most of these authorities confined their definitions to that part of social welfare previously noted as economic welfare, i. e., that part of social welfare that can be measured in money. Thus, in answer to its question, "Precisely what is the National Income: is it money, or commodities and services, or satisfactions?" the National Bureau of Economic Research took national income to consist of commodities and services for which a price is commonly paid.¹ H. J. Davenport calls the aggregate dividend of society the "distribuendum." The "distribuendum" does not include all of the values in life, but only those that are adapted to the price denominator.²

¹The National Bureau of Economic Research, Income in the United States, vol. I, pp. 3, 42.

²H. J. Davenport, The Economics of Enterprise, pp. 488-490.



And Pigou states,

Just as economic welfare is that part of total welfare which can be brought directly or indirectly into relation with a money measure, so the national dividend is that part of the objective income of the community, . . . which can be measured in money. The two concepts, economic welfare and the national dividend, are thus co-ordinate, in such wise that any description of the content of one of them implies a corresponding description of the content of the other.³

Although admitting the necessity of using money to measure the national income, some authorities questioned the validity of market price valuation of goods and services comprising the national income. The following quotation from Sir Josiah Stamp expresses his doubts:

The aggregate value of these products and services is only an aggregate of them in their existing relationship. . . . they do not have unchangeable value inherent in them. . . . Every value is merely a point of equilibrium. . . . The marginal significance of one pound to a rich man is different from what it is to a poor man; therefore, it is fallacious to say that a service that is rendered only to rich men is equal to and exchangeable for a service that is rendered only to poor men, simply because each cost one pound in money.⁴

A. L. Bowley also admits the necessity of using money to sum up the aggregate of commodities and services; nevertheless, he doubts whether "a perfectly definite meaning can be attached to total national income."⁵ He continues,

³A. C. Pigou, The Economics of Welfare, 4th ed., p. 31.

⁴Josiah Stamp, British Incomes and Property; the Application of Official Statistics to Economic Problems, p. 417.

⁵See Stamp, op. cit., p. 416.



. . . the total is more correctly a total estimated value of services rendered to, or commodities consumed by, the members of the nation, together with the addition for savings. . . . In such a total are included the services of an agricultural labourer at three pounds per month, and of a physician at the same price for a short visit, . . . an equal value of sixty quartern loaves of bread, or eighty ounces of tobacco. It is doubtful whether the same unit, one pound sterling, can in any real sense be used to measure such diverse and non-interchangeable services and commodities.⁶

These quotations drawn from Bowley and Stamp indicate an uneasiness about the ability of the market mechanism to measure true or psychic income. W. I. King expresses this same uneasiness when he observes that a two dollar concert seat may thrill one person and bore another, and that generally a dollar gives less service to the rich than to the poor.⁷ And Fisher baldly states, "The truth is that market valuation seldom, if ever, exactly registers utility to society."⁸ William Smart, in speaking of salaries paid by governments, observes, "We may be paying too much or too little; as in the case of monopoly goods in manufacture, this is beside the question."⁹ Thus there is substantial agreement that money valuation of the nation's production of goods and services does not necessarily measure its economic welfare.

In spite of these weighty doubts, Professor Davenport gives some support to market values. He comments that while some good things are

⁶Ibid., pp. 416-417.

⁷Willford Isbell King, "Income and Wealth, How Can They Be Measured?" American Economic Review, September, 1925, p. 457.

⁸Irving Fisher, "Reply to Critics," Quarterly Journal of Economics, May, 1909, p. 537.

⁹William Smart, The Distribution of Income, pp. 27-28.



not bought, on the whole it is true that "the good things in life are mainly for those that can pay for them. No one of us really believes that it is just as well to have \$500 a year as \$5,000."¹⁰ And Sir Josiah Stamp remarks that when all is said and done, "We come back to the fact that the sum total of wages, salaries, profits and interest presents a fairly comprehensible idea, free from important ambiguities, for ordinary comparative purposes."¹¹ And further on, he says, ". . . the figures we have are sufficiently stable and homogeneous in component exchange values for all ordinary purposes."¹²

B. National Income, National Dividend, and Social Income

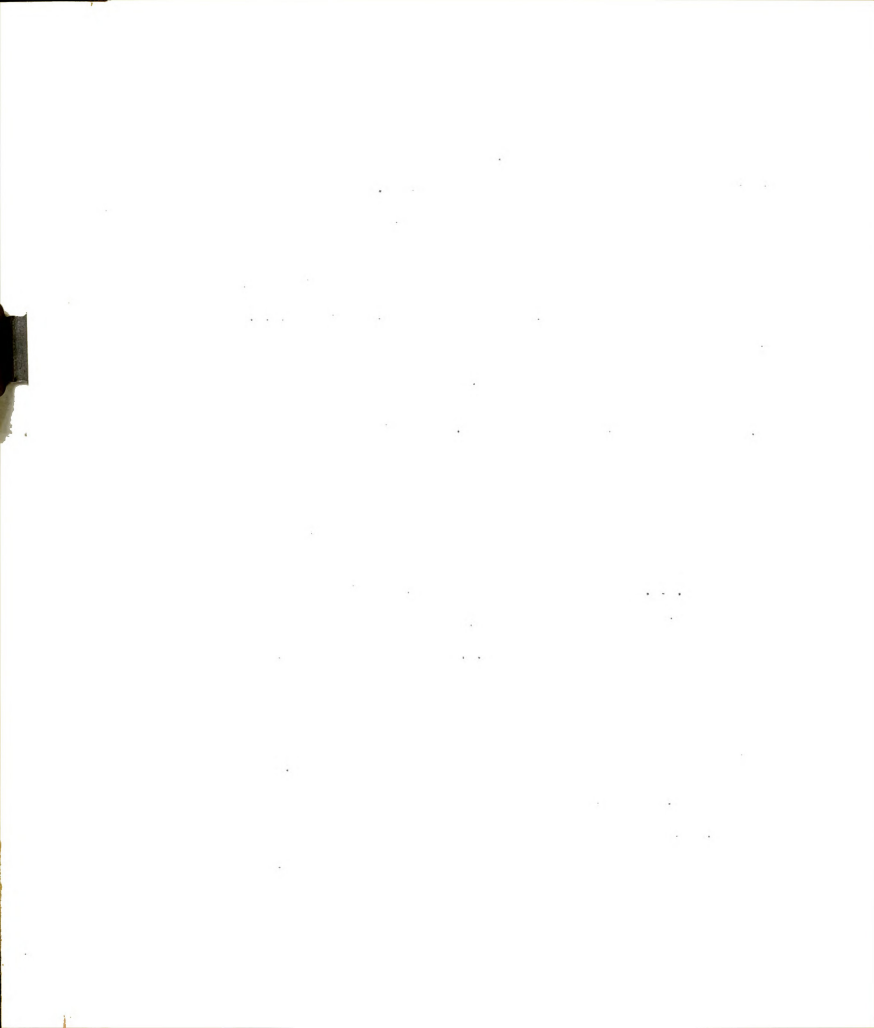
In defining national income, the wealth definition of income (commodities plus services) was accepted by most authorities. Most authorities also tended to omit specific reference to the government in their definitions. For example, Alfred Marshall defines the national income as the ". . . net aggregate of commodities, material and immaterial, including services of all kinds. This is the true net annual income or revenue of the country; or, . . . the National Dividend."¹³ David Friday also takes the same position as he observes,

¹⁰Herbert J. Davenport, The Economics of Enterprise, 2nd ed., p. 490.

¹¹Stamp, op. cit., p. 416.

¹²Ibid., p. 420.

¹³Alfred Marshall, Elements of Economics of Industry, p. 257.



The national income or dividend, . . . consists primarily of the sum total of goods and services produced for exchange by the labor of hand or of brain through the utilization of our national resources."¹⁴

W. I. King, William Smart and A. L. Bowley, who are discussed below, also subscribe to the wealth definition of national income. Of all these authorities, Bowley is perhaps the most concerned about the effect of government activity on national income, and, as discussed in Chapter IV, subtracts government transfer payments in his definition from the total social income, in order to avoid duplication.

Some authors consider the national income and the national dividend to be identical, while others differentiate them. Marshall and Friday hold them to be identities and, as Marshall says, they are "convertible."¹⁵ But King differentiates between the two. For him the national dividend is the aggregate amount of economic goods consumed, while the national income is the total amount consumed plus the amount saved.¹⁶ King asserts,

Savings or investments are intended to enlarge future dividends. If this large sum were subtracted from the total book income of the people, the remainder should be approximately equal to the value of the national dividend.¹⁷

¹⁴David Friday, "The Taxable Income of the United States," Journal of Political Economy, December, 1918, p. 952.

¹⁵Marshall, op. cit., p. 257.

¹⁶Willford Isbell King, The Wealth and Income of the People of the United States, pp. 119, 123.

¹⁷Ibid., p. 123.



King's national dividend would thus equate with Fisher's national income, which rules out savings as income.

In relating national income to social income, Bowley indentifies national income with social income. He observes, ". . . we may define Social Income tentatively as the aggregate of goods produced in a country . . . and of services rendered by persons in the country" ¹⁸

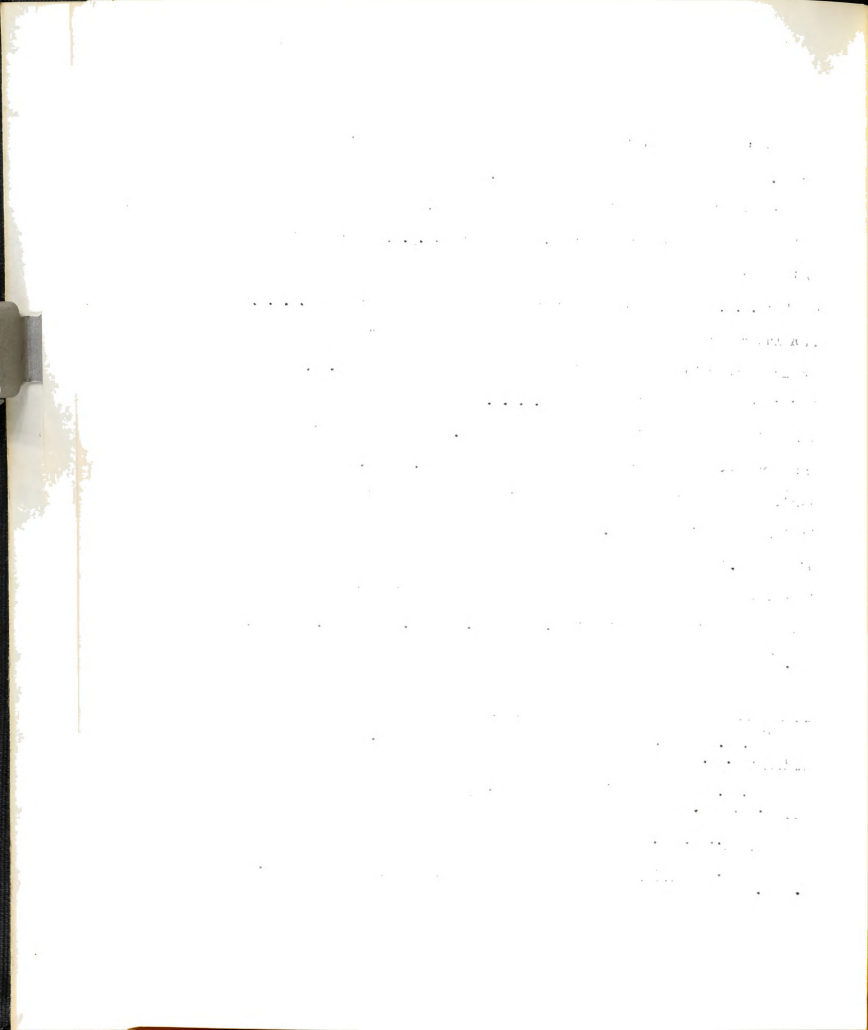
In a later work Bowley and Stamp give the equation that "social income equals consumption and saving in a year equals aggregate of U. K. individual and collective incomes," ¹⁹ This quotation reaffirms the equivalence of social and national income. But some authorities treat national income as one kind of social income. Thus, Marshall speaks of social income as being comprised of the summation of incomes in the society in question, "whether it be a nation or any other group of persons." ²⁰ King also accepts this approach by stating that society is composed of individual income recipients and "society is divided by geographical lines into districts, counties, states, provinces, nations, etc." ²¹

¹⁸A. L. Bowley, "The Definition of National Income," Economic Journal, p. 9.

¹⁹A. L. Bowley and Sir Josiah Stamp, Three Studies on the National Income, p. 127.

²⁰Ibid., p. 69.

²¹King, The Wealth and Income of the People of the United States, p. 119.



C. Identity of National Income and Product

The identity of the national income and national product was carefully pointed out by some economists. William Smart spoke of the two incomes: one, the sum of money incomes annually received; and second, the total commodities and services annually produced. "Thus the total money income really represents a total goods income, and each individual money income may be, economically, conceived of as representing an output of goods."²² Smart continues to explain that the money national income is a total of money payments handed over to the various classes of individuals during the year, and that underlying the money income is a real income in the form of goods and good things "which constitute the primitive income."²³ Another authority, Flux, warns that measuring the national dividend or product in terms of money may conceal its true nature and that the only way the nation's resources can be increased is by adding to the goods and services available.²⁴ King's position is essentially the same. Thus, "Except for a few minor differences, . . . the aggregate annual product must be identical in value with the aggregate annual income."²⁵ David Friday also declares that a "summary

²²Smart, op. cit., p. 19.

²³Ibid., p. 10.

²⁴A. W. Flux, "National Income," Journal of the Royal Statistical Society, Part I, 1929, p. 7.

²⁵See A. A. Young, "Nearings Income; King's Wealth and Income," Quarterly Journal of Economics, May, 1916, p. 585.



of individual incomes should correspond exactly to the total national product."²⁶ The fact that these early authorities considered national income and product to be identical indicates that complexities introduced by government economic activity were given little attention by them. With no government the national income and the national product would be equal. The official statistics of both Great Britain and the United States today, however, present data in which national income is less than national product by mainly the amount of indirect business taxes, a discrepancy introduced by the government.

In their discussion of the identity of the national product and national income, the division of the national income into its various shares was stated by many authors. For example, Marshall says,

This National Dividend is at once the aggregate Net product of and the sole source of payments for, all the agents of production within the country; it is divided up into Earnings of labour, Interest of capital, and lastly, the Producer's Surplus, or Rent, of land and of other differential advantages for production. It constitutes the whole of them and the whole of it is distributed among them.²⁷

And, according to Smart, national income consists of ". . . those things for which the money National Income is payment--the total of rents, interest, profits, wages, salaries, etc."²⁸

²⁶ Friday, op. cit., p. 953.

²⁷ Marshall, op. cit., p. 258.

²⁸ Smart, op. cit., p. 63.



In the process of identifying the national product and national income, Friday points to the possibility of arriving at the national income either by the summing up of products or the summing up of incomes.²⁹ "(1) by summing the net incomes of individual persons as owners, and (2) by summing net incomes from individual articles of wealth as sources. . ."³⁰ In the actual estimating of national income, the two methods have shown substantial agreement. Thus Bowley observes that Flux's estimates of the net output of land, mines and manufacture plus services of distribution plus services of houses equates with very fair success to the total of individual incomes obtained by other computers.³¹

D. Can Governments Consume?

In their discussions on the meaning of income, little attention was given to the nature of government by these early authors. Irving Fisher, however, while not specifically mentioning the government, has this to say: "As we have seen, fictitious persons have no net income, . . ."³² In constructing income accounts for either real or fictitious persons his procedure "is simply to make a complete list of the services and disservices which flow from each and every item of the assets and the

²⁹Friday, op. cit., p. 953

³⁰Irving Fisher, The Nature of Capital and Income, p. 142.

³¹A. L. Bowley, op. cit., p. 2.

³²Fisher, op. cit., p. 141.



liabilities."³³ In applying this principle to the corporation he finds that income equals outgo and hence there is no net income.³⁴ Undoubtedly, Fisher would contend that governments have no income, since receipts equal expenditures, and consequently they would be unable to consume.

Hugh Dalton, writing in 1925, takes the same position. In his discussion of the meaning of income he points out that:

The main purpose of the conception of income is to facilitate comparisons between the economic welfare of different persons Only persons have incomes, and for my present purpose, only real persons, in the sense of human beings, and not 'juridical persons,' such as institutions or public authorities. For only real persons can attain to economic welfare.³⁵

He cites Professor Cannan's opinion that institutions can receive true income. According to Cannan, "If a hospital or school, for example, possess land or Consols, the income is perfectly genuine income. It may be spent on nursing the sick or on teaching the young, but it will not be regarded as part of the income of those persons"³⁶

Dalton denies Cannan's position and contends that the nursing or education is income to those persons receiving these services. He considers the government in the same light; it is just an instrument

³³Ibid., p. 139.

³⁴Ibid., p. 138.

³⁵Hugh Dalton, The Inequality of Incomes, p. 162.

³⁶Ibid.



for transferring income from the taxpayer to the beneficiaries of public expenditure. Again referring to Cannan he says that Cannan appears to be considering the question of who has control of the income. "I, on the other hand, am considering who gets economic welfare from the enjoyment of the income."³⁷ Thus Dalton takes the position that governments can't consume.

³⁷Ibid., p. 163.



IV. THE VALUATION OF THE GOVERNMENT PRODUCT

BY EARLY AUTHORS

In this chapter the treatment of government expenditures and revenues by the early authors in this field will be reviewed. The first three studies to be examined represent individual attempts to present estimates of the aggregate income of the United States. Of these studies, the first comprehensive effort to measure national income was that of Charles B. Spahr who, in 1896, published his book entitled The Present Distribution of Wealth in the United States. In 1912, Frank H. Streightoff set forth a careful analysis under the title of The Distribution of Incomes in the United States, and, in 1915, Willford I. King followed with The Wealth and Income of the People of the United States.

These three publications by individuals were followed by the entry of the National Bureau of Economic Research into the field. The Bureau, chartered in 1920 to conduct quantitative investigations into subjects that affect public welfare, felt that any such analysis was beyond the labor of one individual, and decided to make the study of the national income of the United States its first work. It published its first volume in 1921; entitled Income in the United States, it is a summary of its findings. In 1922 a second volume was published under the same title; it gave a detailed analysis showing the sources and methods used in getting its results.

All the studies mentioned above were American attempts to measure national income. Several English economists also made contributions in this area. The most notable of these were A. L. Bowley and Sir Josiah Stamp, who published their work called The National Income, 1924, in the year 1927. Their treatment of the government product will be included in the reviews below.

A. Charles B. Spahr

In his book¹ on the distribution and wealth of the United States, Spahr is primarily concerned about welfare problems which, to be treated adequately, require knowledge of aggregate national income. He estimates the national income by summing the net product of the various industries contributing to the national income.² The net product of each industry is the sum of the factor payments it makes; "the income from property, superintendence and labor combined."³ Thus, while income is classified by industries, the point of view is always that of the individual income recipient. The question is not how much does the industry earn, but how much does the individual part-owner of the industry draw from it. So the net product of an industry is broken down by Spahr into wages and profits paid out and, consequently, the

¹Charles B. Spahr, The Present Distribution of Wealth in the United States.

²Ibid., Ch. V.

³Ibid., p. 119.

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national income is equal to the sum of incomes paid out. In the case of agriculture, however, the product approach is used. To avoid double counting, the value of grain fed to stock is deducted from the gross product. Increases in farm stock are added and also included in the farm product are the value of lumber sold from the farming districts and the rental value of the houses occupied by farmers.

No special treatment is accorded the government product. Spahr considers the occupation of teaching as a separate industry and has an 'all other' category which could catch incomes paid out by the government, but is not elaborated on in the text. Both direct and indirect taxes are included in this summation of incomes. In determining the contribution of the manufacturing industry, he states, "The profits of manufacturers, . . . including interest, rent, taxes and earnings from superintendence were approximately two-thirds of the wages of employees."⁴ Hence, indirect taxes are not deducted from the product of business. In discussing the justice of indirect and direct taxation, he observes, "The incomes described in the preceding chapter [Chapter V] were incomes prior to taxation."⁵ Thus, no deductions are made for direct taxes (property taxes for Spahr) either. Since Spahr does not deduct any taxes, his national income is the equivalent of the current net national product.

⁴Ibid., p. 98.

⁵Ibid., p. 133.



While Spahr made no strenuous effort to include government as an industry and a source of income, his results could hardly be invalidated on this ground, as the role of government in economic activities at this time was rather insignificant. If we follow King⁶ and accept government revenue as a measure of its contribution to national income, by Spahr's figures⁷ the share of government in national income would be roughly four per cent for the national government, while King's figures⁸ for the same year, 1890, give the share of government to be 6.5 per cent, which includes federal, state and local governments. Both of these figures indicate that the government's share of the national income is relatively small at this time. Furthermore, since Spahr approaches his estimate from the factor cost side, that part of government product represented by purchases from industry would be included in incomes paid out in industry. Thus it appears that little distortion takes place in Spahr's estimate of national income due to government economic activity.

⁶Willford Isbell King, The Wealth and Income of the People of the United States, p. 129.

⁷Spahr, op. cit.; National income for year of 1890 is 10,800,000,000, p. 104, and national revenue for year of 1890 is 403,000,000, p. 140.

⁸King, op. cit., pp. 138-40.



B. Frank Streightoff

In 1912 Frank Streightoff published his study called The Distribution of Income in the United States. As in the case of Spahr, Streightoff is concerned with welfare aspects of the distribution of income and the need for better income statistics. In fact, his book might well be considered a plea for better income statistics. The aim of the essay was to "depict the deplorable dearth of information on a subject so vital to the welfare of the country."⁹ And further on he continues, "Knowledge of the distribution of income is vital to sane legislative direction of progress. In a form definite enough for practical use, this knowledge does not exist. No time should be wasted in obtaining this knowledge."¹⁰ He also points to the need for income statistics in determining income tax rates.¹¹

Streightoff uses the returns of labor and property in order to determine the distribution of income. In arriving at his income figures, he gives little attention to the problems involved in the valuation of the government product. However, in discussing property incomes he notes that it is impossible to determine the number of persons receiving income from property, that "it is not known how many persons are

⁹Frank Streightoff, The Distribution of Income in the United States, p. 152.

¹⁰Ibid., p. 155.

¹¹Ibid., p. 16.



interested in real estate, how many are holders of industrial or railroad stocks, or how many own United States bonds."¹² Thus, Streightoff would count interest on the national debt as individual income. Of the studies reviewed in this chapter, Streightoff's is undoubtedly the least significant as the emphasis is on distribution of income rather than on determining a national income aggregate. Not once does Streightoff indicate or imply that national income is equal to aggregate income of individuals.

C. Willford Isbell King

King's book, called The Wealth and Income of the United States, was published in 1915. He reviews in it two methods of approach to estimating national income: First, the aggregate income can be obtained by summing individual incomes, and second, by tracing the process of production from nature to the final consumer. While he uses the method of summing individual incomes for the 1910 estimate, he felt that the product method was more reliable, and therefore, it is the principal method used by him.¹³

In following through the process of production, King is aware of the government contribution to production. He states, "Incidentally, industry is kept properly in operation through the aid of physicians,

¹²Ibid., p. 44.

¹³King, op. cit., pp. 126-7.



teachers, lawyers, clergymen and government officials. Their pay must be added to the expenses of production."¹⁴ Furthermore, "The services of the government were assumed to be worth the amount paid for running the government."¹⁵ Thus King includes all taxes in his national income estimates and no allowance is made for government intermediate product and transfer payments. His estimate would therefore equate with the current official net national product at market prices. In dividing national income according to its origin, the government is treated as a separate industry and its contribution to national income is given in both absolute and percentage figures.¹⁶ Thus he takes special consideration of a

productive activity not usually considered as industrial, that is, the work of the government. The rising cost of this institution has caused much comment, largely adverse in nature, concerning the extravagance of government and the waste of the peoples' money."¹⁷

He observes that the justification of increasing government expenditures lies not in the growth of the country but must be made on the ground that the government is taking over functions formerly left to private industry, and that the citizen of 1910 receives vastly greater services from his government than the citizen of 1850.¹⁸

¹⁴Ibid., p. 127.

¹⁵Ibid., p. 129.

¹⁶Ibid., pp. 138-9.

¹⁷Ibid., p. 142.

¹⁸Ibid., p. 143.



King also examines the distribution of income among the factors of production. The income shares consist of rent, interest, wages and profits. To arrive at these shares, he calculates independently wages, rents and interest, and enters the remainder as profits. Thus, he takes the national income attained through the product method of estimation and divides this up among the various shares by using profits as a residual. He feels that these estimates, although admittedly rough, are fairly close to the truth.¹⁹

D. The National Bureau of Economic Research

The first organized group to tackle the problem of measuring national income was the National Bureau of Economic Research. As has been mentioned above, the first volume published in 1921 summarized the findings and the second volume published in 1922 explained the sources and methods. Instead of pinning its faith on a single estimate, the Bureau made two independent estimates, one by sources of production under the supervision of Willford I. King, and the other by incomes received, under the supervision of Oswald W. Knauth. Both estimates were made for the years of 1910 to 1918 inclusive. The results of these independent computations showed variations which went from a minimum percentage difference of 0.0 to a maximum percentage difference of 6.9. This low amount of variation led the

¹⁹Ibid., p. 157.



Bureau to feel that the agreement between the two estimates was "remarkable."²⁰

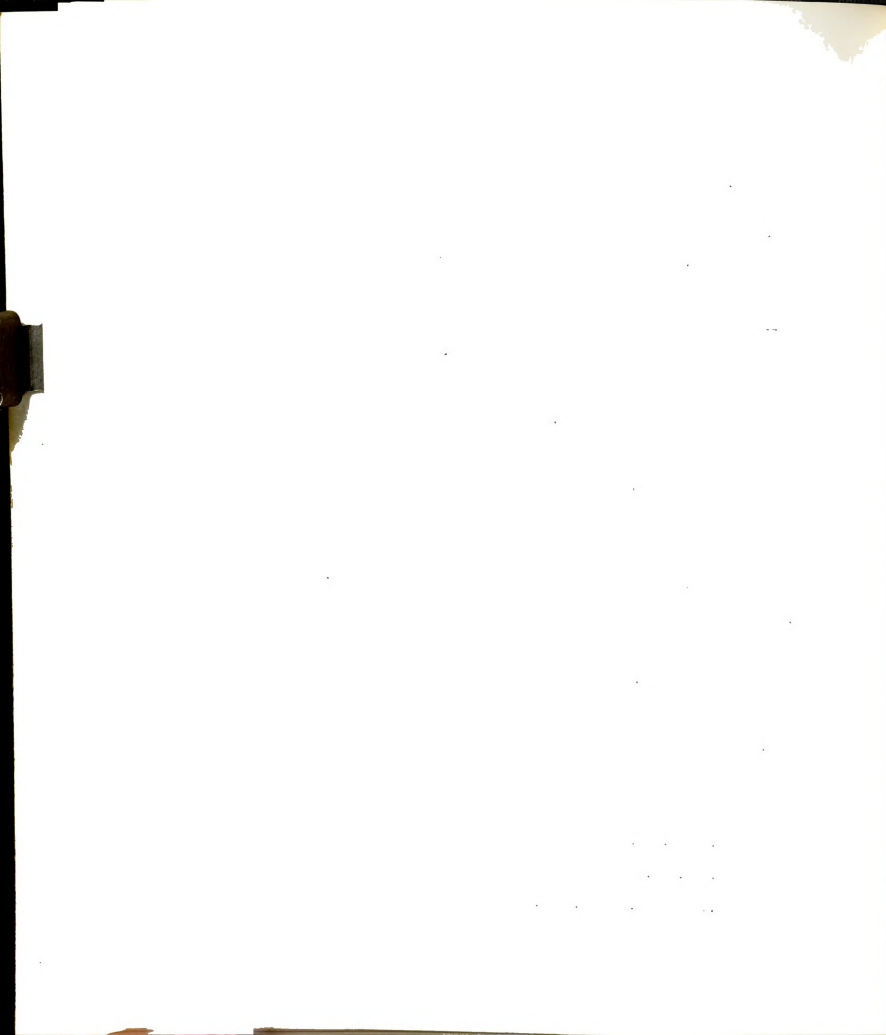
1. Treatment of taxes and government expenditures in estimate by incomes received. In arriving at this estimate, taxes are not deducted from personal incomes but income tax payers are allowed to deduct taxes--other than inheritance taxes, federal income taxes and special assessments for the improvement of real estate.²¹ The net earnings of corporations are determined by subtracting both excise and income taxes from their total reported income.²²

Incomes paid to individuals by the government count on the same basis as other incomes. Taxes collected from personal incomes by the government are not deducted, on the grounds that those who receive income from the government are rendering current services, such as school teachers, whose value forms a part of national income. That is, the taxes paid by the community are the price paid for the services of the school teacher, just as the fees paid to the physician are the price of his services. The payments made by federal, state and local governments to their employees and creditors are made in the form of wages, salaries, pensions, gratuities and interest, and are included in

²⁰The National Bureau of Economic Research, Income in the United States, vol. I, p. 12.

²¹Ibid., p. 49.

²²Ibid., and vol. II, p. 216.



this estimate whether the funds for payment came from taxes, loans or other receipts.²³ Pensions and gratuities are included in both estimates even though they may be best thought of as payments for services rendered in the past.²⁴ In the case of interest on the war debt (to be discussed in greater detail below), the question is whether interest paid in later years represents a payment for current service or just a redistribution of the national income from taxpayers to bondholders. Hence, in deducting some taxes and not others, it is uncertain whether the estimate by income received is too large or too small.²⁵

2. Treatment of taxes and government expenditure in the estimate by sources of production. In making this estimate, the net value product of any industry is assumed to be equal to the payments made to the factors engaged in the industry--employees, employers and property.²⁶ The same criterion is applied to the product of the government as to other industries, i. e., what book or money income do individuals derive from the government? Thus the net value product of the government is equal to the sum of wages, salaries, pensions, gratuities and interest paid to individuals. The government pays no dividends.²⁷ This value product of government--federal, state and local--was added to total product in lieu of taxes which were deducted

²³Ibid., and vol. I, pp. 49-51.

²⁴Ibid., vol. II, pp. 215, 270, 291.

²⁵Ibid., vol. I, p. 50.

²⁶Ibid., vol. II, p. 4.

²⁷Ibid., p. 210.



from industry.²⁸ No allowance was made for services rendered to the community by parks, roads, etc., other than the income payments made to those who worked upon them.²⁹

The Bureau observes that the ideal method to determine net value product of any industry would be to deduct from the gross value of its product not only the cost of materials used but also such payments as freight and insurance charges, bank interest, and those taxes which represent the value of government aid and protection furnished the industry. A problem arises out of the impossibility of distinguishing between those services rendered to business (intermediate product) and those serving the people directly (final product). Because of this difficulty, it is assumed that the taxes levied against each field of business are equivalent to the value of service rendered to that industry by the government. This assumption could be far from the truth and thus lead to error in national income totals. If business pays more in taxes than it receives in government services, the income totals should be increased by this amount. The Bureau feels that there is just grounds for believing error of underestimation of income arises here.³⁰

²⁸Ibid., vol. I, p. 49.

²⁹Ibid., vol. II, p. 249.

³⁰Ibid., pp. 4-6.



In a theoretical discussion of the treatment of taxes in estimating the value of products of industry, the Bureau argues that taxes paid by corporations which are shifted should be deducted, as they are added to the price of a product in the same manner as freight charges. The imposition of these taxes does not add anything to the amount of commodities and services which tax-paying enterprises contribute to the national product. If the government is credited with the service it provides out of the receipts from these taxes, these taxes must be deducted from the value product of the industries concerned, otherwise, there will be double counting.³¹

In the case of a tax which can't be shifted --a tax which the taxpayer cannot add even in part to the selling price of his product--the tax should not be deducted from income, as the imposition of the tax does not either increase or decrease the size of the national income, but merely the proportions among the items that enter into the aggregate. In other words, a tax on the profits of a corporation does not reduce the contribution of the corporation to the national income, and if this money is now spent by the government in the hiring of a school teacher, the national income is increased by this amount and no double counting is involved. The government spends the money in place of the corporation.³²

³¹ Ibid., vol. I, pp. 52, 53.

³² Ibid., pp. 54, 55.

The conclusion of this theoretical discussion is that taxes that are added to selling prices should be deducted, and taxes that are not, should not be deducted; this does not solve the statistical problem involved in estimating income by sources of production, as it is not possible to say how much taxes are shifted. The deduction of all taxes, however, leads to underestimation in the estimate made by this method.³³ By deducting business taxes from the value of the product, the Bureau avoids the discrepancy between national income and net national product, and these two measures of national income become theoretically identical.

3. Interest. The National Bureau of Economic Research is well aware of the problem presented by interest payments. Interest on consumer loans is not deducted from income, as a service is rendered to the recipient of the loan--that is, the privilege of postponing payment. The Bureau decided to keep interest payments on the national debt on the same grounds, i. e., that a service is being rendered to the taxpayers even though it is recognized that such payments do not add to the physical product. It is further pointed out that if the taxpayers feel that the privilege of not paying off the debt is not worth the interest charge, they have the option of paying off the debt.

³³Ibid., p. 55.



As the national income is composed of commodities and services, this service must be counted in order to arrive at the total income of the country.³⁴

E. Arthur L. Bowley and Sir Josiah Stamp

In 1922 Bowley wrote an article³⁵ on the definition of income in which he centered his attention on the problems introduced by the growing importance of the government. The main question, he says, is, "To what extent do taxation and rates lead to duplicate reckoning?"³⁶

Bowley holds that taxes paid by an individual which go to pay for such things as policemen's services should be added to an individual's income, as the individual gets the benefits of these services; however, he questions whether education and pensions are incomes of both the taxpayer and of the pensioner and receiver of education. He also doubts that interest on war loans is income both to the taxpayer and interest receiver.³⁷ In looking for a solution to the problem of double counting he points to Hugh Dalton, who states, "No elements of real income can usefully be said to correspond to those elements of money income which the recipient is compelled to pay in taxation to public authorities."³⁸

³⁴Ibid., vol. II, pp. 12-13.

³⁵Arthur L. Bowley, "Definition of National Income," Economic Journal, March, 1922, pp. 1-11.

³⁶Ibid., p. 5.

³⁷Ibid., pp. 5-6.

³⁸Hugh Dalton, The Inequality of Incomes, p. 165.

Therefore, "It is better frankly to exclude taxes from the income of taxpayers and to include benefits from public expenditure, in so far as they can be estimated, in the income of the beneficiaries."³⁹ This method would count only once the interest on the debt, pensions, education, parks, and the like. Bowley notes that if the value of public services is taken as equal to their cost, and duplication avoided on Dalton's principle, the answer could be gotten more easily by taking incomes gross and deducting from the total all incomes from public sources. This method would exclude salaries of policemen, teachers and so forth, on the ground that they were already included in the incomes of those who paid them. Consequently, he objects to Dalton's method because it would mean that in a completely socialistic state there would be no income.⁴⁰

In summing up his argument, Bowley defines social income as equal to consumption goods and services and saving. The value of goods includes indirect taxation, as the purchaser of cigarettes pays what they are worth to him and he is indifferent as to whether the state or producer gets the money. The manufacturer pays for materials, wages, salaries, profits and taxes. Social income is not equal to the aggregate of individual income because parts of the "Social Income" may be counted twice. Hence,

³⁹Ibid., p. 166.

⁴⁰Bowley, op. cit., p. 7.



Social income then equals consumption and saving in a year equals aggregate of individual's incomes (as ordinarily reckoned, say, for income tax), less incomes received for no services or for services not rendered in the year in question (old age pensions, soldiers' pensions, interest on National Debt).⁴¹

In their study of The National Income, 1924, Bowley and Stamp use the sum of individual incomes to arrive at aggregate income. As their first definition of total income they take the "sum-total of the wages, salaries, rental values, profits and interest," and then "point out in what connexion it cannot be strictly applied."⁴² The reasoning used in this work is the same as in Bowley's article discussed above, which means that their primary concern is the avoidance of the possibility of double counting due to government taxing and spending. They point out that the summation of money incomes gives a

. . . misleading picture of realities when we consider the value of real economic goods and services produced, because they include certain income which is paid out of the proceeds of taxation, and since taxation is not a deduction in computing the income of the payers, such income is duplicated in the aggregation.⁴³

Pensions and interest on the war debt are the most important of these items that may be double counted, and these items have become increasingly significant. They are transfers of money income for which the recipient renders no current economic service. The social income is

⁴¹Ibid., p. 10.

⁴²Arthur L. Bowley and Sir Josiah Stamp, The National Income, 1924, 3rd part of book entitled Three Studies on the National Income, p. 125.

⁴³Ibid., p. 127.



then the aggregate of individual and collective income, less incomes received by compulsory deductions from other incomes in return for no services or services not rendered in the year in question (i. e., interest on national debt and pensions).⁴⁴

⁴⁴Ibid.

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V. THE GROWING IMPORTANCE OF THE GOVERNMENT SECTOR

Fundamentally, the economy can be divided into the private sector and the public sector, both of which make their contribution to the national product. Milton Gilbert and Dwight Yntema express this explicitly in their definition of national income: "National income is the measure of the value of the net output of commodities and services produced by the private and public enterprises of the economy."¹ Thus, the national income is equal to private production plus public production. In this study attention will be centered on the problems involved in measuring the production of the government.

During this period under study, roughly 1890 to 1953, a great shift took place in the relative importance of these sectors. In the beginning of this period, the role of the government was quite minor. From this insignificant position, the government climbed in importance throughout the period so that by 1953 its participation in the economic affairs of the nation greatly affects the nation's well-being. This study is concerned with its proper evaluation.

Of the early economists who were making estimates of the national income, Charles B. Spahr's treatment of the government product was the

¹Milton Gilbert and Dwight Yntema, "National Income Exceeds 76 Billion Dollars in 1940," Survey of Current Business, June, 1941, p. 12.



most inept.² While he was hardly aware of the problems presented in measuring the government product, W. I. King, writing in 1915, treats the government as one branch of industry.³ Even at this early period he was concerned with the encroachment of the government on the economic activities of the nation, as is shown by his statement to the effect that: ". . . the percentage (of total value of national income) expended for public purposes having nearly doubled since 1850. This seems to indicate a trend in the direction of state socialism."⁴ Arthur Bowley wrote an article in 1922 which centered its attention on the problems involved in measuring national income which have arisen because of the great growth of government. He says,

The great increase of the share of income taken by the state makes necessary a reconsideration of the methods which were sufficient for the computation of aggregate income when the interest on the National Debt was an inconsiderable percentage of that aggregate.⁵

It has been stated above that great expansion of government activity in the economic affairs of the nation took place during the period under study. It is the purpose of this chapter to demonstrate the extent of this expansion by examining some of the major indicators of this expansion.

²Spahr, The Present Distribution of Wealth in the United States, Ch. XX.

³Willford Isbell King, The Wealth and Income of the People of the United States, p. 142.

⁴Ibid., p. 140.

⁵Arthur L. Bowley, "Definition of National Income," Economic Journal, March, 1922, p. 1.

A. Income Originating in the Government Sector

One indication of the extent of government participation in the economic affairs of the nation is the amount of income which originates in the government sector, i.e., the value product of the government. King defines the value product of the government as being equal to the expenses of government.⁶ This definition is the most inclusive of any discussed below.

KING'S 1915 DATA FOR SELECTED YEARS:⁷

Year	Value Product of Government--	Percent of Total Value Product
	Federal, State, Local (Millions of Dollars)	
1890	784.9	6.5
1900	1,469.0	8.2
1910	2,591.8	8.5

His figures show increases in both the amount of government value product and its percentage of the total value product. The trend as shown by these figures is to be a continuing one.

The definition of the value product of the government was continuously narrowed. In the study made by the National Bureau of Economic Research it is defined as "the total wages, salaries, pensions, gratuities and interest paid to private individuals."⁸ In its study the

⁶King, op. cit., p. 129.

⁷Ibid., pp. 138, 140.

⁸National Bureau of Economic Research, Income in the United States, vol. II, p. 210.



Bureau made estimates which run from 1909 to the year of 1918 inclusive.

NATIONAL BUREAU OF ECONOMIC RESEARCH, 1922
DATA TAKEN FOR SELECTED YEARS⁹

Year	Value Product of All Government (Millions of Dollars)	Percent of Value Product Originating in Government
1909	1,440	5.00
1910	1,542	4.85
1918	5,353	8.87

Again, the figures point to an increase in government activity with the income originating in government rising from five per cent to almost nine per cent. A substantial part of this increase occurred with the entry of the United States into World War I.

In a later study, the National Bureau of Economic Research, using the same definition¹⁰ of the value product of government, gives estimates which show the upward trend in the role of the government to be continuing.

THE NATIONAL BUREAU OF ECONOMIC RESEARCH, 1930
DATA TAKEN FOR SELECTED YEARS¹¹

Year	Value Product of All Government (Millions of Dollars)	Percent of Total Value Product Originating in Government
1910	1,678	5.34
1918	6,278	10.39
1920	5,311	7.18
1925	6,130	7.48

⁹Ibid., p. 222.

¹⁰National Bureau of Economic Research, The National Income and its Purchasing Power, pp. 42-43.

¹¹Ibid., p. 371



The per cent of value product originating in government increased from about five per cent in 1910 to almost seven and one-half per cent in 1925, although this last figure shows a decline from the war year of 1918, in which it was over ten per cent.

The United States Department of Commerce, in making its estimates, uses the narrowest definition of government value product. This value product is measured like the value product of other industries, that is, by the factor cost incurred; however, for the government, factor costs are confined to the compensation of government employees.¹² A study of the amounts and percentages of income originating in the government

THE UNITED STATES DEPARTMENT OF COMMERCE, 1954
DATA TAKEN FOR SELECTED YEARS¹³

Year	Value Product of All Government (Millions of Dollars)	Percent of Total Value Product Originating in Government
1929	4,335	5.8
1932	4,445	12.1
1940	7,778	10.7
1945	35,156	20.3
1953	31,437	11.4

emphasizes again the ever expanding part played by the government. From 1929 to 1953 the income originating in government almost doubled, even though the 1953 figure fell sharply from the war year of 1945.

¹²United States Department of Commerce, National Income, A Supplement to the Survey of Current Business, 1954 ed., p. 53.

¹³Ibid., pp. 22-23, 174-5.



Because of the ever narrowing definition of government value product, a true comparison cannot be made of its increase during the period under study. In going from King's figure of 6.5 per cent for the government value product in 1890, to the figure of 11.4 per cent for 1953, a conclusion drawn to the effect that income originating in government had almost doubled in this period would grossly understate its increase. King's figures include all government expenses, while the latter figure is government expenses for compensation of employees only.

B. Total Government Expenditures

So far, only those government expenditures considered to be the government value product have been examined. But the government affects the level of income and production through its total expenditures, i. e., the product it buys from the business sector as well as the factor payments it makes. The tables below illustrate the terrific increase in government spending. From less than one billion dollars in 1890, total government spending increased to more than one hundred billion dollars in 1953, an increase of more than one hundred-fold. The general trend has been ever upward in spite of temporary drops in spending, such as the fall from the World War II peak of 103 billions to the post war low of about 44 billion dollars in 1947.



WILLFORD ISBELL KING:¹⁴
TOTAL GOVERNMENT EXPENDITURES FOR SELECTED YEARS

Year	Government Expenses (Federal, State, Local) (Millions of Dollars)
1890	784.9
1900	1,469.0
1910	2,529.5

HISTORICAL STATISTICS OF THE UNITED STATES, 1789-1945:¹⁵

Year	Government Expenditures for Selected Years (Millions of Dollars)		
	Total	Federal	State and Local
1890	878	318	560
1902	1,501	485	1,016
1913	2,478	725	1,751
1932	12,941	4,535	8,406
1942	42,431	32,397	10,034

¹⁴King, op. cit., p. 138.

¹⁵Bureau of the Census, Historical Statistics of the United States, 1789-1945, pp. 299, 314.



THE UNITED STATES DEPARTMENT OF COMMERCE:¹⁶

Year	Government Expenditures for Selected Years (Millions of Dollars)		
	Total	Federal	State and Local
1929	10,227	2,645	7,699
1934	12,830	6,394	8,069
1944	103,072	95,585	8,434
1947	43,864	31,089	14,513
1953	102,531	78,059	27,289

Not only has total government spending increased in amount, but its percentage share of the total gross national product rose from 6.5 per cent of the national income in 1890¹⁷ to 23.4 per cent of the gross national product in 1953. Most of this increase came about through

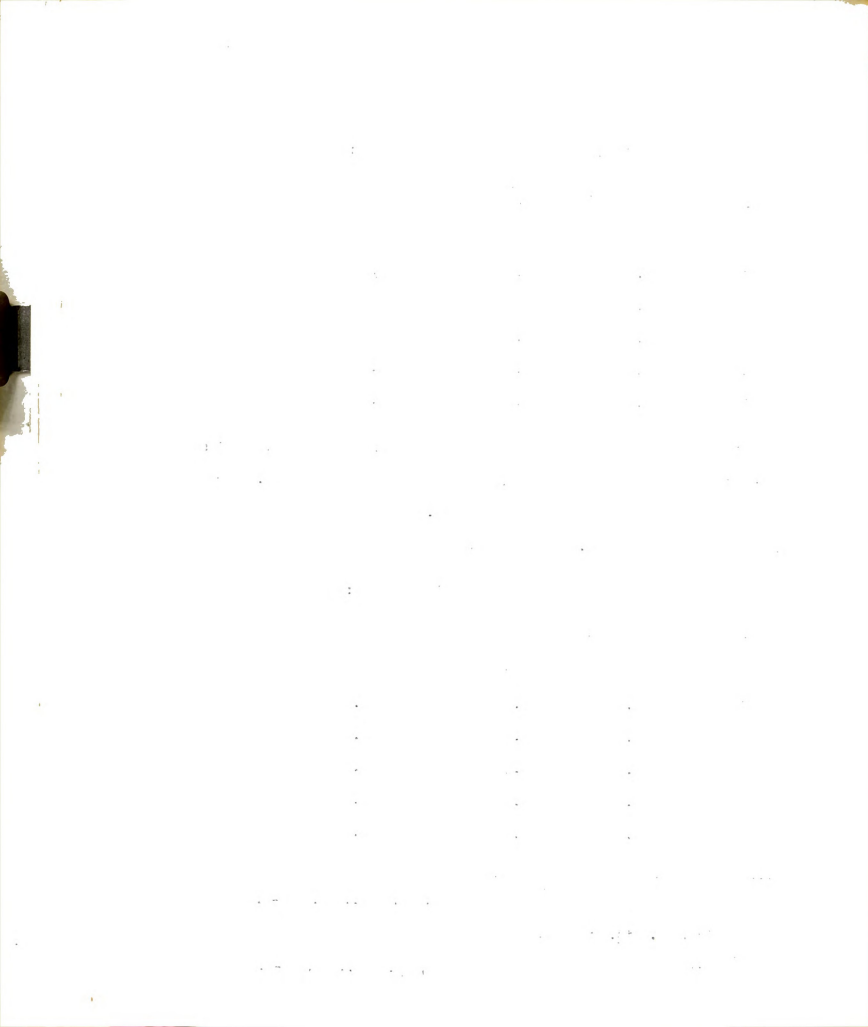
THE UNITED STATES DEPARTMENT OF COMMERCE:¹⁸

Year	Government Expenditures as Percent of Gross National Product for Selected Years		
	Total	Federal	State and Local
1929	8.1	1.3	6.9
1940	14.0	6.1	7.9
1943	46.0	42.2	3.8
1947	12.3	6.8	5.9
1953	23.4	16.5	6.9

¹⁶United States Department of Commerce, op. cit., pp. 172-3.

¹⁷King, op. cit., p. 140.

¹⁸United States Department of Commerce, op. cit., pp. 22-3.



the growth in the federal government component. While total government expenditures rose from 8.1 per cent of the gross national product in 1929 to 23.4 per cent in 1953 and momentarily took the fantastic proportion of 46.0 per cent of the gross national product in the war year of 1943, the upward trend for this period must be attributed to the federal government, which enlarged its take from 1.3 per cent to 16.5 per cent. It is interesting to note that state and local spending shows remarkable stability in percentage of gross national product; it ended the period at 6.9 per cent, which was the same as 1929. These figures place the percentage increase in total government spending squarely upon the federal government.

Why did this expansion of government activity come about? King notes that the increasing government expenditures cannot be justified on the ground that the country is growing, as the growth in average income was far outstripped by the growth in government expenditures; that while average income quadrupled, the average tax bill--expenses of government--grew by seven times in the period from 1850 to 1910. This growth is due to the fact that the government is performing more functions for the community.¹⁹

One of the functions which helped enlarge government spending is the increased importance of transfer payments. Total government expenditures for pensions, bounties and gratuities quintupled in the period

¹⁹King, op. cit., pp. 142-3.

from 1909 to 1927.²⁰ Transfer payments, which were one and a half billion dollars in 1929 or less than 2 per cent of personal income, had increased by 1953 to fourteen billion dollars, or five per cent of personal income. Much of this increase was due to increased military pensions and related veterans' benefits arising out of World War II and the Korean War.²¹ In this same period the state and local governments increased their transfer payments by roughly fifteen times, with much of this increase going in the form of direct aid to the blind, the aged, the disabled and dependent children. These payments, while paid by the states, were in part financed by the federal government.²²

TOTAL MILITARY EXPENDITURES FOR SELECTED YEARS:²³
(Millions of Dollars)

Year	Military Expenditures
1890	67
1910	313
1918	6,148
1930	838
1944	88,615*
1953	49,993

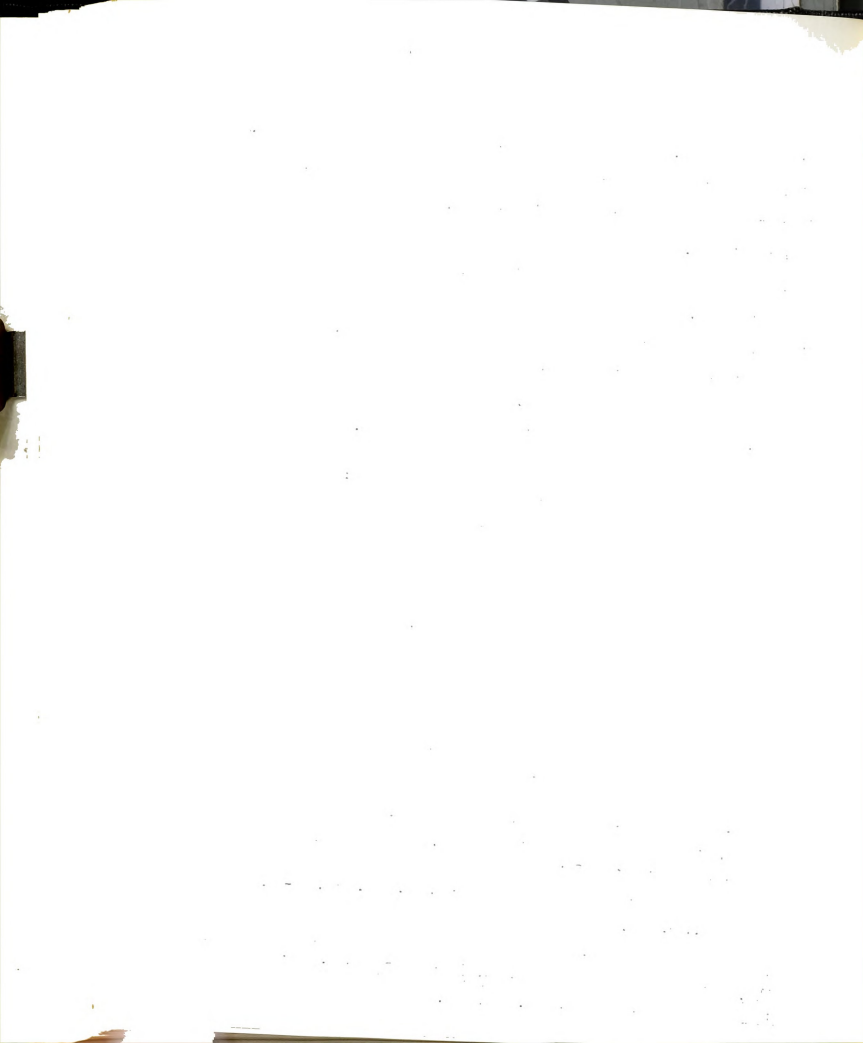
*Includes other national security besides national defense.

²⁰National Bureau of Economic Research, The National Income and its Purchasing Power, pp. 368-9.

²¹United States Department of Commerce, op. cit., pp. 11-12.

²²Ibid., p. 213.

²³The years of 1890-1930 inclusive taken from the Bureau of Census, Historical Statistics of the United States, 1789-1945, p. 299; the years 1944, 1953 taken from the United States Department of Commerce, National Income Supplement, 1954 ed., pp. 106, 163.



Wars and preparation for war account for the largest increase in government expenditures. Total military expenditures, which were only 67 million dollars in 1890, rose to more than 88 billions in 1944 and even in 1953 amounted to almost 50 billion.

Besides increases in transfer payments and military expenditures, the growth in government interest payments is another major factor in

INTEREST PAID BY THE FEDERAL GOVERNMENT FOR SELECTED YEARS:²⁴
(Millions of Dollars)

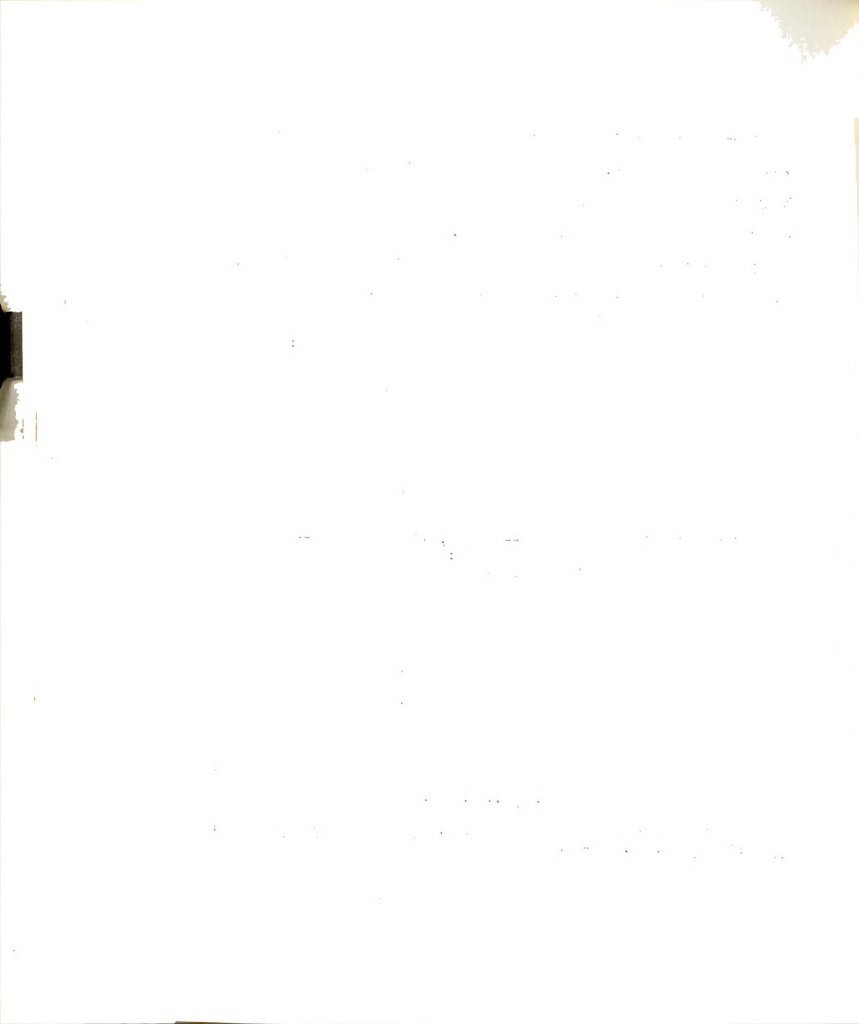
Year	Interest
1890	36
1918	190
1920	1,020

INTEREST PAID BY GOVERNMENT--FEDERAL, STATE AND LOCAL--
FOR SELECTED YEARS:²⁵
(Millions of Dollars)

Year	Interest
1909	209
1920	1,413
1925	1,499

²⁴Bureau of the Census, op. cit., p. 299.

²⁵National Bureau of Economic Research, The National Income and its Purchasing Power, pp. 369-70.



INTEREST PAID BY GOVERNMENT FOR SELECTED YEARS:²⁶
(Millions of Dollars)

Year	Total	Federal	State and Local
1929	983	441	542
1940	1,291	726	565
1945	3,683	3,334	349
1953	5,040	4,732	308

the increased governmental expenditures. An examination of the government interest payments show that total government interest payments grew from 209 millions of dollars in 1909 to over five billion dollars in 1953. Again it is the federal government component that is responsible for this enormous growth. While state and local interest payments did increase after 1909 and through the twenties,²⁷ they declined during the thirties and forties and by 1953 were only 308 million dollars. On the other hand, the federal government, which was spending just thirty-six million in 1890 on interest was, by 1953, paying out an unbelievable \$4,732,000,000. in interest.

The great growth of interest payments was the result of the fantastic increase in the national debt. For the period of 1890 to 1916, the United States gross federal debt was quite stable at a figure of just over one billion dollars. After 1916 the debt rose

²⁶The United States Department of Commerce, The National Income Supplement, 1954, ed., pp. 172-3.

²⁷National Bureau of Economic Research, The National Income and its Purchasing Power, pp. 369-70.



TOTAL GROSS DEBT OF THE FEDERAL GOVERNMENT FOR SELECTED YEARS:²⁸
(Millions of Dollars)

Year	Debt
1890	1,122
1900	1,263
1910	1,146
1916	1,225
1919	25,485
1930	16,185
1940	42,968
1946	269,422

rapidly to a temporary peak of \$25 billion in 1919. This upward surge was reversed in a steady decline which reached the bottom of the trough in 1930 with the debt standing at \$16 billion. The debt grew somewhat during the depression of the thirties, but during the war years tremendous increases in the debt occurred, so that by 1946 it was almost \$270 billion. In his book on the federal debt, Charles C. Abbott observes,

Even in 1937 it was beyond the reach of wild imagination to think of a gross federal debt over 200 times as great as before World War I. Yet the figure is now around \$260 billion

²⁸The years of 1890-1910 taken from the Bureau of the Census, Historical Statistics of the United States, 1789-1945, pp. 305-6; the years 1916-1946, taken from the Bureau of the Budget, The Federal Budget in Brief, Fiscal Year 1954, p. 44.



. . . vastly more than the authors of the Fund's (Twentieth Century Fund) 1937 report thought the government's credit could possibly bear.²⁹

By 1954 the debt was pressing against its statutory limitation of 275 billion so that a temporary increase of \$6 billion ending June 30, 1955 was passed by Congress.³⁰

The basic cause of the debt growth was the deficit financing of the federal government. During the five-year war period, the government spent 323 billion dollars out of an aggregate of \$833 billion. In the year of 1945 government spending accounted for almost fifty per cent of total spending. These great government expenditures were in large part financed by borrowing on an unprecedented scale. Of the \$323 billion spent by the government, taxes received were \$133 billion, leaving a deficit of \$190 billion.³¹ In discussing the debt, Abbott points to the tremendous impact it has on society, bringing out that its effects are felt in many ways and in many sectors of the economy, that its management can affect the course of business and hence the level of income and employment.³² From the point of view of this study, the increase in the debt, bringing with it large government interest payments, makes the treatment of these payments of vital concern in making reliable estimates of aggregate income.

²⁹Charles Cortex Abbott, The Federal Debt, Structure and Impact, p. vii.

³⁰Office of the Secretary, United States Treasury Department, Treasury Bulletin, October, 1954, p. 15.

³¹Abbott, op. cit., pp. 12-13.

³²Ibid., pp. 3-4.



C. Taxation

So far, this chapter has reviewed the role of the government from the expenditure side. Concomitant with growing expenditures are growing receipts. Total government receipts increased from less than one billion in 1890 to almost 100 billion in 1953, about a one hundred-fold increase. The federal government again is the factor most responsible for this growth. In 1929 federal government receipts, which were only 2.4 per cent of the gross national product, had become 14.6 per cent of the gross national product. On the other hand, state and local receipts remain a fairly constant percentage of gross national product, being 6.7 per cent in 1929 and 6.9 per cent in 1953.³³

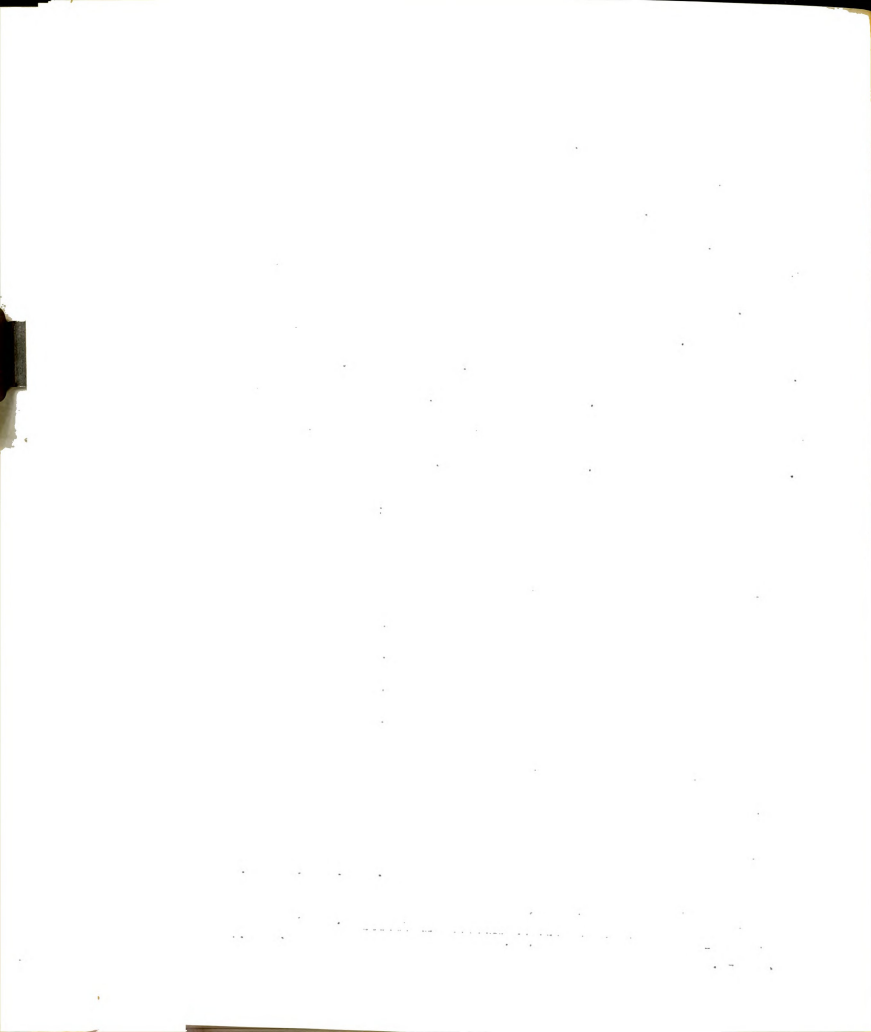
GOVERNMENT REVENUES FOR SELECTED YEARS:³⁴
(Millions of Dollars)

Year	Total	Federal	State and Local
1890	965	403	652
1913	2,326	724	1,602
1929	11,258	3,804	7,571
1945	53,216	42,495	11,591
1953	95,900	71,228	27,489

Not only did the amount of taxes expand terrifically from 1890 to 1953, but the general nature of the tax structure made substantial

³³The United States Department of Commerce, op. cit., pp. 22-23.

³⁴Data for years 1890, 1913, taken from the Bureau of Census, Historical Statistics of the United States, 1789-1945, p. 296; data for years 1929-1953 taken from the U. S. Department of Commerce, op. cit., pp. 170-1.



changes. Spahr was quite concerned over inequities existing in the tax structure at the time he was writing.³⁵ During the 1890's, national taxation consisted mainly of indirect taxation--customs and excises on

FEDERAL TAXATION³⁶
(Millions of Dollars)

Year	Individual Income	Corporate Profits	Indirect Business
1890	0.0	0.0	--
1913		35.0*	--
1929	1,323.0	1,224.0	1,193
1953	34,095.0	20,281.0	11,048

*Includes Individual Income Tax

STATE AND LOCAL TAXATION³⁷
(Millions of Dollars)

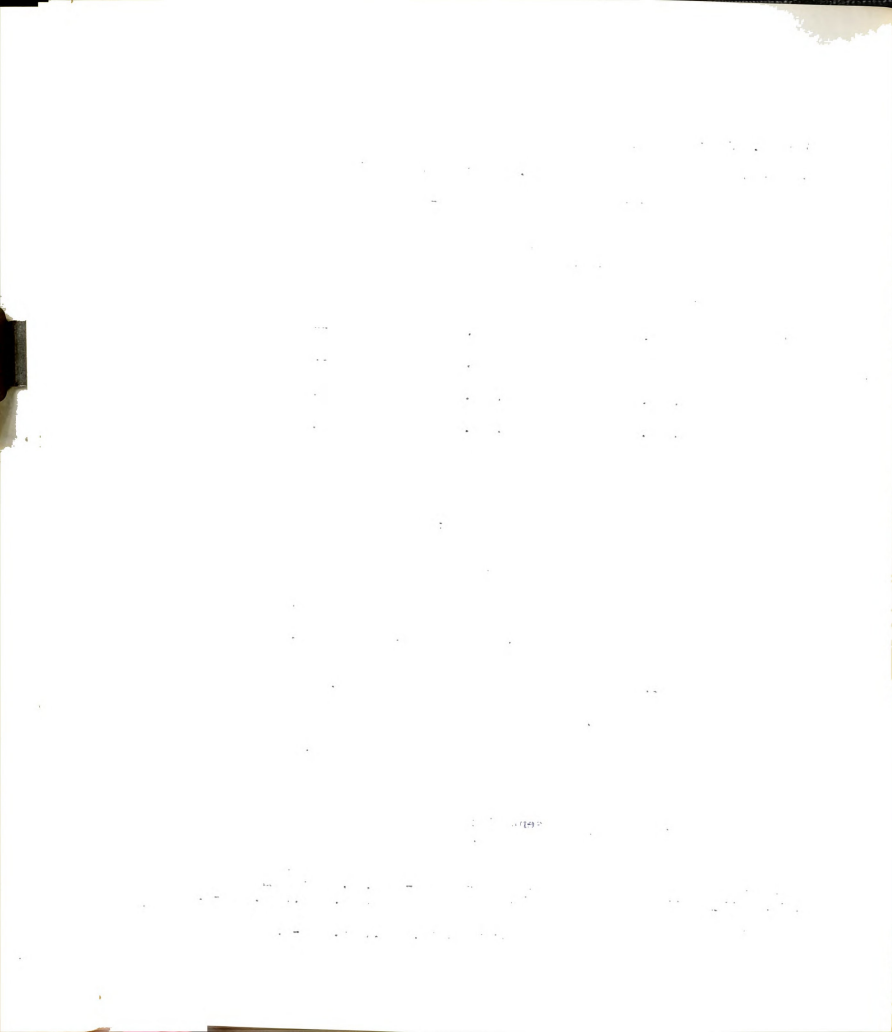
Year	Income	Indirect Business	Sales	Property
1929	139	5,810	439	4,543
1953	1,061	18,989	6,186	9,126

tobacco and liquor--which he felt burdened the poor unduly. There was no income tax at this time. An income tax provision was attached to the Tariff Bill of 1894 but was shortly declared unconstitutional. In 1913

³⁵Charles B. Spahr, The Present Distribution of Wealth in the United States, see chapters VII and VIII.

³⁶Data for years 1890-1913 taken from the Bureau of Census, Historical Statistics of the United States, 1789-1945, p. 296; data for years 1929-1953 taken from the Department of Commerce, op. cit., pp. 170-1.

³⁷United States Department of Commerce, op. cit., pp. 170-1.



the Sixteenth Amendment to the Constitution was ratified and an income tax passed. Income plus corporation profits taxes fluctuated around \$2 billion until the United States entered World War II, when these taxes collected over \$35 billion in 1945.³⁸ The table above shows that by 1953 these taxes had risen to over \$54 billion. Our national taxes then show a marked trend toward progressivity, owing to increased importance of individual income and corporation profits taxes.

On the other hand, state and local taxation--of which Spahr was so proud, as shown by his statement: ". . . we enter the field where the burdens of taxation are more fairly distributed than in any other country in the world, Switzerland not excepted,"³⁹ has become increasingly regressive, largely because of the greater use of sales taxes. In short, in terms of equity the position of federal taxation and state and local taxation has reversed itself in the period under study.

Taxes introduce many problems in national income accounting. Should all taxes be treated alike? If taxes are not all treated alike, what criterion can be used to classify them? What taxes, if any, should be deducted from net national product and national income? Should the growth of government taxation cause a discrepancy between national income as viewed from the product side and as viewed from the money flow or income side? These problems are discussed in detail in a later chapter entitled "Market"

³⁸Bureau of Census, op. cit., pp. 295-6.

³⁹Spahr, op. cit., p. 146.

Prices or Factor Costs." At this point it can be observed that when the government is small, these problems can well be ignored without serious distortion of the national income and product totals; however, the great growth of taxes makes their proper treatment imperative if reliable and meaningful estimates of national income are to be made.

D. Workers Employed by the Government

Perhaps one of the most significant indicators which demonstrates the increasing economic role of the government is the marked increase in the number of persons employed by the government. The included tables clearly demonstrate this growth. In absolute terms, the total number employed by all governments increases from 1,643,000 in 1909 to 9,885,000 in 1953. It is interesting to note the steady and stable

NATIONAL BUREAU OF ECONOMIC RESEARCH, 1930:⁴⁰ GOVERNMENT EMPLOYMENT FOR SELECTED YEARS (In Thousands)

Year	Total (All Governments)	Federal	State and Local
1909	1,643	562	1,080
1918	5,210	3,746	1,463
1922	2,618	882	1,736
1927	2,819	839	1,979

⁴⁰National Bureau of Economic Research, The National Income and Its Purchasing Power, p. 361.



UNITED STATES DEPARTMENT OF COMMERCE, 1954:⁴¹
GOVERNMENT EMPLOYMENT FOR SELECTED YEARS
(In Thousands)

Year	Total (All Governments)	Federal	State and Local
1929	3,184	827	2,357
1939	6,133	3,273	2,860
1944	17,137	14,366	2,771
1949	7,142	3,548	3,594
1953	9,985	5,877	4,108

growth of state and local government employment. In contrast, the federal government growth in employment has been more erratic. This is largely the result of changing military needs. Two abnormally high periods of federal employment occurred during World War I and World War II when, in the peak years of these wars, there were 3,023,000 and 11,365,000, respectively, in the military service.⁴²

Typically, the state and local government employment has exceeded that of the federal government. Until 1936, the only exception was the period of World War I, but in 1936, work relief rolls mounted to 2,334,000, which helped to bring the federal government's share of total government employment to more than half. This situation obtained until after World War II with the single exception of the year 1937.⁴³

⁴¹United States Department of Commerce, op. cit., pp. 196-7.

⁴²National Bureau of Economic Research, loc. cit.

⁴³United States Department of Commerce, loc. cit.



By 1953 the trend was for state and local governments to increase their share of total government employment. In this year state and local government accounted for forty-one per cent of total government employment, with the federal government accounting for the remaining fifty-nine percent. However, it should be noted that these figures are inclusive of military services. If we exclude the military, we find that state and local governments account for sixty-four per cent and the federal government for thirty-six per cent. These same trends continued in 1954, leading a Department of Commerce bulletin to observe,

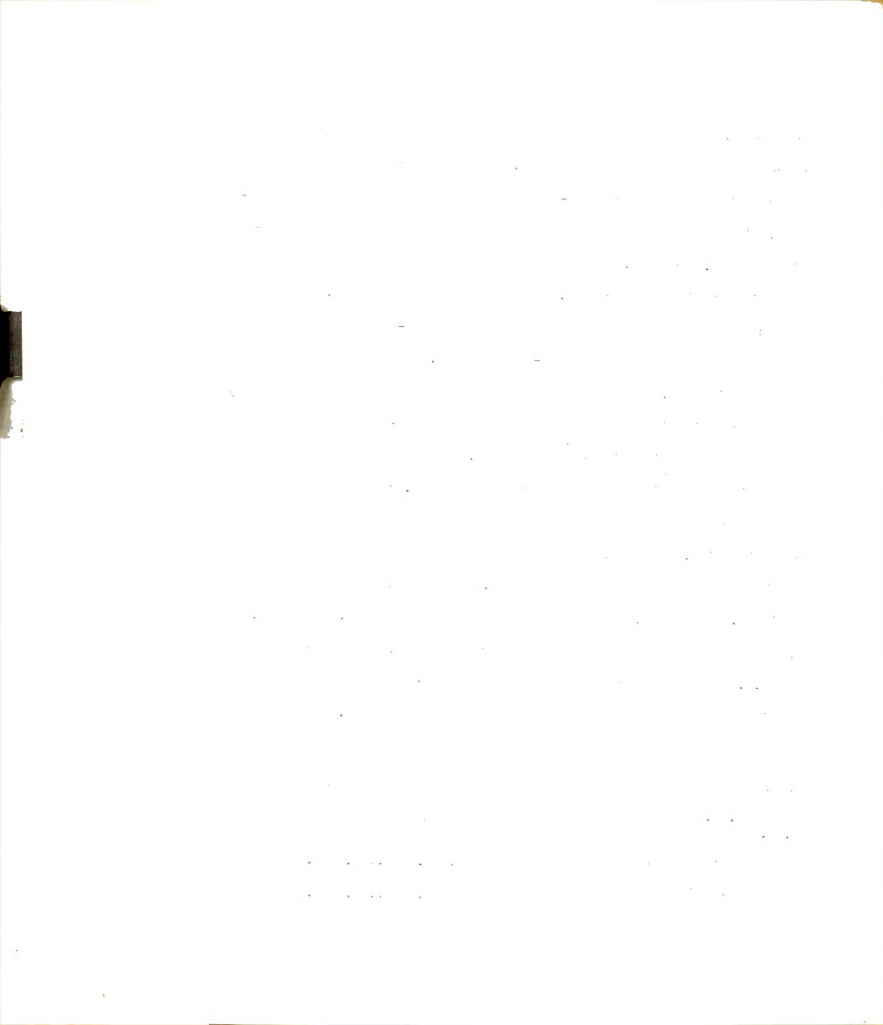
Federal civilian personnel accounted for thirty-two percent of the October 1954 total, and state and local governments for the remaining sixty-eight percent. The share of the Federal Government in total governmental employment was thus at its lowest level since before World War II.⁴⁴

Government employment has increased not only absolutely but also percentagewise. In 1909, the percentage of all gainfully occupied people employed by the government was 4.39 per cent, exclusive of military.⁴⁵ By 1953, this percentage had increased to 11.6 per cent. Including the military in the 1953 figure would raise this percentage to 18.1.⁴⁶ It thus appears that direct government employment is a significant part of total employment in the United States.

⁴⁴ U. S. Department of Commerce, Public Employment in October 1954, p. 1.

⁴⁵ National Bureau of Economic Research, op. cit., p. 362.

⁴⁶ United States Department of Commerce, op. cit., p. 197.



VI. TREATMENT OF THE GOVERNMENT SECTOR

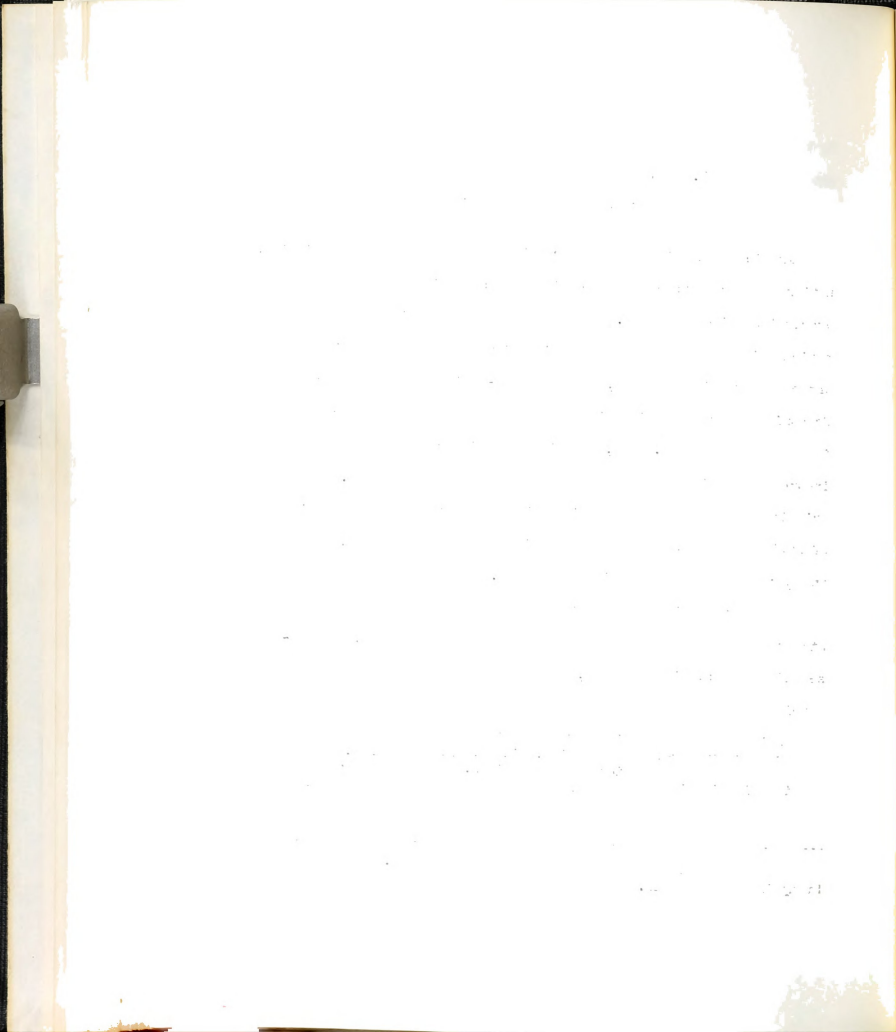
BY THE DEPARTMENT OF COMMERCE

In view of the importance attributed to national income statistics, national governments entered the field of estimating national income aggregates quite belatedly. Several conscientious attempts to measure national income were undertaken by individuals¹ in the late nineteenth and early twentieth century, and the quasi-official National Bureau of Economic Research made its first study of national income aggregates in the early twenties. Yet, the first official report on national income totals did not appear in the United States until 1934. Great Britain waited until the blitz in 1941 for her first official estimate of national income, and it was not until 1947 that Australia, Canada and Eire started making similar estimates.

The first official study of the national income in the United States was undertaken as a result of Senate Resolution 220, Seventy-second Congress, first session, which requested that the Bureau of Foreign and Domestic Commerce prepare

estimates of the portions of the national income originating from agriculture, manufacturing, mining, transportation, and other gainful industries and occupations, and estimates of the distribution of the national income in the form of wages,

¹For example, Spahr and King in the United States; Bowley and Stamp in Great Britain.



rents, royalties, dividends, profits, and other types of payments.²

The initial report was published early in 1934 as Senate Document No. 124, Seventy-third Congress, second session.

Since then a number of special bulletins have been issued on national income statistics. Statistical supplements appeared in 1936, 1938 and 1942. The next national income supplement was published in 1947 and was followed with issues in 1949, 1951 and 1954. The Survey of Current Business now regularly presents the latest available data and analyses of the various national income aggregates.

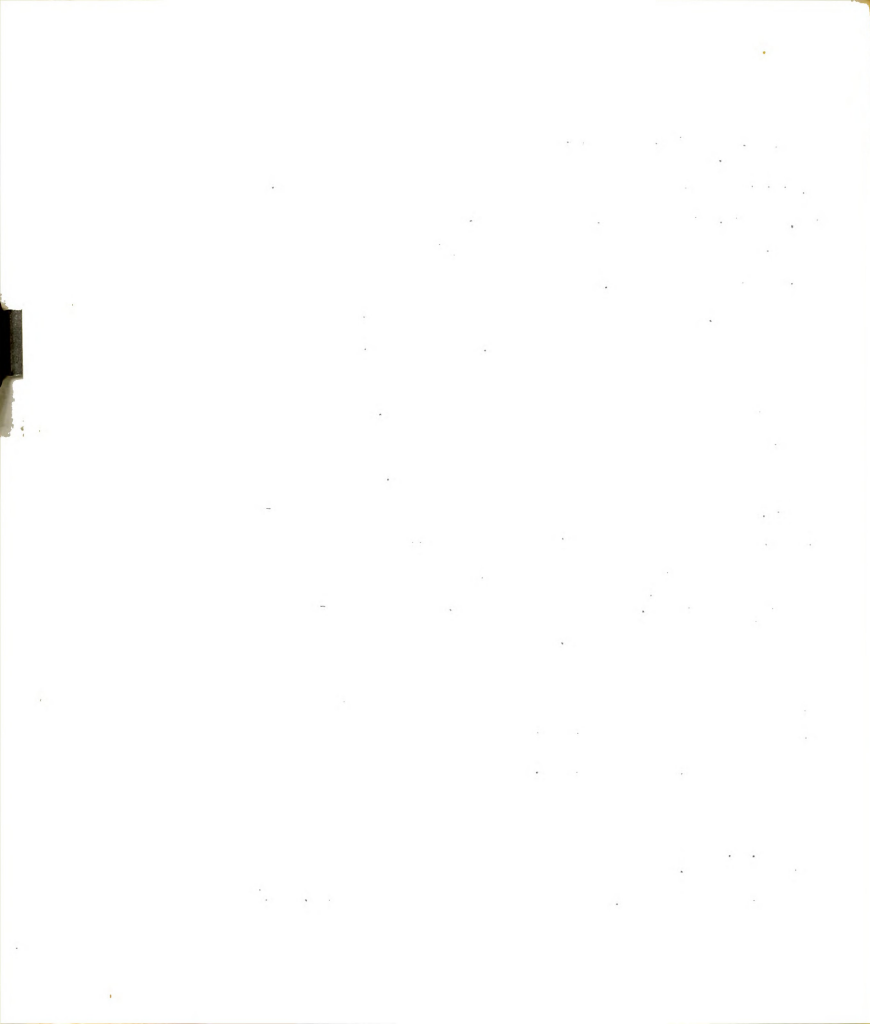
In its treatment of the government sector the Department of Commerce recognizes that it presents special problems. In its earliest report, doubt is expressed as to the propriety of classifying government as a branch of the country's economic system--

Indeed the motive of immediate profit, which characterizes private industry, is conspicuously absent from the activity of the government. But on the other hand, various government agencies do perform an important function in the economic life of the nation.³

Further elaboration is given to the effect that even when it is not engaged in such obvious industrial activities as postal service and public education and has confined its activity to protection (army, navy and police), legislation, etc.,

²U. S. Department of Commerce, National Income Supplement, 1947; See inside cover.

³Senate Document No. 124, 73rd Congress, Second Session, p. 125.



we would still have to say that these purely governmental functions are of real value in the economic life of the nation, and that they give rise to income which should be taken into account.⁴

Also, this report specifically includes in its definition of income the work rendered by government officials as a part of the total work done to satisfy the wants of the people of the nation.⁵

Basically, the national income estimates of the Department of Commerce can be classified as before 1947 and after 1947. Before 1947 two independent estimates were made to obtain the product flow and the income flow. On the income side, the various income payments were summed to arrive at national income, and on the final product side, capital formation and government purchases were estimated separately, with consumers' expenditures calculated as a residual with no way of checking one estimate against the other.

The 1947 supplement was a landmark in national income statistics. The new estimates were recast into a comprehensive framework of national income accounting which was designed to provide a systematic picture of the economic structure and process in terms of interrelated income and product flows. All statistical data was revised back to 1929. Also, a brief explanation of the concepts underlying the estimates was provided. Until this supplement, data on the rationale behind the treatment of

⁴Ibid.

⁵Ibid., p. 1.



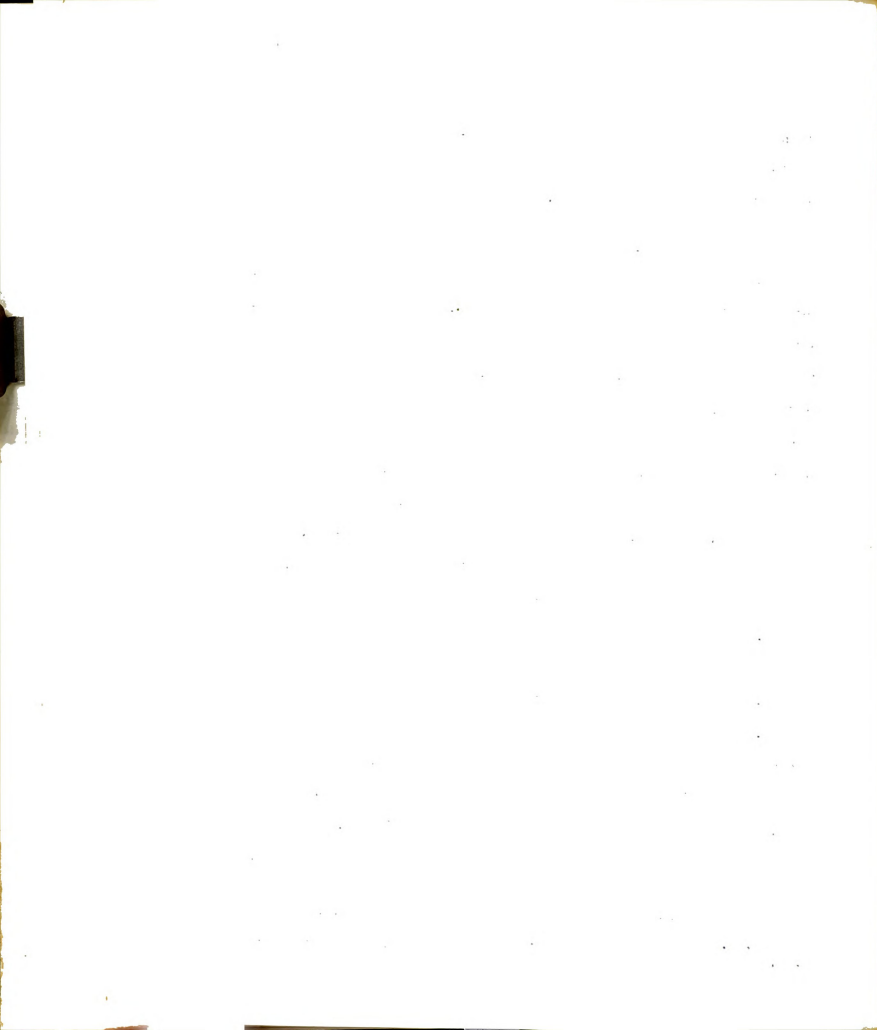
items in the estimates was quite fragmentary. However, the 1954 supplement points out that the conceptual framework was explained in detail for the first time in 1951.⁶

A. Government Enterprises

The economic role of the government can be divided into the enterprise function and the user or taker function. Since government enterprises are essentially commercial in character, they are not included in the government sector. These agencies, such as the Post Office and public power, cover their operating costs to a substantial degree through the sale of their goods and services, as opposed to general government activities, such as universities and parks, which are financed largely through taxation and debt creation, and only nominally through fees. However, the distinction is not always clear-cut. Government enterprises are consequently included in the business sector, and the only concern about them here is their bearing on the government sector.

Even though these enterprises are consolidated with the business sector, some departures from the standard treatment of business concerns occurs. The profits of government enterprises are not treated as factor costs, but as a nonfactor charge against current output, under the item of "subsidies minus current surplus of government enterprises." Therefore, government profits are not a part of national income. The capital formation of these enterprises is written off as government purchases,

⁶U. S. Department of Commerce, National Income Supplement, 1954, p. v.



rather than included in gross private investment. And, the profits or current surplus are calculated without the deduction of either net interest paid by them or of depreciation. Thus, depreciation charges of government enterprises are not included in capital consumption allowances and their net interest payments are not counted in business net interest payments. The net interest is combined with the net interest paid by the general government, and the current surplus is treated as a receipt in the government sector. In this manner the surplus or deficit of general government is consolidated with that of the government enterprises.

The "current surplus" or profits of these enterprises are not counted as factor costs because of the difficulty of disentangling them from their subsidy operations, particularly during World War II. The inclusion of the subsidy losses would have offset part of subsidies counted as part of national income, and would have run counter to the general procedure of treating government subsidies as part of total factor cost. Thus, profits or losses of government enterprises (calculated without allowance for depreciation) are, in effect, treated as indirect subsidies and losses, respectively.

Subsidies are counted as a part of the national income in the form of a business receipt which is necessary to elicit factor services. Since the subsidized products are included at their market value, they are deducted in reconciling the factor income originating in the business system with the market value of the business output.

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Before 1947 subsidies were counted as part of the national product, but were eliminated from it after 1947 so that the national product would consistently measure the purchases of goods and services valued at their market prices. The 1947 national income supplement points out that with this definition of national product, "the inclusion of subsidies would involve the artificial assumption that the Government, in paying a subsidy, is in effect purchasing goods or services."⁷

Net interest paid by government enterprises was excluded, largely as a corollary to the decision not to treat their profits as a part of factor costs. That a meaningful total of the factor costs of property incomes can be obtained only if profits and interest are combined, was the view held, and it was thought that the inclusion of interest alone might be misleading.⁸

Capital formation was combined with government purchases rather than private investment because the dividing line between capital purchases by government enterprises and by general government is quite arbitrary and would require an exhaustive classification of government purchases of capital goods.⁹

⁷U. S. Department of Commerce, National Income Supplement, 1947, p. 12.

⁸U. S. Department of Commerce, National Income Supplement, 1954, p. 49.

⁹Ibid.



The Department of Commerce states that the main aspect of this treatment is to avoid the classification of current purchases by government enterprises as final purchases. Also that this treatment is just "a convenient means of disposing of a type of operation that has not reached quantitative importance in the United States total income and product picture."¹⁰ In summary, the treatment of the surplus, net interest and capital outlays of government enterprises results in a consolidated government surplus or deficit which reflects the receipts and expenditures both of general government and of government enterprises.¹¹

The account of the government sector introduced in the 1947 supplement includes all levels of government--federal, state and local--and is treated not as a profit and loss statement, as is the business sector, but as simply a statement of receipts and expenditures. Since its expenditures constitute purchases for final products and transfers, the government is treated essentially as a consumer.¹² Thus, all government expenditures for goods and services are considered final. It is also noted that the two-fold measurement of output in terms of product flows and factor costs is not available for the government sector of the economy, and factor cost must be used for both aspects of the value added by it to the total output. A single measure must be used in

¹⁰Ibid.

¹¹Ibid.

¹²U. S. Department of Commerce, National Income Supplement, 1947, p. 4.



these instances to depict both income and product originating, because there is no sales transaction involving the output produced, as distinguished from the purchase of the ingredient factors of production and supplies and materials. Consequently the factor cost measurement of output in the government sector also conforms to the definition of final output underlying national income accounting-- the factor services purchased, in terms of which output is measured, are not resold.¹³

B. The Value of the Government Output

Ever since its first national income report the Department of Commerce has followed the practice of valuing its product at factor cost. That is,

To declare that the actual payments by the government to labor and capital employed by it measure the net value of services rendered. Income originating in the field of government activity is thus equal to the payments to employees plus interest payments on government debt.¹⁴

It is further noted that all other expenses of the government on supplies, and so forth, can't be counted in income originating in government any more than the value of raw materials consumed in private industry are counted as part of its value product. The 1954 supplement continues to treat the value product of government as the factor costs, but points to two issues that arise in this connection. One issue is the treatment

¹³U. S. Department of Commerce, National Income Supplement, 1954, pp. 34-35.

¹⁴Senate Document No. 124, Seventy-third Congress, Second Session, p. 125.



of monetary interest and the question of substituting an imputed interest series for it; and, also, the distinction between employee compensation and transfer payments.¹⁵

C. Government Interest

In its original definition of the government's value product, interest payments of the government were considered a factor payment and hence a part of the national income. As a result of considerable controversy the Department of Commerce changed its position so that in its 1947 national income supplement it was excluded from the national income aggregate and considered a transfer payment. The Department of Commerce rationalized its new position on the grounds that the bulk of the government debt was created to finance wars and current expenditures, and that interest paid on this debt does not represent currently produced goods and services or the current use of economic resources. Furthermore, the inclusion of government interest as part of the national income would distort a comparison between the pre-war and post-war volume of production.¹⁶

This treatment of government interest payments has been continued. In its 1951 supplement the Department says, "In no common sense use of the term can interest payments on such debt be taken to represent cur-

¹⁵U. S. Department of Commerce, National Income Supplement, 1954, p. 53.

¹⁶U. S. Department of Commerce, National Income Supplement, 1947, p. 11.



rently produced goods and services or the current use of economic resources."¹⁷ It is further observed that government interest payments are not regarded as measuring value added to output by government, because they are subject to fluctuations which in any common sense notion could not be regarded as representing corresponding changes in the value of current production.¹⁸ The 1954 supplement reiterates these arguments, and stresses the artificiality of the inclusion of government interest payments in the national income.¹⁹

The question also arises as to whether an allowance or imputation should be made for the services of government-owned property by the imputation of a rate or return to it somewhat analogous to the imputation or a return to owner-occupied homes in the business sector of the economy. The 1947 supplement simply states that it would be "highly questionable" that interest paid on debt incurred to acquire government capital would provide an appropriate measure of such imputed income and product.²⁰ In 1951, a more detailed explanation was given. No imputation is made for government-owned property "because the conceptual and statistical bases for making a realistic and useful imputation are absent."²¹ The

¹⁷U. S. Department of Commerce, National Income Supplement, 1951, p. 27.

¹⁸Ibid., p. 48.

¹⁹U. S. Department of Commerce, National Income Supplement, 1954, p. 54.

²⁰U. S. Department of Commerce, National Income Supplement, 1947, p. 11.

²¹U. S. Department of Commerce, National Income Supplement, 1951, p. 48.



rationale is continued by noting that in the case of imputed rentals, there is corresponding rentals on the market by which to establish these imputations. For the government, no similar market-based information can be obtained for the bulk of the government properties such as the rental value of a highway system or of the Tennessee Valley Authority. Thus, without a realistic market evaluation of similar properties, the net return to government property would have to be determined by

estimating the total value of government real capital assets, segregating the part which is deemed to be in productive use, and then applying a rate of return to reflect the value added by the property. Clearly, each of these steps would be highly speculative, and a measure of imputed return useful in realistic analysis would not be likely to result.²²

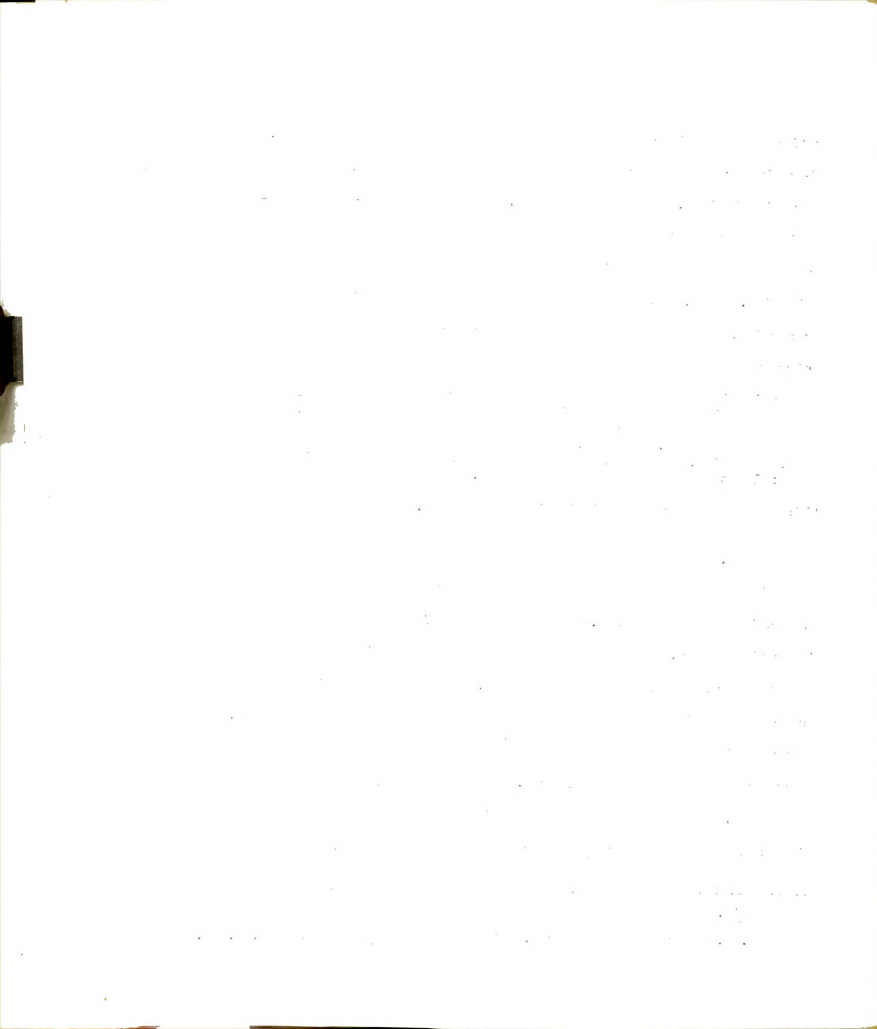
This statement is repeated in the 1954 supplement.²³

D. Employee Compensation versus Transfer Payments

It has been stated above that the value product of the government is confined to factor costs. Since the elimination of government interest payments, the value added by government is limited solely to payments for services of the labor factor. With the disposition of the issue of excluding interest and of substituting an imputed series for it, a further issue on the distinction between employee compensation and transfer payments must be considered. In its 1951 national income supplement, the Department of Commerce first defines employee compensation as the return for rendering current productive service, while no

²²Ibid.

²³U. S. Department of Commerce, National Income Supplement, 1954, p. 54.



such service corresponds to transfer payments. However, since the productivity of services is hard to determine, the Department counts as employee compensation, payments made for the current performance of work. But even this criterion of "current-work-performed" does not always provide a clear-cut distinction between transfers and wages and salaries, since it is not always possible to say whether a specific payment is made for the current work that is performed or for other reasons. For example, allowances for soldier's dependents are of this type, and the decision was made to classify them as employee compensation. However, terminal leave payments, bonuses and other deferred payments such as the "G. I. Bill" to members of the armed forces were considered transfers, as they were disbursed at a date far removed from the time the service was performed. It is argued that to count these payments as employee compensation would necessitate allocating them over the past years on an accrual basis, a course which seemed artificial and would have involved continuous revisions of national income and product estimates for the war period.²⁴ The position of the 1954 supplement is the same as above.²⁵

It was not until the revision in the 1947 supplement that allowances to dependents of military personnel began to be counted as part of the national income. Another revision was the decision to include

²⁴U. S. Department of Commerce, National Income Supplement, 1951, pp. 47-8.

²⁵U. S. Department of Commerce, National Income Supplement, 1954, pp. 53-4.

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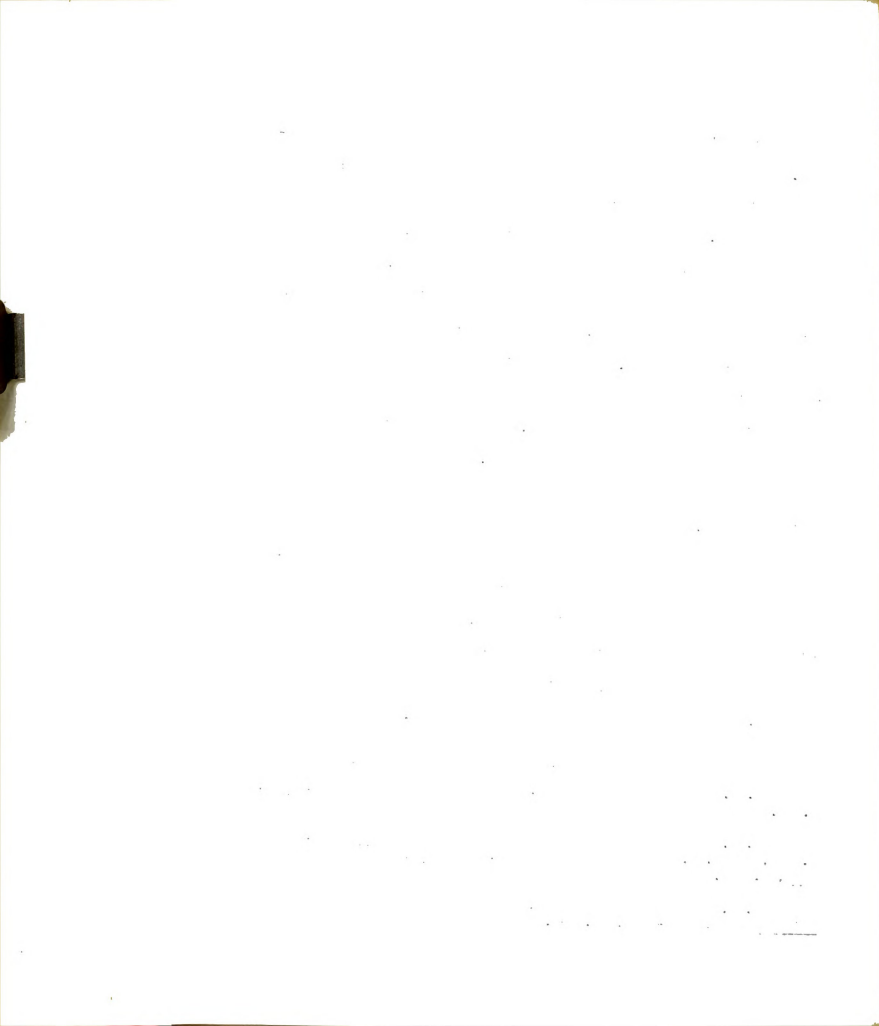
the Government's contribution to military life insurance funds as income. The reason for these changes was to make the measurement of military income conform more closely to the measurement of income for civilian labor. Bonuses and other deferred payments, although similar in many respects to other items in the national income, were excluded because the timing of the payment was not synchronized with the performance of the military duty, and it therefore seemed best to treat them as transfer payments. Another revision made at this time was to remove military retirement pay from the national income and product and classify it as a transfer payment.²⁶ Military retirement pay has continued to be treated as a transfer item.²⁷

The Department of Commerce has been consistent in its treatment of relief payments. Direct relief was excluded from national income on the ground that although these payments represented personal income, they were more in the nature of transfers rather than rewards for services rendered in the productive process. On the other hand, work relief wages are included with other salaries and wages on the ground that the value of works projects is commensurate with the cost of the projects, as with other functions of the government.²⁸ The 1951 and

²⁶U. S. Department of Commerce, National Income Supplement, 1947, p. 12.

²⁷U. S. Department of Commerce, National Income Supplement, 1951, p. 201, and U. S. Department of Commerce, National Income Supplement, 1954, p. 212.

²⁸U. S. Department of Commerce, Monthly Income Payments in the United States, 1929-1940, pp. 6-7.



1954 supplements continue this treatment of direct relief and work relief payments.²⁹

E. Social Insurance

Both employee and employer contributions to social insurance funds are included in the compensation of employees and hence are a part of the national income. The employers' share is considered a supplement to wages and salaries, and the employees' share as a part of them. The reasoning of the Department of Commerce is that these taxes are a necessary element in the cost of hiring labor and are therefore a part of the factor costs. A further argument is given that they reflect a benefit received by the employee in the wage bargain, and consequently are a part of employee compensation.³⁰ The benefits paid by the funds are considered transfer payments by the government. Social security taxes are direct taxes or they may be looked upon as income accruing to individuals, with the time of payment differing from that of its accrual, with the government acting as administrator of the fund. Although social security taxes are included in national income, they are deducted from national income to arrive at personal income, and

²⁹U. S. Department of Commerce, National Income Supplement, 1951, pp. 47, 201; U. S. Department of Commerce, National Income Supplement, 1954, pp. 53-54, 212; and Milton Gilbert and Dwight Yntema, "National Income Exceeds 76 Billion in 1940," Survey of Current Business, June, 1941, p. 13; Senate Document No. 124, 73rd Congress, Second Session, p. 2.

³⁰U. S. Department of Commerce, National Income Supplement, 1954, p. 33.



disposable income is net of all taxes. The Department of Commerce has held this position on social insurance contributions since 1936.³¹

F. Imputations

Imputations are made for wages and salaries paid in kind to government employees. In its handling of its most important imputation, food and standard clothing issued to members of the armed forces, the Department of Commerce has revised its position several times. Milton Gilbert, writing in 1943, explains that subsistence of the armed forces was dropped from factor incomes partly because of "the consternation and amazement" its inclusion caused the non-technical users of the data, and consequently, by changing its treatment, would conform more to the popularly accepted notion of a consumer expenditure; and, for a more fundamental reason, made the change because its inclusion seemed to imply that this single adjustment made comparable the valuation of war and civilian use of the factors or products.³²

In 1947, income in kind received by the armed forces was again included in national income and product. Income in kind is the value

³¹U. S. Department of Commerce, National Income Supplement, 1947, p. 7; U. S. Department of Commerce, National Income Supplement, 1954, p. 56; Gilbert and Yntema, op. cit., p. 13; Edward F. Denison, "Report on Discussion of National Income Measurement," Conference on Research in Income and Wealth, vol. 10, pp. 12, 16-17; U. S. Department of Commerce, Monthly Income Payments in the United States, 1929-1940, p. 4.

³²Milton Gilbert, "U. S. National Income Statistics," Economic Journal, April, 1943, p. 80.



of food and personal clothing issued to the armed forces. This change is defended on the ground that it would make the measurement of military income conform more closely to the measurement of income for civilian labor.³³ The 1951 and 1954 supplements continue this inclusion. It is further noted that only standard or personal clothing is included, and not special clothing and equipment. Also, rental value of shelter is not allowed for.³⁴

While imputations are made for wages and salaries paid in kind, none are made for transfer payments or subsidies. The reason is that there is a lack of generally accepted procedure for making imputations and that complications can arise from their introduction. For example, if the services of employees in the administration of relief programs were to be counted as income, the government employees rendering the services classified as transfer payments in kind would end up being classified in the personal sector as household employees, that is, after all the accounting entries were made. In addition, in the national income and product account, personal consumption would be raised and government purchases lowered by the amount of the imputed transfer payments.³⁵

³³U. S. Department of Commerce, National Income Supplement, 1945, p. 12.

³⁴U. S. Department of Commerce, National Income Supplement, 1951, pp. 48-49; and U. S. Department of Commerce, National Income Supplement, 1954, pp. 55-56.

³⁵Ibid.



G. Taxes

In the measurement of the national product, market prices are used, which means that indirect business taxes are included in the value of national output. While net national product at market prices includes all taxes, national income at factor cost depends upon the definition of indirect business taxes and on assumptions about shifting of taxes. Indirect business taxes are defined as those taxes (other than social security) that are chargeable to current cost by business enterprises; and personal taxes are taxes paid by persons and are not chargeable in this way. Since this definition does not make clear the position of sales taxes, they are specifically designated as indirect business taxes, whether they are included in the sales price or paid separately by the consumer. This decision was made, "because it is thought to be more meaningful from the standpoint of studying market behavior."³⁶

The Department of Commerce also argues the proposition that all taxes which are closely tied to consumer purchases, such as automobile licenses and registration fees, be classified as personal expenditures and indirect business taxes, on the ground that the payment of these taxes is a determinant of consumer choice; but the Department rejects this proposal because it would raise difficult problems of classification.³⁷

³⁶U. S. Department of Commerce, National Income Supplement, 1954, p. 55.

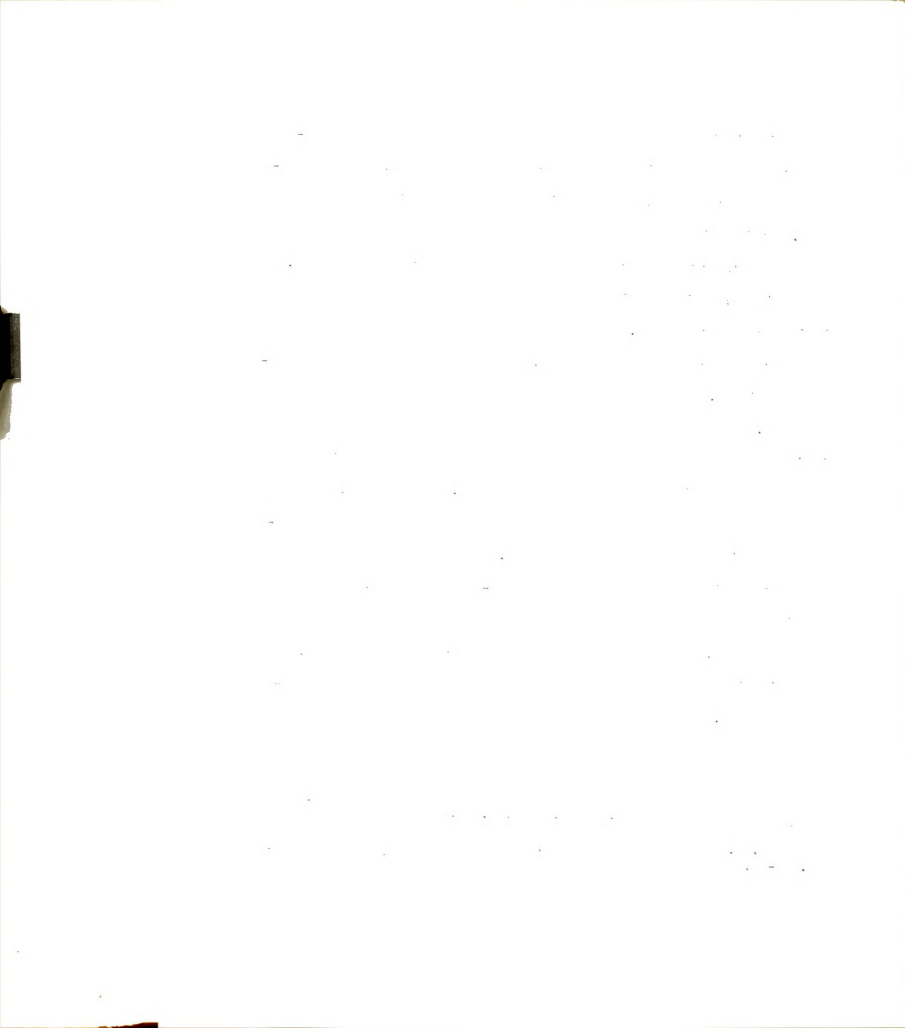
³⁷Ibid.



While indirect business taxes have always been treated as non-factor charges and business income measured net of them,³⁸ the Department of Commerce changed its handling of corporation income taxes in 1947. In 1947 it was decided to include them in the national income so as to more accurately reflect factor costs of current production. The rationale behind the inclusion of corporate taxes rests on the incidence of these taxes. The assumption is made that indirect business taxes are completely shifted forward, while corporate income taxes cannot be shifted. It is recognized that this assumption is open to question, but that the weight of statistical and theoretical evidence indicates that changes in corporate profits taxes affect profits after taxes more significantly than prices of output. For example, the high rate of corporate taxes taken during the war was reflected in substantial reduction of income to stockholders. It is further argued that they must be included because of the carry-back and carry-forward provisions which make each year's taxes partly dependent upon events in other years, making profits after taxes increasingly arbitrary, and necessitating the use of profits before taxes as part of current production costs.³⁹

³⁸Milton Gilbert, "War Expenditures and National Production," Survey of Current Business, March, 1942, p. 10.

³⁹U. S. Department of Commerce, National Income Supplement, 1947, pp. 11-12.



The 1954 supplement reaffirms this position on incidence. It notes that since national income is supposed to measure output in terms of costs or incomes of the factors of production, it should change only if the amount of factor services or their rate of pay changes, and not simply because of changes in tax rates. If the above assumption on incidence is correct, then corporate income taxes must be included and indirect business taxes must be excluded from national income, as mere changes in tax rates will not be reflected in the national income total.⁴⁰

⁴⁰U. S. Department of Commerce, National Income Supplement, 1954, p. 33.



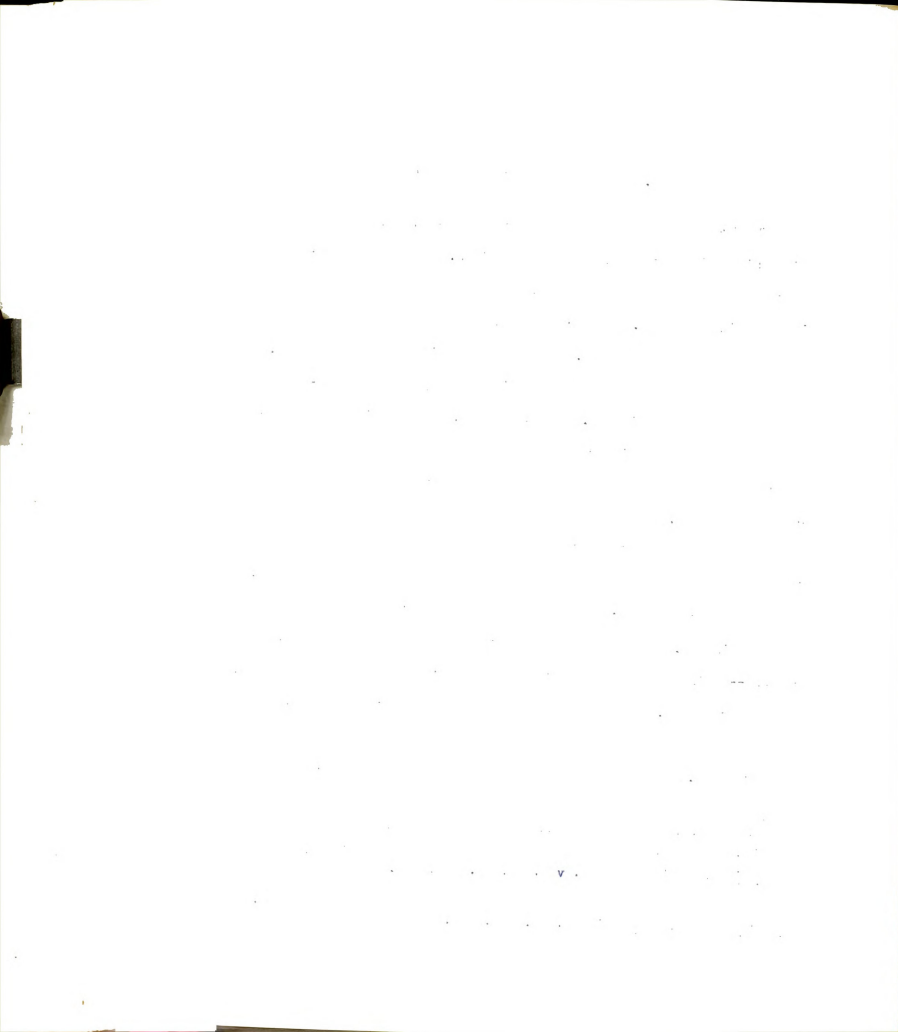
VII. GOVERNMENT INTEREST PAYMENTS

The treatment of government interest payments has been the source of considerable controversy among economists. The need for treating these payments properly becomes apparent when their extensive growth is taken into account. Government interest payments which amounted to only \$96 million or roughly .3 per cent of national income in 1909,¹ had by 1953 increased to over \$5 billion or about one and one-half per cent of the national income.² Consequently, the decision to include or exclude government interest payments will have a marked effect on the national income and product totals which are presumed to reflect economic welfare.

The exclusion or inclusion of interest payments in the national income totals depends on whether they are classified as transfer payments and thus excluded; or as income payments which comprise a part of national income. General agreement exists on the meaning of a transfer payment--it is a payment for which no return in the form of factor services is rendered. Earl Rolph points out that this is the generally held notion of a transfer payment even though it may be stated in other terms such as, "no specific quid for the specific quo rendered" or as

¹Figures derived from The National Bureau of Economic Research, Income in the United States, Vol. II, pp. 220, 222.

²Figures derived from the United States Department of Commerce, National Income, 1954 Edition, pp. 212, 162.



a payment for which there is a failure to "enhance the production of economic values."³ The Department of Commerce also uses this definition in its national income studies.⁴

While the meaning of a transfer payment has thus been clearly established, it is not so clear whether government interest payments should be classified as income or transfer payments. This classification depends on whether government interest is a payment for a service currently rendered or not. If it is, then interest payments are income payments and must be included in the national income. If no service is currently received in return for interest paid, then interest payments must be considered transfer payments and excluded from national income totals. The debate centers on the imputation of a yield, interest or rent, on the real capital owned by government, such as administrative buildings, roads, etc., and used in carrying out its functions; and secondly, whether interest payments on war debt should be excluded.

A. Review of British, Canadian, and Australian Treatment of Government Interest Payments

Official British statistics are based on the concept that war debt is unproductive and consequently interest payments on such debt are classified as transfers. However, only interest payments on central government debt are excluded. This position is defended on the ground

³Earl R. Rolph, The Theory of Fiscal Economics, p. 58.

⁴United States Department of Commerce, op. cit., p. 53.

that most of the central government debt does not reflect currently existing assets while local debt does.⁵ The Canadian treatment is more thorough than the British in that it attempts to distinguish between productive and unproductive central government interest payments so that part of the debt which was incurred to finance existing real assets (in wartime this would include war plants) would be considered productive. Interest payments on this part of the national debt would be included whereas all interest payments on central debt would be excluded under British methodology.⁶ Colin Clark who also rules out interest on war debt states, "However, interest on a national debt incurred for productive purposes, or on a municipal debt, should be reckoned as part of national income . . ."⁷ Stone would include government interest on productive but not on unproductive debt.⁸ Keynes, Hicks, and Bowley would exclude interest on the national debt.⁹ Thus, there is complete conceptual agreement above that interest on

⁵Carl S. Shoup, Principles of National Income Analysis, p. 284.

⁶Richard Stone, Measurement of National Income and Expenditure, a Review of Official Estimates of Five Countries, p. 280.

⁷Colin Clark, National Income and Outlay, p. 10.

⁸Richard Stone, "Two Studies on Income and Expenditure in the United States," Economic Journal, April, 1943, p. 62.

⁹John M. Keynes, "The Concept of National Income: A Supplementary Note," Economic Journal, March, 1940, p. 61; J. R. Hicks, "The Valuation of the Social Product," Economica, December, 1940, p. 116.

2. The second part outlines the specific procedures for recording transactions. It details the steps involved in the accounting process, from the initial entry to the final reconciliation.

3. The third part addresses the role of the accounting department in providing financial information to management. It highlights the need for timely and accurate data to support decision-making.

4. The fourth part discusses the importance of internal controls in preventing fraud and ensuring the integrity of the financial statements. It provides examples of effective control measures.

5. The fifth part concludes by summarizing the key points and reiterating the commitment to high standards of financial reporting.

productive debt is an income payment while interest on unproductive debt is a transfer payment. Only a minor technical difference in the method of determining productive and unproductive debt exists. The remarkable accord among these authorities is easily understood since it is apparently based on the reasoning of Pigou.¹⁰

B. Review of American Treatment of Government Interest Payments

In 1922 the National Bureau of Economic Research defended its inclusion of interest on war debt on the ground that the "advantage to taxpayers of being allowed to postpone the time of payment was evidently felt to be real enough to make them willing to pay money for the privilege. Furthermore, if the taxpayers feel that the privilege of postponing the assumption of their respective shares of the burden is not worth the interest charge, they always have the option of paying off the debt."¹¹

Originally, the United States Department of Commerce included all government interest payments in its national income totals. It argued vigorously that government interest payments were not a draft upon the economy, that creditors of the government were contributing a service to the government for which they were being paid.¹² In 1947, the

¹⁰Colin Clark, op. cit., p. 9; Milton Gilbert, "United States National Income Studies," Economic Journal, April, 1943, p. 81

¹¹National Bureau of Economic Research, op. cit., p. 13.

¹²Senate Document No. 124, Seventy-third Congress, Second Session, National Income, 1929-32, p. 7.



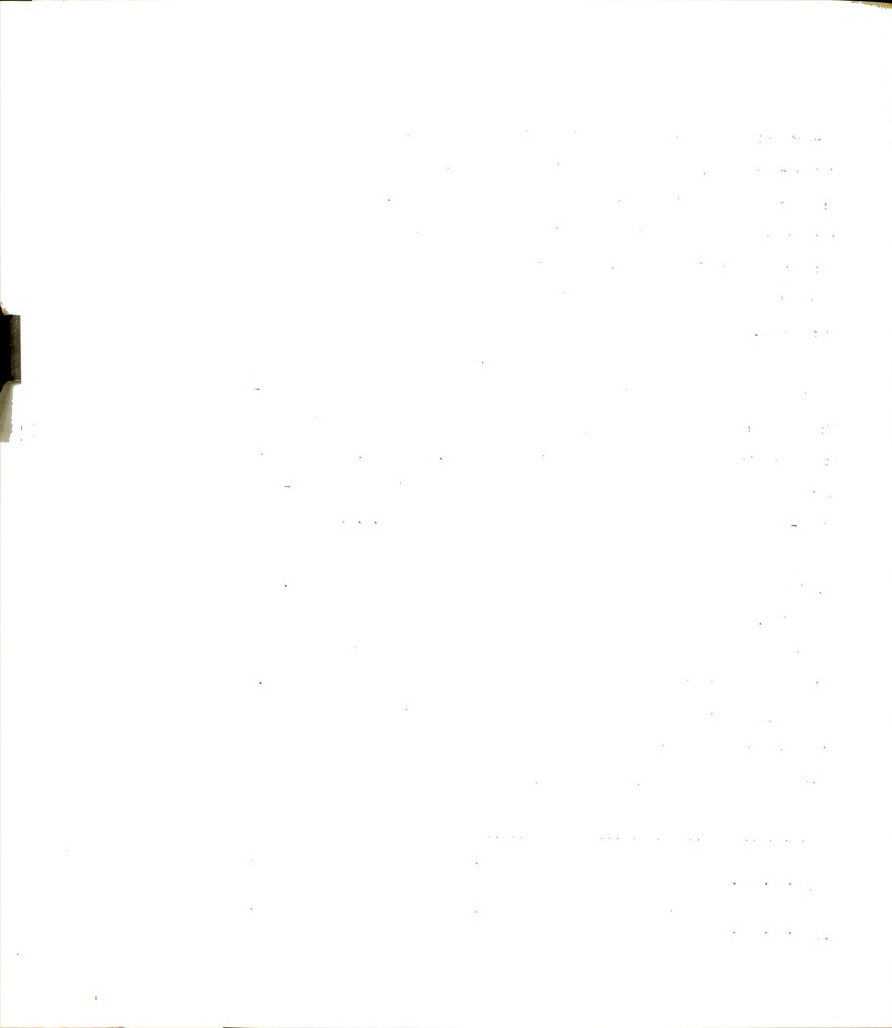
Department of Commerce changed its position to exclude government interest payments from the national income totals although interest on consumer and business debts continued to be included. This change was defended on the grounds that since the bulk of the government debt was created to finance wars, "interest on such debt does not represent currently produced goods and services or the current use of economic resources."¹³

In its 1954 National Income Supplement, the Department of Commerce contends that government interest payments fluctuate without corresponding changes in the value of current output and should therefore be excluded from national income and product totals. However, the Department would be perfectly willing to include an imputation for government-owned property such as the highway system and the T.V.A. but omits any such figure because the methodology involved in attaining such an estimate would result in a figure which would be highly speculative.¹⁴ In brief, the Department of Commerce excludes all government interest payments but would include interest payments on debt incurred to finance the existing real assets of the government if it were feasible.

Most American economists feel that the distinction between debt incurred for productive purposes and debt incurred for unproductive purposes the proper one, with interest payments on the former comprising

¹³United States Department of Commerce, National Income Supplement, 1947, p. 11.

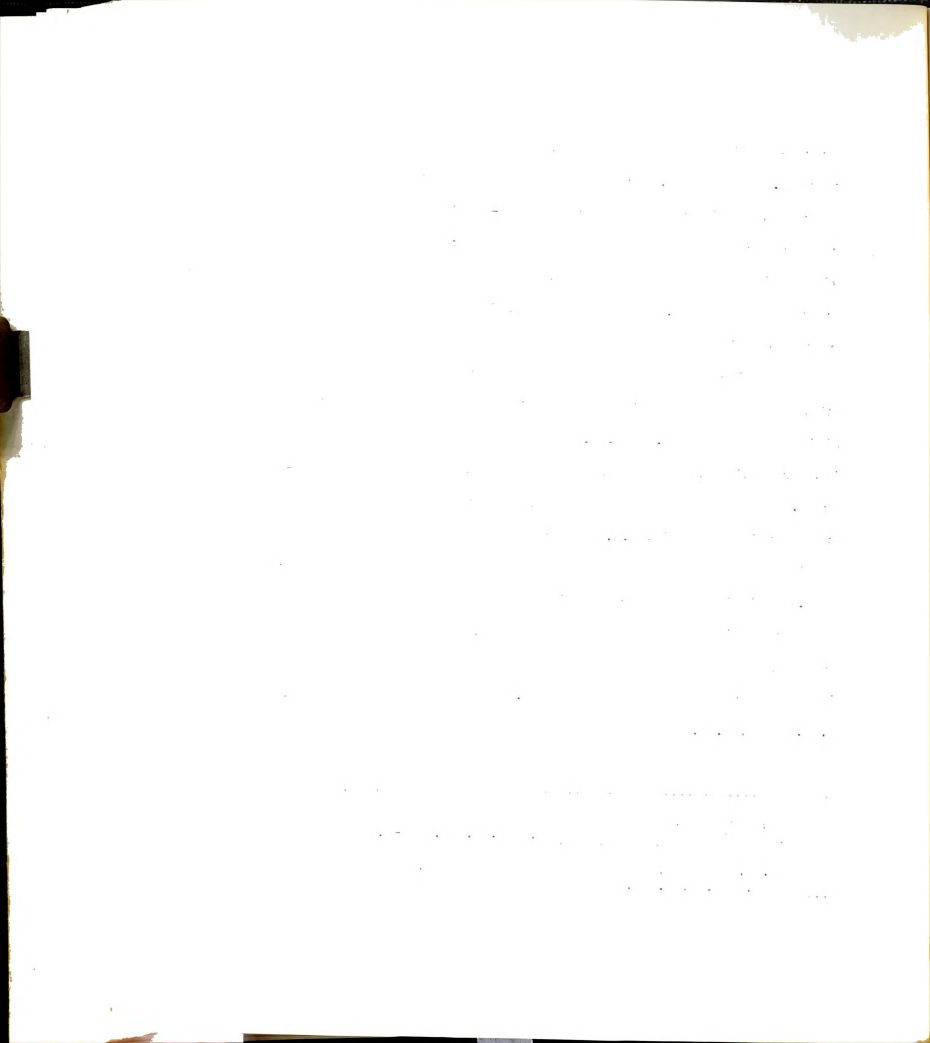
¹⁴United States Department of Commerce, National Income Supplement, 1954, p. 54.



a part of national income and interest payments on the latter to be excluded. For example, Gerhard Colm insists that interest payments on productive debt even if incurred for non-liquidating purposes such as roads forms a genuine part of national income; but interest on war debt should be excluded as no compensating item exists in the social product of the period. The problem of distinguishing between productive and unproductive debts leads Colm to propose that the entire Federal Debt be considered unproductive and that interest on state and local debts be considered as paid for productive investments in a fashion similar to the British.¹⁵ M. A. Copeland also accepts the division into productive and unproductive debt but calls Colm's proposal arbitrary. Instead he suggests that government property income should be put on an imputed basis, i.e., a constant rate of return should be applied to the estimated value of tangible wealth owned by the government. Admitting the problems involved in such an imputation he states, "But the possibility of making accurate estimates of a theoretically untenable item is not an argument for substituting it for a tenable item that can be estimated only roughly."¹⁶ In addition to Copeland, L. R. Klein, G. C. Means, and Carl Shoup feel that an imputed interest

¹⁵Gerhard Colm, "Public Revenue and Public Expenditure in National Income," Studies in Income and Wealth, vol. 1, pp. 197-8.

¹⁶M. A. Copeland, "Concepts of National Income," Studies in Income and Wealth, vol. 1, p. 28.



on productive government debt would result in a more meaningful measure of national income, particularly as a measure of welfare.¹⁷

Others, such as Haberler and Hagen, have expressed similar views. They contend that interest payments should be included only as far as they represent payments for the current use of a factor, and that factor must be physical capital. They suggest, however, that it might be less misleading to omit interest payments than to use the rough British method or to try to make an imputation by applying a rate of interest to the value of government capital.¹⁸ Thus, ever since 1947 when the Department of Commerce excluded government interest payments from national income totals there has been strong agreement on the conceptual problems involved in the treatment of government interest payments by both the British and the Americans.

However, two extremists have taken opposing views on this matter. On the one hand, Simon Kuznets would include all interest payments as consisting of income payments while, on the other hand, Earl Rolph would consider all interest as transfer payments.¹⁹ In 1941 Kuznets

¹⁷L. R. Klein, "National Income and Product of the United States 1929-50, Review of Document from U. S. Department of Commerce," American Economic Review, March, 1953, pp. 122-3; G. C. Means; Lauchlin Currie and R. R. Nathan concurring, "Problems in Estimating National Income Arising from Production by Government," Studies in Income and Wealth, vol. II, pp. 288-9; Carl Shoup, op. cit., p. 281.

¹⁸Gottfried Haberler and Everett E. Hagen, "Taxes, Government Expenditure, and National Income," Studies in Income and Wealth, vol. 8, pp. 22-4.

¹⁹Simon Kuznets, "National Income," Readings in the Theory of Income Distribution, p. 13; Earl R. Rolph, The Theory of Fiscal Economics, p. 60.



noted that government activities contribute much to the satisfaction of the needs of a country and, therefore, their inclusion in national income and product is necessary in order to arrive at proper totals. However, he continues, doubts arise in the case of interest payments on war debt which many exclude on the ground that no productive service is rendered for these payments. He answers, "If capital invested in industrial plants is productive, why not capital sunk in the preservation of the country's economic system or in securing to it economic privileges that affect the welfare of all enterprises or inhabitants?"²⁰ He draws a parallel between governments and corporations with respect to their policies on economic welfare, financial structure, and debt.²¹ In 1948, Kuznets reaffirms this parallelism by observing that corporations pay interest in years when completely inactive justifying this procedure in terms of the resources in question being essential to its operation which is also true of the government. That "In the long run governments continue to pay interest on debts only if society recognizes that such loans are indispensable to the functioning of the economy. Governments that lose wars rarely keep up interest payments on their debts."²²

²⁰Simon Kuznets, National Income and Its Composition, p. 31.

²¹Ibid.

²²Simon Kuznets, "National Income: A New Version," Review of Economics and Statistics, August 1948, p. 159.



Earl Rolph argues that all interest is a transfer because of the nature of debt. He points out that the community's assets would remain unchanged if all debts were wiped out and that a person who holds a mortgage receives an income, not because he is selling a service to the borrower, but merely because he owns something. And, that "If every piece of wealth and every human being were owned without encumbrance, there would be no contractual transfers."²³ Furthermore, the presumption that both parties are better off is irrelevant. "Any implicit assumption that the lender is doing the borrower a special favor in lending money has little basis in fact." To substantiate this point he notes that banks are careful of credit standings and, therefore, are not granting favors. For Rolph, the only relevant aspect of the use-of-money is the claim that a service is performed by debt holders for which interest is paid. He refutes this claim on the grounds that one asset is exchanged for another which is a capital transaction and not an income transaction.²⁴

E. Evaluation

The above summary shows strong agreement in that interest on 'productive' debt is considered bona fide income by every one except Rolph, while interest on 'unproductive' debt is considered a transfer payment by every one but Kuznets and the early work of the National

²³Earl Rolph, op. cit., p. 62.

²⁴Earl Rolph, op. cit., p. 64-5.

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Bureau of Economic Research. In order to evaluate this thought it is essential to know the general nature of an interest payment. Interest is the price paid for the use of funds, and like any other price, it will not be paid unless the borrower feels that the price is worth the advantage of having funds now in exchange for future debt. The lender will not supply the funds unless the price will yield him as much satisfaction as could be derived from alternative uses of the funds.

It does not matter whether the funds are wanted for consumption, for investment, or for government expenditures. In any case the lender is rendering the borrower a service which is paid for by an interest payment. The consumer who buys a car on time finds it to his advantage to do so. The lender enables him to have a car now. While the interest payments plus principal may be distasteful, they are not nearly as distasteful as doing without a car; or, if the buyer had available funds, alternative uses of them might induce him to finance his car. (Incidentally, this is the only type of interest payments on consumer debt included by the Department of Commerce.)²⁵ The investor borrows because of the expected increase in productivity and income through the use of borrowed funds. Whether the funds are to be used in mining, manufacturing, farming, etc., these funds will be borrowed only as long as the expected increase in productivity is great enough to compensate for the price paid for them. The lender then is rendering a service to the

²⁵United States Department of Commerce, National Income Supplement, 1954, p. 99.



investor for which he is willing to pay. Similarly, the government borrows when it is to its advantage to do so, with the bondholders rendering the government a service for which they are paid.

There is considerable reluctance to accept the idea that an interest payment is a payment for a service. This is true whether the individual, the firm, or the government does the borrowing. Ingvar Ohlsson states, "If borrowing for purposes of consumption increased income this would, according to this way of looking at the matter, increase the value of the national product. This seems rather absurd."²⁶ As has been noted above, consumer loans do lead to increased satisfaction, i.e., income. Rolph, as mentioned above, does not recognize that banks are yielding a service when in fact through collecting the community's savings and lending them they are providing a very useful financial service.²⁷ Savers and investors which are to a large extent different groups of people are brought together through the medium of the bank. He also argues that a loan is a capital transaction with one asset being exchanged for another and not an income transaction. But this is also true of any transaction--the total service yielded by a car or ice cream cone does not occur at the instant of purchase. Since our definition of ultimate income is net satisfaction any service yielding satisfaction is income, therefore, since interest is a payment for a service yielding satisfaction, it is income.

²⁶Ingvar Ohlsson, On National Accounting, pp. 169-1.

²⁷This chapter, pp. 98-100.



Much of the difficulty in recognizing interest as a payment for a service comes about because a service, particularly a financial one is intangible and difficult to perceive. Thus, the Department of Commerce speaks of government interest payments fluctuating without corresponding changes in output.²⁸ Gerhard Colm in discussing the problem of war debt interest feels that if this interest is included the sum of incomes will be greater than the sum of consumers' and investors' goods plus government services since, "there exists no compensating item in the social product of the same period."²⁹ Also, here Colm does not recognize that services would also increase by the amount of the interest payment. Kuznets, in continuing his parallelism between the corporation and the government says, "The current paradox that an increase in government loans would, if payments on such loans are included in national income, serve to raise national income presents no puzzling aspects if it is realized that a rise in indebtedness of private industry would similarly raise the volume of national income."³⁰ And furthermore Milton Gilbert claims that excluding government interest payments is reminiscent of the notion that a service is non-existent because it is intangible.³¹

²⁸This chapter, p. 94.

²⁹Colm, op. cit., p. 198.

³⁰Simon Kuznets, "National Income," Readings in the Theory of Income Distribution, p. 13.

³¹Milton Gilbert, "United States National Income Statistics," Economic Journal, April, 1943, p. 82.

When the United States entered the second world war it was interested in preserving the capital of the nation and the American way of life. Government expenditures on an unprecedented magnitude were necessary. The government had two main alternatives available to finance these expenditures--to tax or to borrow. From 1940 to 1945 the gross federal debt grew to a terrific \$279 billions.³² Why didn't the government finance its growing expenditures through taxation and avoid this huge debt? If it had done so the effect on the productive effort of the nation would have been devastating. Colin Clark asks, "How high can taxes rise without economic trouble?" And, "Is there a discoverable point where the burden of taxes becomes insupportable--or supportable only by such means as inflation?"³³ His answer is that "the safe political and economic limit of taxation is somewhere near 25 per cent of the national income."³⁴ On examination, taxes as per cent of national income ran about 25 per cent in 1941 and reached about 29 per cent in the years of 1943 and 1945.³⁵ At the same time, government expenditures as per cent of national income ran over 50 per cent in the years of

³²Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, November, 1954, p. 1182.

³³Colin Clark, "The Danger Point in Taxes," Readings in Economics, edited by Paul A. Samuelson, Robert L. Bishop, John R. Coleman, p. 74.

³⁴Ibid., p. 78.

³⁵Figures derived from the United States Department of Commerce, National Income Supplement, 1954, pp. 171, 163.

1943, 1944, 1945.³⁶ To have financed this rate of expenditure through additional increases in the rate of taxation would have had serious detrimental economic and political effects. If this were not true there would have been no reason to pay bondholders for their service.

Just as it was to the nation's advantage to create the debt, it is to its advantage to continue the debt. As the National Bureau of Economic Research points out, if the taxpayers do not feel the privilege of not paying off the debt is worth while, they can always pay it off.³⁷ However, Denison protests that the "privilege of not paying off the debt cannot legitimately be considered a product; or viewing the problem from the income side, that the funds lent to the national government are not used in production."³⁸ On the other hand, Milton Gilbert asserts that,

Interest is paid in the current year because the community considers it more convenient to do so than to pay off the debt. By giving Government the use of his money for the current year, the bondholder renders a service, and through use of the money the Government receives a service. That service should be counted in national product, and the income derived from rendering it counted in the national income.³⁹

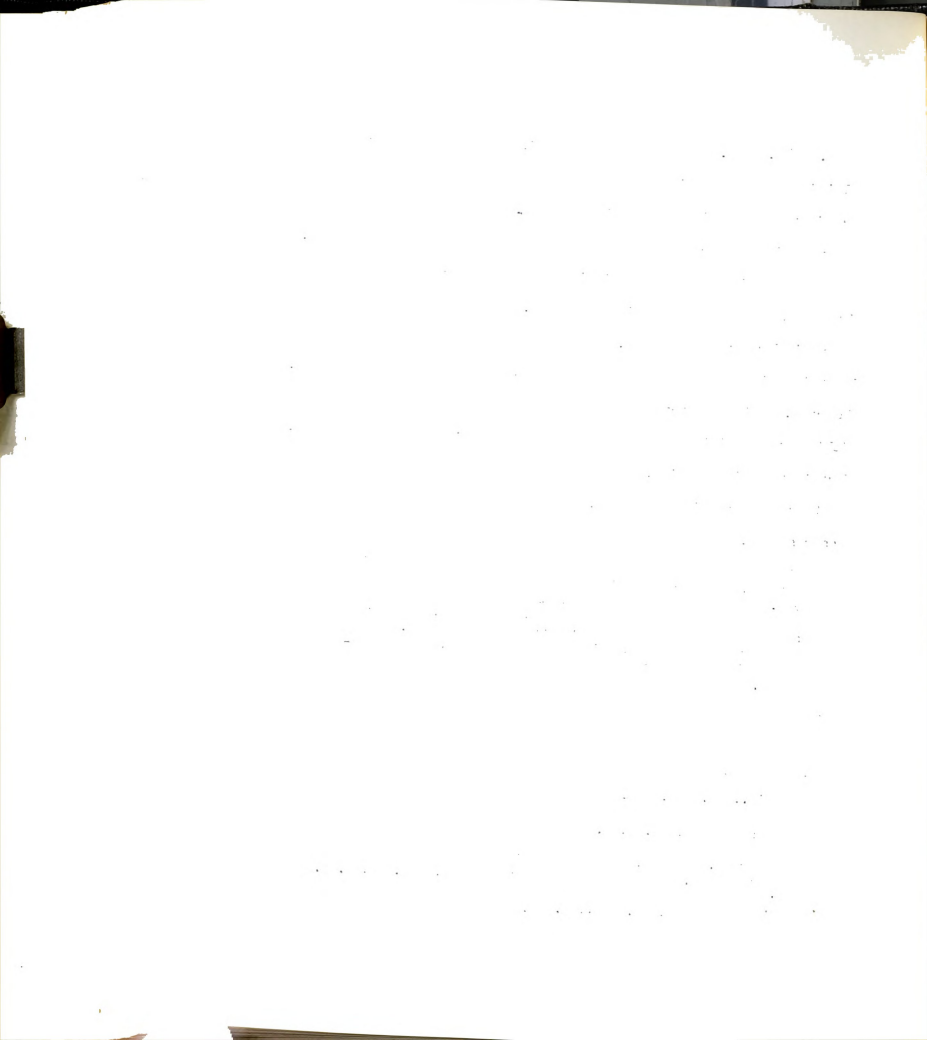
While lending does not have to be confined to production for a service

³⁶Ibid., pp. 173, 163.

³⁷This chapter, pp. 3, 4.

³⁸Edward F. Denison, "Report on Tripartite Discussions of National Income Measurement," Studies in Income and Wealth, vol. 10, p. 9.

³⁹Milton Gilbert, op. cit., p. 81.



to be rendered, government interest payments could be defended on these grounds. Kuznets states that the exclusion of debt interest depends upon an "identification of a debt with a specific tangible capital good and upon failure to recognize that the input of any resource-factor cannot be properly measured except within the complex of all the factors that in combination yield a final product."⁴⁰

Furthermore, the alternative to the debt's continuance is its retirement. The debt has not been retired because the nation has found it inadvisable to do so. The process of debt retirement by orthodox means would require a budgetary surplus. The deflationary effects of such action on production and income would be so serious that no steps toward its retirement have been taken despite all campaign promises to the contrary.

Not to be overlooked is the fact that the debt services the economy with the bulk of its money supply. Total money in circulation increased from \$7.6 billions in 1939 to \$30.7 billions in 1953, while at the same time the U. S. Securities held by the Federal Reserve Bank increased from \$2.6 billions to \$27.1 billions.⁴¹ Much of this increase in the money is attributable to the increase in this part of the Reserve Bank Credit. Even though this type of financing resulted in the evils of inflation, we noted above that this evil was less than its alternative

⁴⁰ Simon Kuznets, "National Income: A New Version," Review of Economics and Statistics, August, 1948, p. 159.

⁴¹ Board of Governors of the Federal Reserve System, ibid., pp. 1163, 1156.

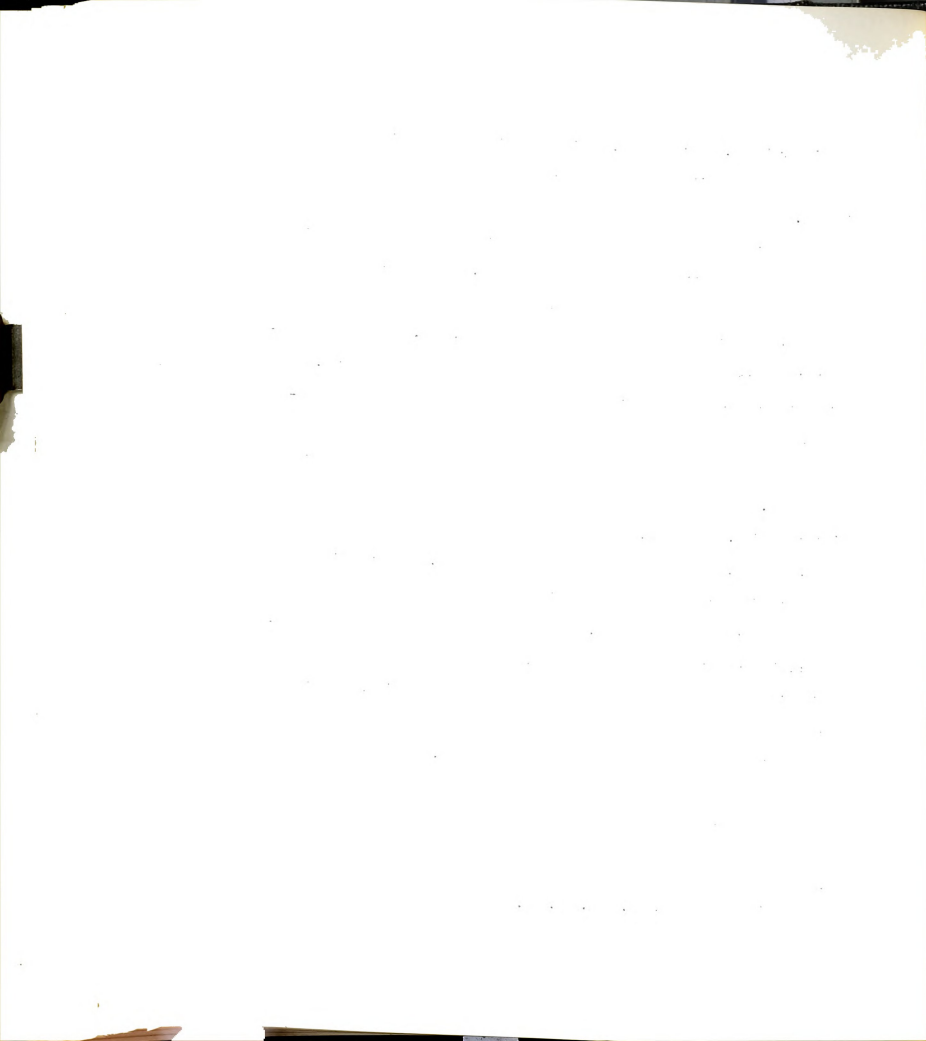


of higher taxes. Furthermore, retirement of the debt would retire the money supply with its consequent detrimental effects on production and income.

Also much of the reasoning on the war debt depends on the implicit assumption that borrowed funds finance the war. The government takes its revenues from both taxation and borrowings and uses them to finance both war expenditures and expenditures for roads, etc. It does not earmark its borrowed funds and allocate them to its war expenditures. In view of the paramount position of these expenditures it could be contended that they would be financed largely through taxation and that the government borrows to finance the residual and also its expenditures for roads. On these grounds much less of the debt could be considered 'unproductive.' However, as Milton Gilbert says, "The origin of the debt, however, seems to me to be wholly irrelevant. Interest is paid in the current year because the community considers it more convenient to do so than to pay off the debt."⁴² After examining all the above arguments, it becomes apparent that interest is a payment for a service which is not always perceived because of its intangibility, but since it is a payment for a service it is true income and therefore should be counted in the national income and product totals.

Even though interest payments represent true income and should be counted in national income and product totals in terms of a welfare

⁴²Milton Gilbert, op. cit., p. 81.



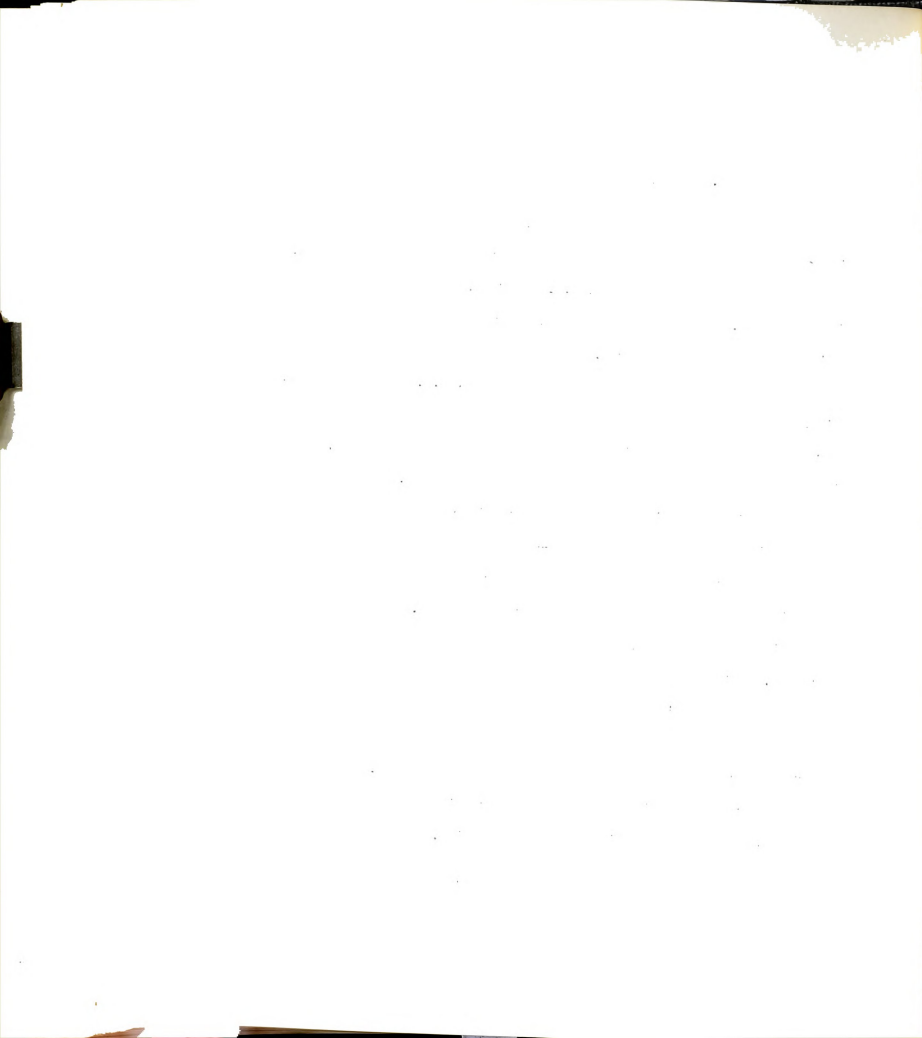
index, it might well be argued that the amounts involved are insignificant. Undoubtedly, the absolute totals themselves are meaningless when such large omissions as the services of the housewives, pain costs of work, etc., are considered. Therefore, it is changes in these totals that are the significant thing. Thus, if government interest payments are consistently included or excluded, probably little harm is done their ability to measure changes in welfare. However, sharp changes in the proportion of national income going into interest payments would result in impairment of this capacity if these payments are excluded, whereas if they are included no such impairment would occur.



VIII. THE INTERMEDIATE PRODUCT OF GOVERNMENT

According to the welfare criterion, national income or net product is equal to the total production of consumer goods and capital goods, since both lead to satisfaction, i.e., welfare, either immediately or in the future. As noted in Chapter I, production takes place in both private and government spheres. This chapter is concerned with that part of government product that is intermediate, i.e., government services to business which if counted as both government product and as part of the product of business would result in double counting. It is only net product that corresponds to social welfare.

The problem of eliminating the intermediate product of government is essentially one of classification--putting a label on government intermediate product and government final product with only the latter being included in national income and product totals. The government spends its money for transfer purposes and for purchases of goods and services. While it is common ground that transfer payments do not form a part of the nation's income and should be excluded from it, that part of government purchases of goods and services that is intermediate product and should be excluded is the subject of much controversy. In seeking a solution for the removal of government intermediate product several approaches are used which will be discussed below.



A. The Specific Approach

Under the specific approach each item is examined individually and a classification decision made as to whether it is a part of the government product that is final or intermediate. Kuznets maintains that this approach is the only theoretically acceptable one.¹ However, in practice, most authorities are well aware of the subjectiveness involved in the process. Many authors have expressly stated their trepidations concerning the arbitrariness involved in the process of enumeration. For example, Kuznets says, "no classification of government activities and expenditures by business or ultimate destination can properly be made."²

. . . it will of course be impossible exactly to allot the costs to production and consumption. . . . frequently we must be satisfied with establishing the fact that costs are common, and that they can only be allotted to producers and consumers on some conventional basis. The main point is then to follow some definite, though arbitrary, principle.³

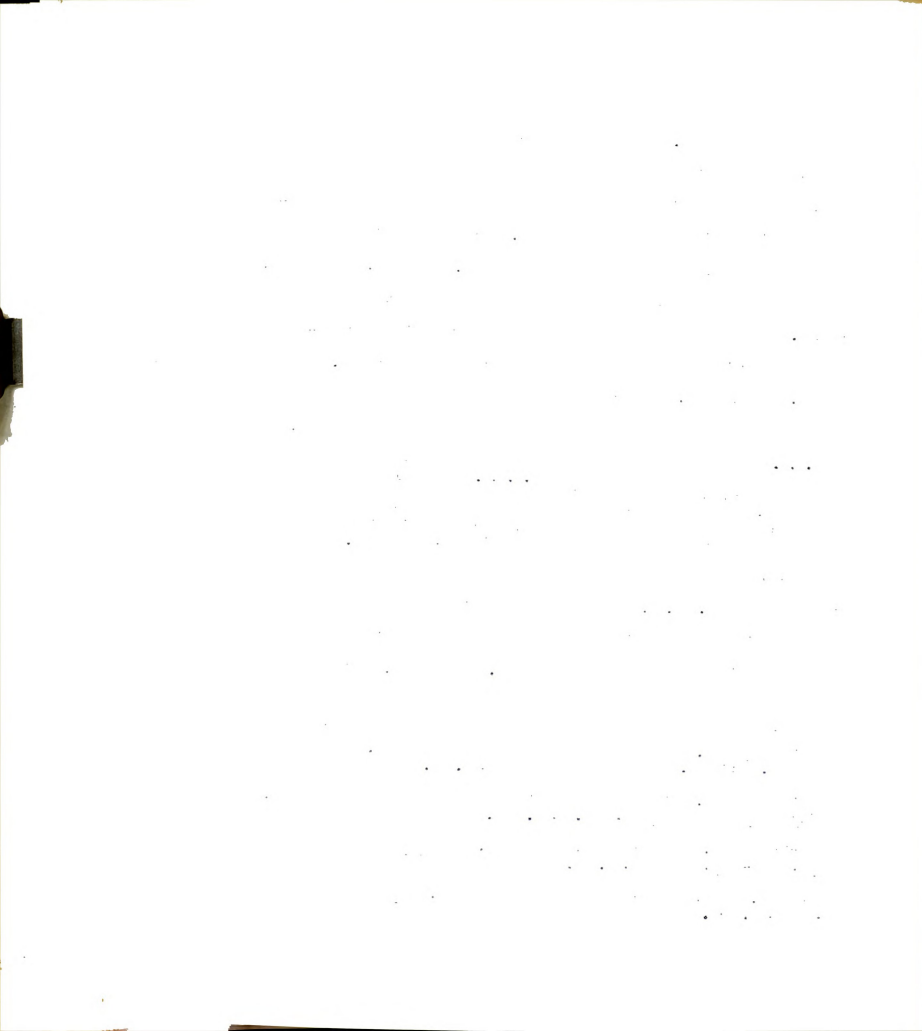
Others also decry the lack of a criterion for distinguishing intermediate from final product. J. R. Hicks observes that "we have no reliable criterion by which to distinguish that part of output of public services which is not final output from that which is."⁴ Edward F. Denison

¹Simon Kuznets, "Government Product and National Income," Income and Wealth, Series I, edited by Erik Lundberg, p. 91.

²Simon Kuznets, "Discussion of Colm's Public Revenue and Expenditure," Studies in Income and Wealth, vol. I, p. 235.

³Eric Lindahl, Einar Dahlgren, Karin Kock, National Income of Sweden, 1860-1930, Part One, p. 12.

⁴John R. Hicks, "The Valuation of Social Income," Economica, May, 1940, p. 118.



points to the difficulty of the task by saying,

Unfortunately, no one has ever furnished a definitive criterion by which such intermediate service can be recognized. This is not surprising since there is no way of identifying them except by deductive reasoning. Nothing in the way of records can furnish a solution.⁵

Milton Gilbert et al. speaking in defense of the Department of Commerce argue that conventions must be adopted since no precise line can be drawn between final and intermediate product simply by observing the use to which they are put. Hence, arbitrary rules must be applied and consequently any measure of total production must be somewhat conventional.⁶

On the other hand, while Gottfried Haberler and Everett Hagen are in substantial agreement, they are somewhat more presumptuous about solving the problem. They observe that while allocations must be arbitrary, these decisions "are fewer than is commonly supposed."⁷ And later J. R. Hicks claims his wife demonstrated to him that the classification of public expenditures between intermediate and final product "was a much less formidable task than I had supposed."⁸

⁵Edward F. Denison, "Reply--to Messrs. Copeland, Stine, and Fabricant," Studies in Income and Wealth, vol. X, pp. 73-74.

⁶Milton Gilbert, et al., "Objectives of National Income Measurements," Review of Economics and Statistics, August, 1948, pp. 183-4.

⁷Gottfried Haberler and Everett E. Hagen, "Taxes, Government Expenditures, and National Income," Studies in Income and Wealth, vol. VIII, p. 25.

⁸See Kuznets, "Government Product and National Income," p. 188.

Perhaps one of the most daring attacks on this classification problem was that undertaken by R. W. Nelson and Donald Jackson, who, while recognizing the inherent difficulties, felt that the job of classification must be done if a definite answer is to be provided.⁹ But they state,

If the principles of allocation we have adopted should be challenged by persons who make radically different basic assumptions, or who have contrary philosophies of government, it is likely that a hopeless impasse must ensue--an impasse from which there is no escape either by compromise or by appeal to any objective standards. In the face of a challenge to our own position, we can only say in its defense that to us it seems logical and reasonable--a contention, however, that is not likely to convince the critic.¹⁰

The principles of enumeration used by Nelson and Jackson are consequently quite arbitrary. General government expenditures--Army and Navy, courts, etc.--are apportioned on a fifty-fifty basis between consumption and production on the grounds that each member of the body politic is a dual personality, a consumer and a producer. In apportioning highway benefits, gasoline consumption was accepted as the measure of use. In the allocation of educational expenditures they accepted the popular doctrine that education is primarily consumption but gave token recognition to possible utilitarian motives by the allocation of one and three per cent respectively to farm and urban intermediate product.

⁹R. W. Nelson, and Donald Jackson, "Allocation of Benefits from Government Expenditures," Studies in Income and Wealth, vol. II, pp. 317-28.

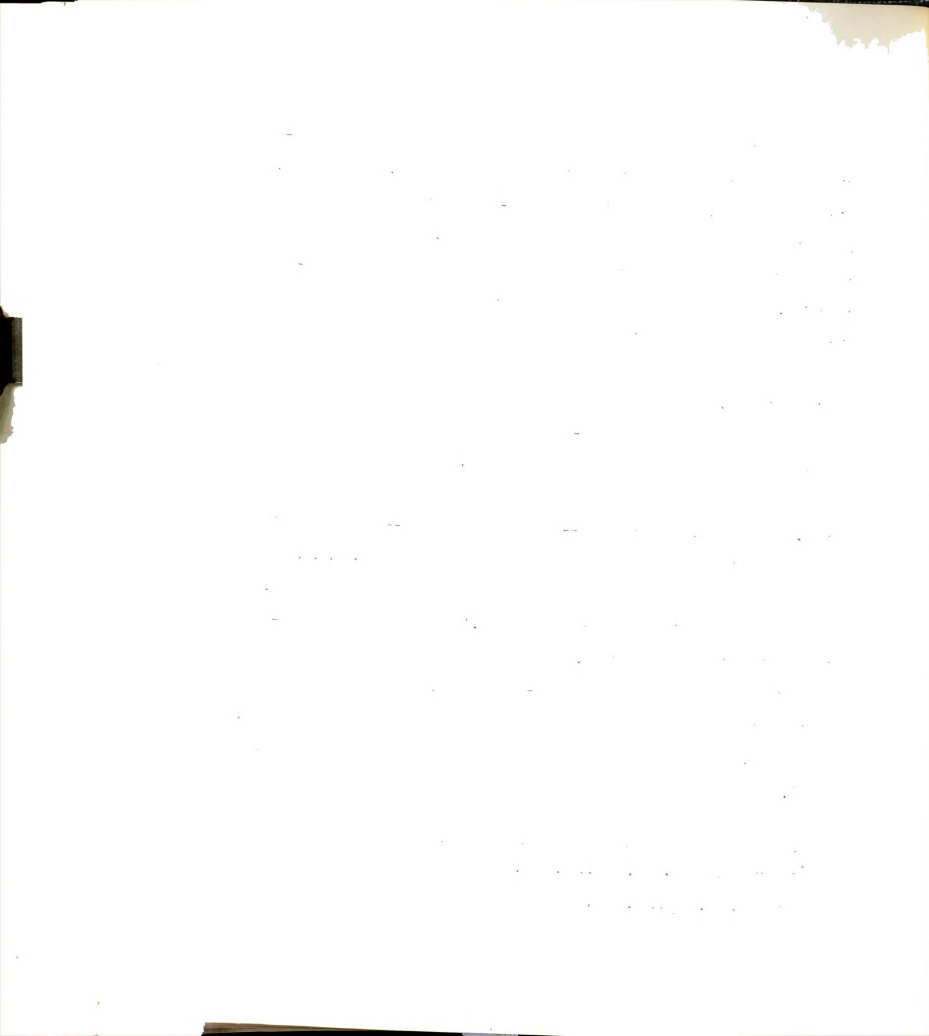
¹⁰Ibid., p. 327.

An examination of other attempts at enumeration reveals the significant differences in the philosophies of the enumerators. For example, Lindahl, Dahlgren, and Kock utilize a fifty-fifty principle, but its scope is broader than its use by Nelson and Jackson. After classifying some local government expenditures such as health and welfare as consumption, the remaining local government services and "all [national] Government services" are distributed on the basis of half to consumption and half to intermediate product with the latter being excluded from national income.¹¹

The treatment of the general-purpose (the most typical) services of government appears to be the most controversial. For one thing there is not complete agreement as to the expenditure items that comprise this group. Shoup says, "A large part--perhaps a major part--of government's service is neither a consumer good nor a service to business. . . . Examples are maintenance of the armed forces and a system of law courts. These may be termed 'general-purpose services.' The list of these services varies with time and place."¹² While the two cases examined above would divide these services on a fifty-fifty basis, most authorities are inclined either to completely exclude or completely include these services. For example, Kuznets and Shoup exclude them while Colm includes them (see below). And others such as Haberler and Hagen would consider services

¹¹Lindahl, et al, op. cit., p. 227.

¹²Shoup, op. cit., p. 266.



of the court system and convoy services of the navy as intermediate products but war costs in general would be final product.¹³ Edward F. Denison would count government expenditures for war as final product but expenditures for general government administration, police and fire protection, welfare and relief, recreation, aids to agriculture, pensions to government employees, etc., could be considered either in part intermediate or final product depending on the views of the individual making the decision. He argues that these services constitute a minor part of government services and thus allocation decisions are unimportant.¹⁴

Some authors make a three-way division of government expenditures--general-purpose services, services to business, and services to consumers. Carl Shoup, who makes this three-way division, notes that it has not been advocated by national income analysts in general, but that it was utilized in the official estimates in Germany in the nineteen-thirties.¹⁵ The German or Reichsamt theory excludes government expenditures for "state purposes." While this theory holds that all government expenditures are either for consumption or cost services, general-purpose services are excluded on the grounds that it is impossible to allocate them properly.¹⁶

¹³Haberler and Hagen, op. cit., p. 25.

¹⁴Denison, op. cit., p. 74.

¹⁵Shoup, op. cit., p. 269.

¹⁶Ernest Doblin, "Measuring German National Income in Wartime," Studies in Income and Wealth, vol. VIII, p. 183.

Shoup also eliminates these services from national income totals but for different reasons. For Shoup, these expenditures are costs or burdens and not income. Thus a country that has to spend more on coal to keep its government offices warm is to that extent worse off than a government in the tropics. He continues, "The money that a government must spend on building dikes and pumping to keep out the sea represents an economic burden, not a benefit."¹⁷ And coal mined to produce ammunition would be analogous to coal mined to operate the pumps to keep out sea water no matter how essential such service may be if consumer goods are to be enjoyed.¹⁸

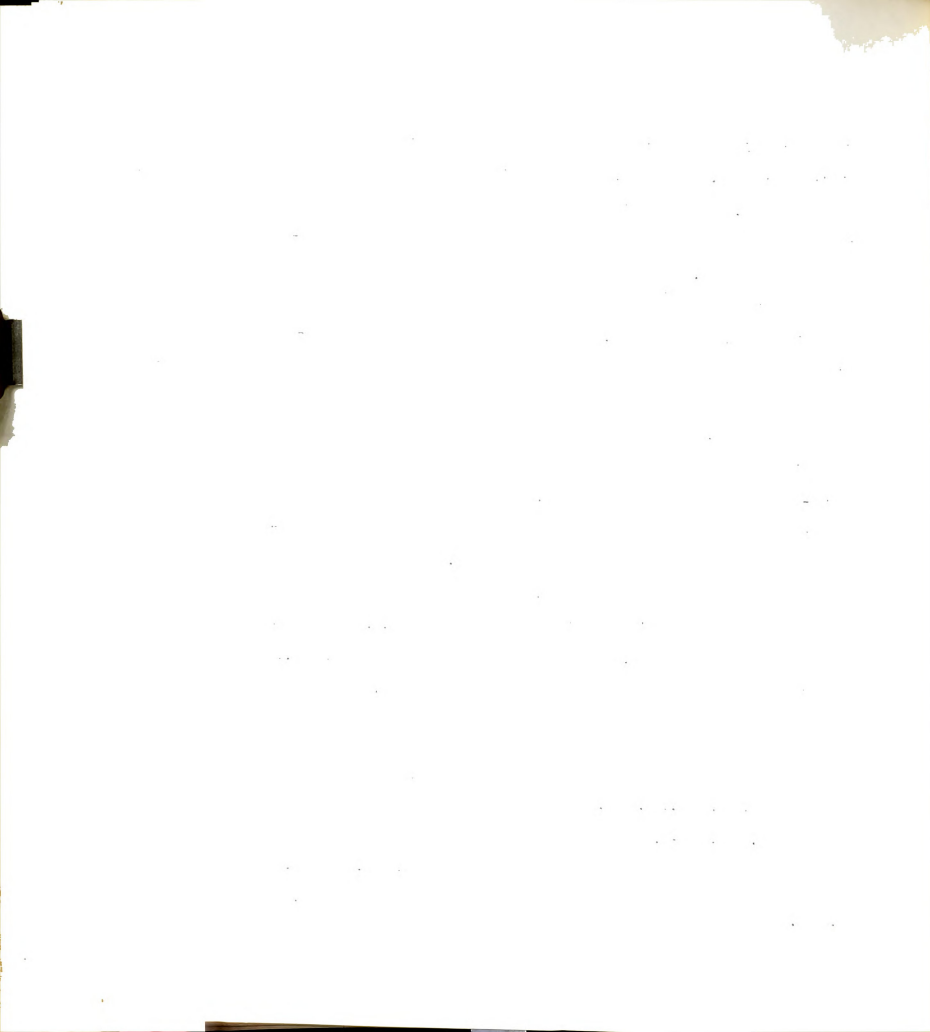
Simon Kuznets in an article written in 1951 also arrives at a three-way split of government spending.¹⁹ Earlier, in 1937, he had expressed pessimism concerning the feasibility of distinguishing government services to business from those to consumers. He argues that while in some cases it may be easy in others, "if we consider activities that constitute the government's most distinctive functions, i.e., those performed by the army and navy, by the judiciary, by civil servants, etc., the distinction indicated above becomes next to impossible."²⁰ These functions have such a broad reference to the needs of society at large

¹⁷Shoup, op. cit., p. 267.

¹⁸Ibid., pp. 267-9.

¹⁹Kuznets, "Government Product and National Income," pp. 178-244.

²⁰Kuznets, "Discussion of Colm's Public Revenue and Expenditure," p. 234.



that they become an "indissoluble amalgam" of services to business and services to individuals.²¹

In his later article Kuznets excludes government general-purpose services on the same grounds as Shoup--that they are costs. He contends that "National income is a measure of net output of economic activity within the given framework, not of what it would be in a hypothetical absence of the latter."²² Also he says,

the flow of services to individuals from the economy is a flow of economic goods produced and secured under conditions of internal peace, external safety, and legal protection of specific rights, and cannot include these very conditions as services. . . . There is little sense in talking of protection of life and limb as an economic service to individuals--it is a pre-condition of such service, not a service in itself.²³

He continues his argument for exclusion of government general-purpose services by stating that

It is difficult to understand why the net product of the economy should include not only the flow of goods to ultimate consumers, but also the increased cost of government activities necessary to maintain the social fabric within which the flow is realized.²⁴

Thus all three authorities examined above in making their three-way split of government expenditures reject general-purpose services of government from their national income totals although the Reichsamt's rationale differs from that of Kuznet's and Shoup's.

²¹Ibid., p. 235.

²²Kuznets, "Government Product and National Income," p. 193.

²³Ibid., p. 193-4.

²⁴Ibid., p. 194.



One authority, Gerhard Colm, who also makes a three-way division of government expenditures, includes the general-purpose expenditures of the government in their entirety. He calls them expenditures for political purposes and would include in this group those expenditures made for the political organization's own sake, for national prestige and power, or for the protection of the social order such as national defense, justice, department of the interior, etc.²⁵

Various philosophies are also evident in the classification of such expenditures which result in joint costs, e.g., roads. Haberler and Hagen suggest "Yardsticks as objective as those cost accountants use . . ." such as the sum of truck ton miles set against passenger miles by means of some weighting factor.²⁶ Nelson and Jackson's use of gasoline consumption as an index was noted above. Lindahl's et al. fifty-fifty principle would apply to roads. Denison would simply rule government spending for roads as final service. He includes roads in a group of items that "cannot be considered services to business in any relevant sense."²⁷

In the classification of such expenditures as health and education there is considerable agreement. As Haberler and Hagen say, ". . .

²⁵Gerhard Colm, "Public Revenue and Public Expenditure in National Income," Studies in Income and Wealth, vol. I, pp. 209-214.

²⁶Haberler and Hagen, op. cit., p. 25.

²⁷Denison, op. cit., p. 74.

education, though in a real sense investment in human capacities, is always classed as a consumption expenditure."²⁸ But even here, an exception can be found, namely Nelson and Jackson who allocate a minor part of expenditures for education to intermediate product.

After this summary of conventions used in the allocation of government expenditures between final and intermediate services it is easy to feel sympathetic toward Denison's statement that

Any thousand individuals sitting down to allocate these expenditures between services to individuals and services to business would inevitably reach one thousand answers, and none could adduce objective criteria to defend his answer against the others.²⁹

Probably the most intensive search for an objective criteria for identifying final government product was undertaken by Kuznets.³⁰ While Kuznets sets up principles for determining the whole of the government product--consumers' outlay and government capital formation, attention' will be given here only to his criteria for distinguishing final from intermediate product. For this purpose he sets up three criteria of government final product. His first criterion rules out government enterprise functions by stating that "the individual recipient of the service from government pays no price or only a token price."³¹ His

²⁸Haberler and Hagen, op. cit., p. 25.

²⁹Denison, op. cit., p. 74.

³⁰Kuznets, "Government Product and National Income," pp. 192-200.

³¹Ibid., p. 192.

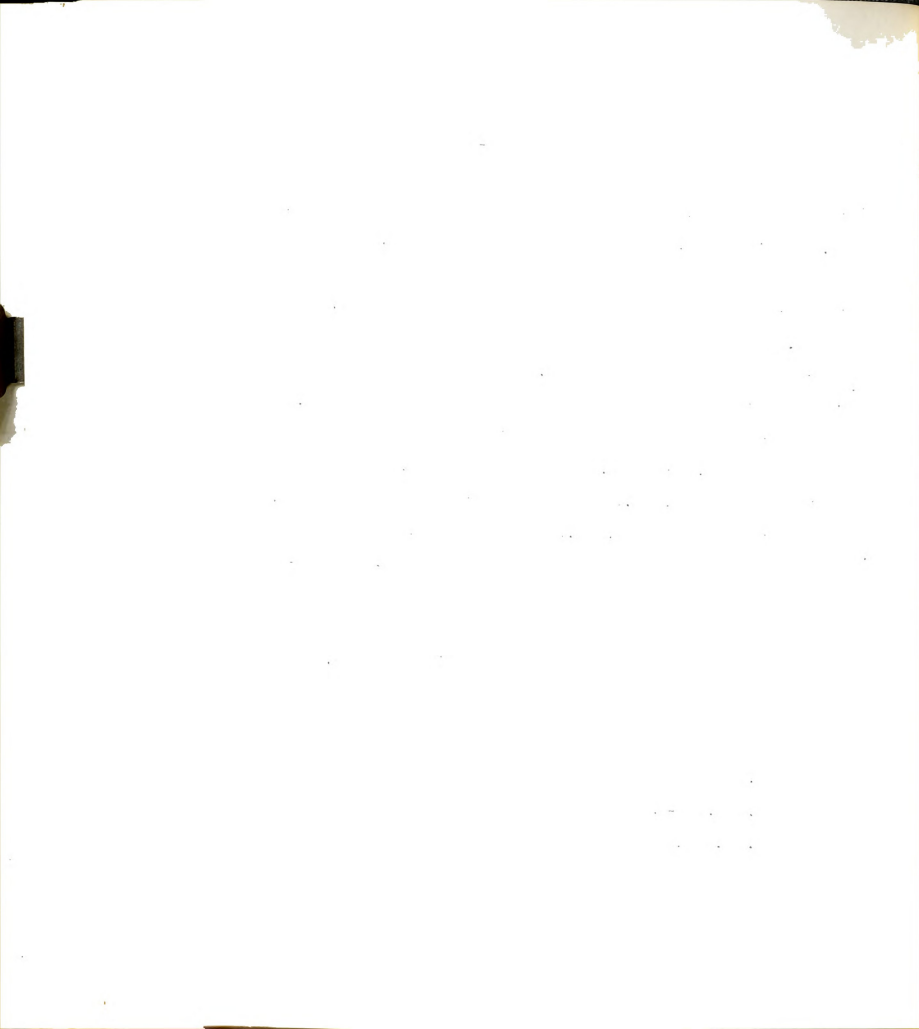


second criterion eliminates government general-purpose services by stating that the service must "be available to the individual only upon his overt initiative, rather than to him as a member of a social group, who, as an individual, may be quite unaware of the service."³² However, this second criterion is not sufficient since it does not fully exclude all government activities designed to maintain the social fabric. For example, an individual may appeal to a court the services of which Kuznets does not consider a final good. Therefore, he introduces his final criterion that there must be an analogy to the private markets. Only government services which have a parallel in the private market are to be included. Education, medical services, parks, theaters, public tourist centers, etc., would be included; while judicial, police, external defense, legislative, etc., would be excluded. Kuznets admits that "the third criterion breaks down if stretched too far."³³ "Wide-spread" use in private markets is called for since if any appearance on private markets is used some activities now excluded such as the services of police would have to be included as people do hire bodyguards.³⁴

³²Ibid.

³³Ibid., pp. 195-6.

³⁴Ibid., p. 196.



B. The 'Despair' or 'Wholesale' Approach

Kuznets calls this approach "one of total despair" or the "whole-sale" approach since it involves either wholesale acceptance or rejection of government product on the grounds that there is no reliable criteria for distinguishing final government product from intermediate government product.³⁵ It is interesting to note that both the United States and Great Britain by putting government in the role of ultimate consumer, have adopted this approach in their official estimates.³⁶ The United States Department of Commerce adopted this method in 1947. Under attack by Kuznets, Milton Gilbert defended this practice by noting the government does not buy for resale in the market, hence all its purchases are final. Government purchases consist essentially of goods and services provided on behalf of the population as a whole, which it has found better to secure collectively than individually.³⁷

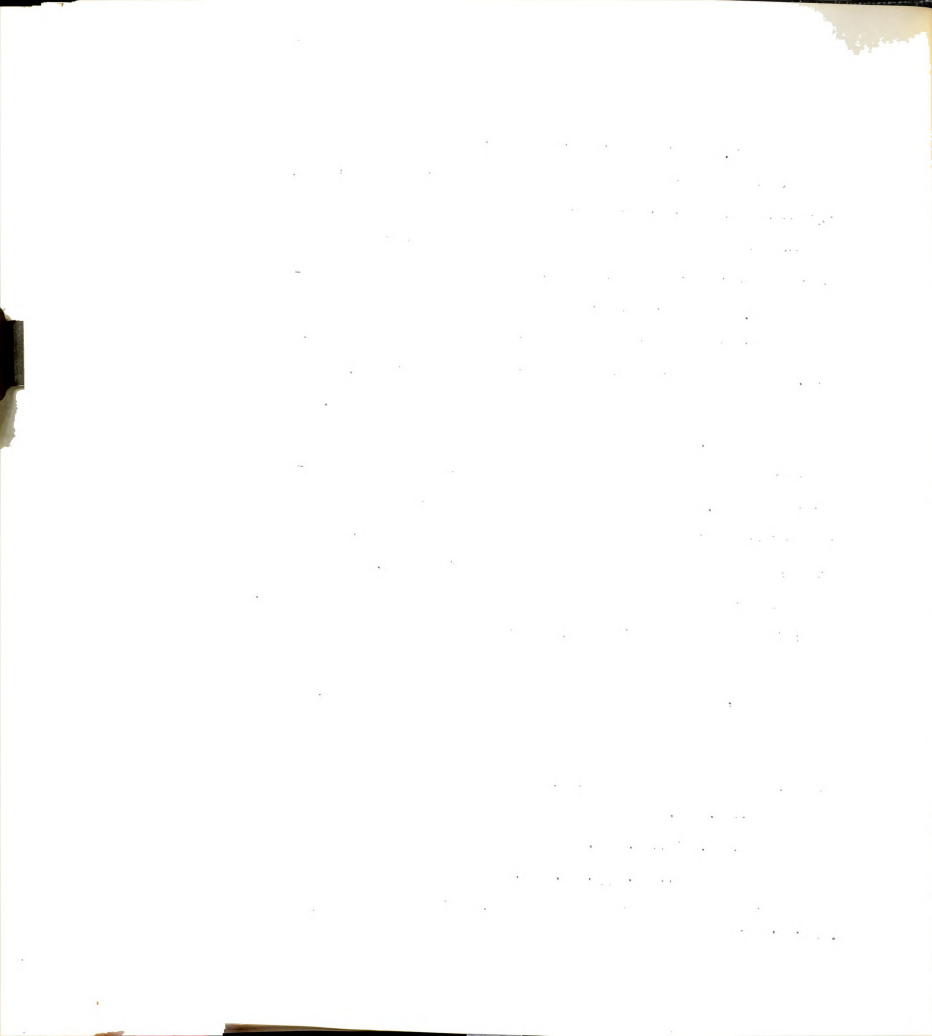
These arguments are repeated in the 1954 National Income Supplement. To distinguish final from intermediate product the Department states, "There emerges a working definition of final product as a purchase that is not resold, and of intermediate product as one that is resold."³⁸ After restating the collective purchase argument the Department reflects

³⁵Ibid., p. 186.

³⁶Shoup, op. cit., p. 253.

³⁷Gilbert et al., op. cit., p. 183.

³⁸United States Department of Commerce, National Income Supplement, 1954, p. 30.



its defeatist attitude,

. . . it is not feasible from a purely physical standpoint to examine every purchase by consumers, government, and business so as to determine which were simply means of facilitating production, and hence intermediate, and which served an end use, and hence were final products. As a practical matter, one must generally deal with types of buyers and categories of goods and services.

But more important, one must place basic reliance on a broad convention because in most cases in point there is no alternative. No precise line can be drawn between final and intermediate products from mere observation of the nature of the product or the uses to which they are put. . . .

For this reason any measure of total production must be somewhat conventional.³⁹

No doubt, the official policies of both the British and American estimators of national income arose out of the tripartite meetings held in 1944. Denison reporting on the discussions says,

No deduction from the value of governmental services will be made to eliminate indirect governmental services (governmental services to business). None of the participants believed such a distinction feasible, and some were not convinced of its necessity or desirability.⁴⁰

J. R. Hicks also accepts the defeatist approach. In a discussion of Colin Clark's formula for computing national income he observes,

Some part of the output of public services is not final output, but plays its part in production by facilitating the production of other goods (maintenance of law and order,

³⁹Ibid., p. 38.

⁴⁰Edward F. Denison, "Report on Tripartite Discussions of National Income Measurement," Studies in Income and Wealth, vol. X, p. 11.



roads used for business purposes, and so on). To reckon this as well as the goods whose output is facilitated would involve double counting. I do not see how we can hope to do anything about this in practice, for we have no reliable criterion by which to distinguish that part of the output of public services which is not final output from that which is.⁴¹

And at a later date he argues for the inclusion of all government activities on the grounds that it is best to measure what one can measure.⁴²

On the other hand, Solomon Fabricant suggests the "complete omission" of government expenditures as a solution to the problem of intermediate product, although he "would prefer some rational, even if rough, estimate of an item to its complete omission."⁴³ He considers the figures of the Department of Commerce and the British and Canadian estimates too close to "any old figure," so he would publish totals exclusive of government product and let it be known that the published totals were incomplete.⁴⁴

C. The Tax Payments Approach

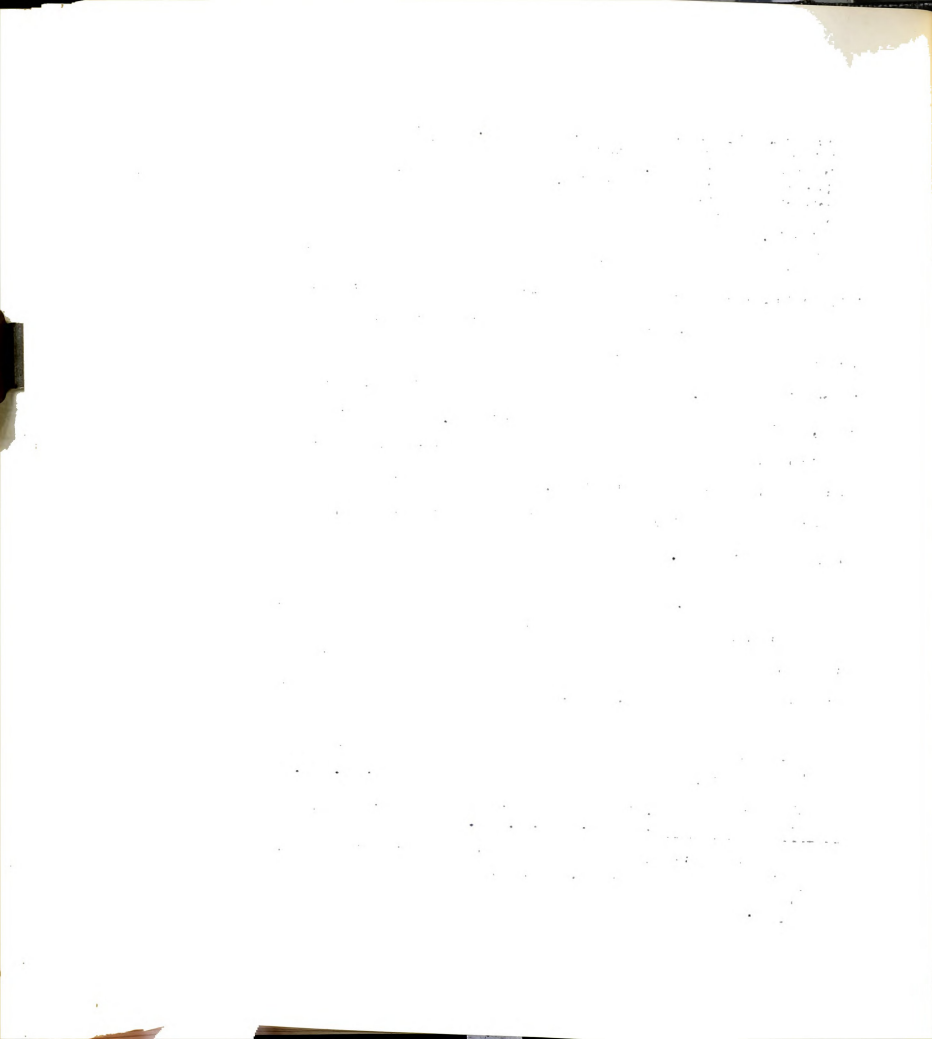
One of the foremost exponents of this approach is Kuznets who likens the government to a corporation and considers taxes the prices paid for government services. Thus, payments made by business enterprises

⁴¹See Kuznets, "Government Product and National Income," p. 187.

⁴²See Simon Kuznets, "National Income: A New Version," Review of Economics and Statistics, August, 1948, p. 156.

⁴³Solomon Fabricant, "Comment on Denison's Tripartite Discussions," Studies in Income and Wealth, vol. X, p. 57.

⁴⁴Ibid.



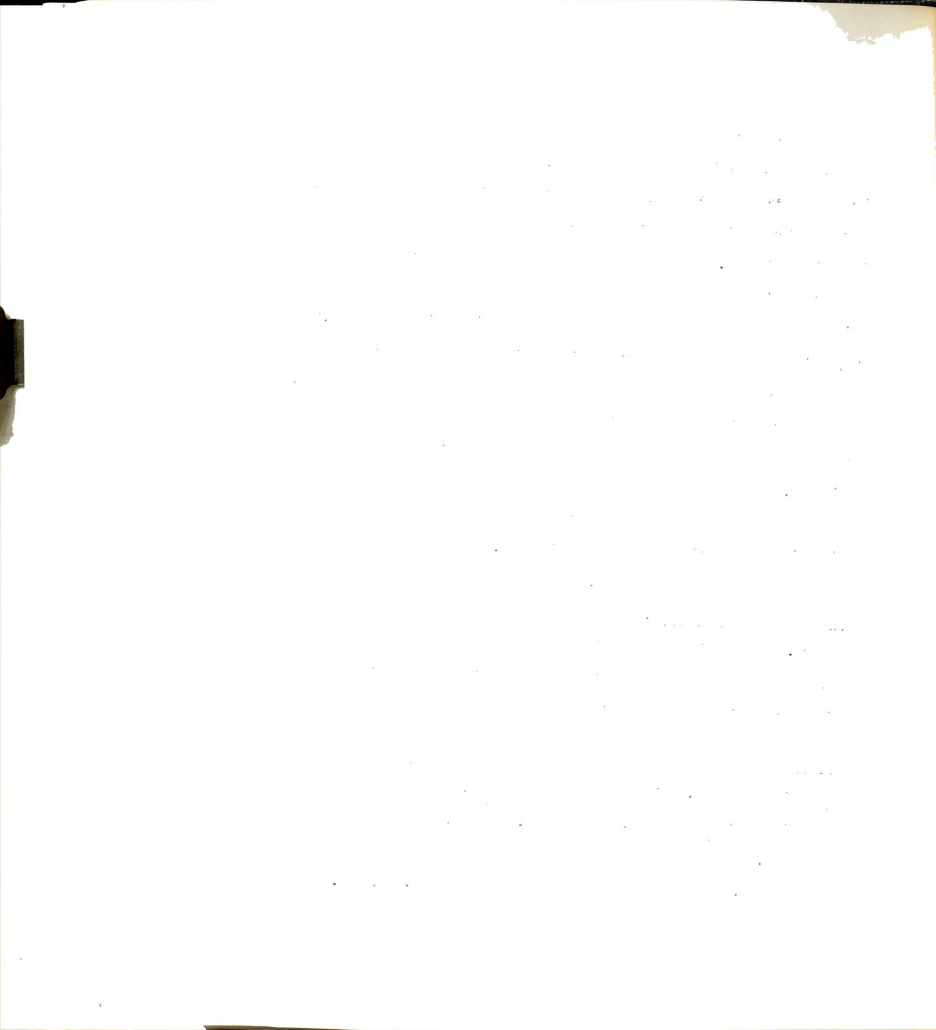
to governments are considered production expenses and are excluded from the net income originating in business and consequently from national income whereas payments to the government by individuals are treated as payments for services to individuals as individuals and are included in national income.⁴⁵ Kuznets contends that the "distinction between current services of government agencies rendered to business enterprises and those rendered to ultimate consumers is to impracticable."⁴⁶ Thus this approach shares the defeatist attitude but feels that the convention of assuming direct taxation as measuring that part of government product that is final and indirect of business taxation as measuring that part of government product that is intermediate as the more desirable.

This approach was used by the National Bureau of Economic Research in its first study of national income in 1921. It was also used by the Department of Commerce until 1947.⁴⁷ In his book entitled National Income and Its Composition, Kuznets introduced a second variant of this approach. Under this approach direct taxes still measure government final product but government capital formation is measured directly by making a comparison of real capital formation with changes in the

⁴⁵Simon Kuznets, "Discussion of Means et al.s' Problems in Estimating National Income Arising From Production by Government," Studies in Income and Wealth, vol. II, pp. 292-306.

⁴⁶Ibid., p. 296.

⁴⁷Kuznets, "Government Product and National Income," p. 188.



government debt. The first approach assumed that government capital formation was equal to deficits. He suggests as a reason for this change, "But when, as a consequence of the drastic depression, huge government deficits and large transfer activities (in the form of relief) made their appearance, it became dangerous to assume a neat correspondence between taxes and government product . . ."⁴⁸

D. Evaluation

The foregoing portion of this chapter describes three approaches to the problem of eliminating duplication and arriving at a net income total. The specific approach attempts to eliminate government intermediate product through the process of classification. However, the numerous comments cited above point out that this process is difficult if not impossible and that any classification will be arbitrary and conventional. The problem of drawing the line between final and intermediate product obtains whether the household sector, business sector, or government sector is under consideration. W. W. Hewitt discusses the intricacies of determining final product in all sectors and points to Hobson's evaluation through the balancing off of utility against disutility.⁴⁹ But, as was noted in Chapter II on the meaning of income, true income is net satisfaction but this is something that is immeasurable and the problem becomes one of measuring that part of the national income which lends itself to measurement.

⁴⁸Ibid., p. 189.

⁴⁹William W. Hewitt, "Discussion of Carl Shoup's Distinction between 'Net' and 'Gross' in Income Taxation," Studies in Income and Wealth, vol. I, pp. 296-7.

Even here, the obvious is not always so obvious. An examination of specific items to be classified will help to illustrate the nature of the problem. The Department of Commerce says,

It would be easy, for example, if all consumer purchases were for goods like Sunday clothes and holiday dinners, which are obvious elements of the good life, and if all business purchases were raw materials for further processing, which are obvious intermediate goods. Between these ~~two~~ extremes, however, there is a wide range of purchases for which neither the motivation nor the use is so clear-cut and which must be placed in one category or the other by somewhat arbitrary rules.⁵⁰

The distinction between the dinner that is eaten purely for enjoyment and the one that is eaten to maintain health, energy, and morale necessary for efficient work could become quite fine. Classifying education as consumption which is the general rule is also open to serious question. The strong emphasis on the technical and scientific fields in higher education and the attitude of college students toward getting his degree indicates that a college education is a means toward an end rather than an end in itself. Certainly the trained personnel that flow from our schools and colleges form an important national asset. Other examples can be cited to show that the concept of what constitutes final product is far from clear. Housing, ordinarily considered final product, could be interpreted as an expense necessary to make a living. Transportation on subways could be viewed in the same light. Carl Shoup points to the arbitrariness involved in making these decisions in citing the case of

⁵⁰United States Department of Commerce, op. cit., p. 38.



an automobile company paying out money for medical services to employees in which case it is counted as an expense but if an employee injured in the plant goes to a doctor on his own to obtain relief, it is counted as final product.⁵¹

The problem of deciding what is and what is not final product is again illustrated by Shoup and Kuznets, two authorities who reject government general-purpose services from final product on the grounds that these services are costs and that in terms of the welfare argument, a country that requires more of these services is worse off on that account. Earl Rolph feels that these arguments are irrelevant. He remarks that if it did not rain we might not need roofs on houses and if we never got ill we would not need doctors.⁵² Richard Stone similarly contends, "How nice it would be if we were never ill and never needed a haircut!"⁵³ He continues to argue that ~~these~~ government services are services rendered collectively to the taxpayers of the community. Joseph Mayer also supports this point of view by holding that the drawing of a line between the citizen and the consumer is meaningless and that all services demanded by consumer-taxpayers should be regarded as final and

⁵¹Shoup, op. cit., p. 149.

⁵²Earl R. Rolph, The Theory of Fiscal Economics, p. 76.

⁵³Richard Stone, "Two Studies on Income and Expenditure in the United States," Economic Journal, April, 1943, p. 75.



non-duplicative.⁵⁴ Milton Gilbert also protests Kuznets position with the observation that armaments are separate products and their use provides a service that is independent of other items of production. That, regardless of ones views as a philosopher, they are final products and should be included.⁵⁵

After viewing both sides of the controversy on government general-purpose services it seems only reasonable to conclude that they must be included as final products in national income estimates. The arguments for inclusion appear to be the most logical and the most consistent. It seems inconsistent to count haircuts and medical services as income in the household sector and not count expenditures for national defense in the government sector. War and violence are facts that have to be dealt with just as hair grows and people get sick. In making estimates of national income we are constantly faced with measuring that which can be measured. Realism requires the inclusion of haircuts and war expenditures.

Neither does Kuznets' search for a principle to distinguish final product appear to have been successful. In order to keep his market analogy criteria from breaking down he calls for "widespread" use in the market. Introduction of the word "widespread" brings us back to our starting point--that classifying intermediate and final product is all a matter of philosophy.

⁵⁴Joseph Mayer, "Proposals for Improving Income and Product Concepts," The Review of Economics and Statistics, May, 1954, pp. 195-6.

⁵⁵Gilbert et al., op. cit., pp. 184-8.



Since no satisfactory principle is available for distinguishing intermediate from final product any measure of national income must be a matter of convention. The question becomes one of which convention is best.

The convention adopted by the Department of Commerce and the British White Paper is that all government spending is for final product. We have noted above that the Department of Commerce contends that these expenditures are collective purchases and that since the government does not buy for resale, these purchases are final. Furthermore, Milton Gilbert denies that any duplication can take place through government services to business. He takes a clear-cut case of government aid to business, a government gift of flour to bakeries. Gilbert contends that since it does not become an element of cost to the bakeries, it cannot, under competition be included in the value of the bread. That it would be the same thing as giving the flour to consumers who pay the bakers to have it processed.⁵⁶

The reasoning of Milton Gilbert must be rejected. Any government service to business must result in double counting even though this service results in an equivalent decrease in price. A government gift of flour to bakeries may very well result in an equivalent decrease in price of bread. However, the use of a price index would restore the value of the bread and national income would be inflated by the amount

⁵⁶Gilbert et al., op. cit., p. 185.



of the government gift to business. National income will always be greater by the amount of double counting due to government service to business regardless of whether this service reflects itself in lower prices, higher wages, higher profits, or a combination thereof. The price index will always restore the value of the bread and double counting will occur to the extent of the government service to business. Thus the method used by the Department of Commerce and the British White Paper is certain to overstate national income totals.

An arithmetical example may help to clarify this problem. Suppose the price of a loaf of bread is ten cents and the charges against it are five cent flour and five cents wages and profits. Now suppose the government gives the flour free to the bakery and this gift reflects itself completely in lower prices. Bread now sells for five cents, but the use of a price index would restore the value of the bread to ten cents since real product is the same. If the value of the government service to business is added to this, total production becomes valued at fifteen cents and double counting occurs to the extent of the government intermediate service. At the other extreme, suppose the government gift of flour goes completely to profits. The price of bread remains ten cents, government intermediate service is five cents for a total product of fifteen cents. Again, double counting takes place to the extent of the government intermediate product. The same reasoning can be applied to any combination of lower prices, higher profits, and higher wages.



What can be said about the third approach described above--that indirect business taxes measure government services to business and direct taxes measure government services to individuals? Kuznets discusses the arbitrariness of these assumptions, but believes that assuming the government's distribution of charges reflects its services to the payors "is more plausible than the assumption that no connection exists between the locus of payments to government and the locus of benefits by the government."⁵⁷ Very few authorities would subscribe to this benefit theory of taxation. Earl Rolph notes that no theory exists which justifies special treatment of indirect taxes. And that the common-sense notion that a person's tax liability in some way indicates the share of government costs borne by him is by no means self-evident.⁵⁸ Haberler and Hagen state that taxes are raised mostly on a basis of expediency and furthermore,

So far as we know, the division of taxes between business enterprises and consumers as a means of paying fairly for services to each is not discussed in the entire literature of public finance. . . . There is no 'invisible hand' guiding the distribution of taxes as between direct and indirect. We believe that the use of indirect taxes as a measure of intermediate products furnished by government to business is entirely indefensible and should be abandoned.⁵⁹

Others to deny the benefit theory of taxation include Means et al.;

⁵⁷Kuznets, "Discussion of Colm's Public Revenue and Expenditure," p. 237.

⁵⁸Rolph, op. cit., pp. 68, 54.

⁵⁹Haberler and Hagen, op. cit., p. 27.



Lindahl, Dahlgren, and Kock; and the Reichsamt theory.⁶⁰

Even the National Bureau of Economic Research which used this approach in its early study of national income recognized the inadequacy of its assumptions. They argue that the impossibility of dividing all services rendered by government into services to business and services to individuals compelled them to assume that taxes levied against each field of business were equal to the value of government services to that industry. But, "This assumption is, however, likely to be far from the truth."⁶¹ To support this quotation they note that manufacturing corporations paid to the federal government over two billion dollars in 1918. ". . . but it scarcely appears credible that the manufacturers received service worth over two billions."⁶² Also, both Colm and Warburton believe that the existing tax system deviates a long way from the benefit theory of taxation. They feel that the government overcharges business for its services.⁶³

⁶⁰G. C. Means; Lauchlin Currie; and R. R. Nathan., "Problems in Estimating National Income Arising from Production by Government," Studies in Income and Wealth, vol. II, pp. 284-5, 290-1, Lindahl, Dahlgren, and Kock, op. cit., p. 11, Doblin, op. cit., p. 181.

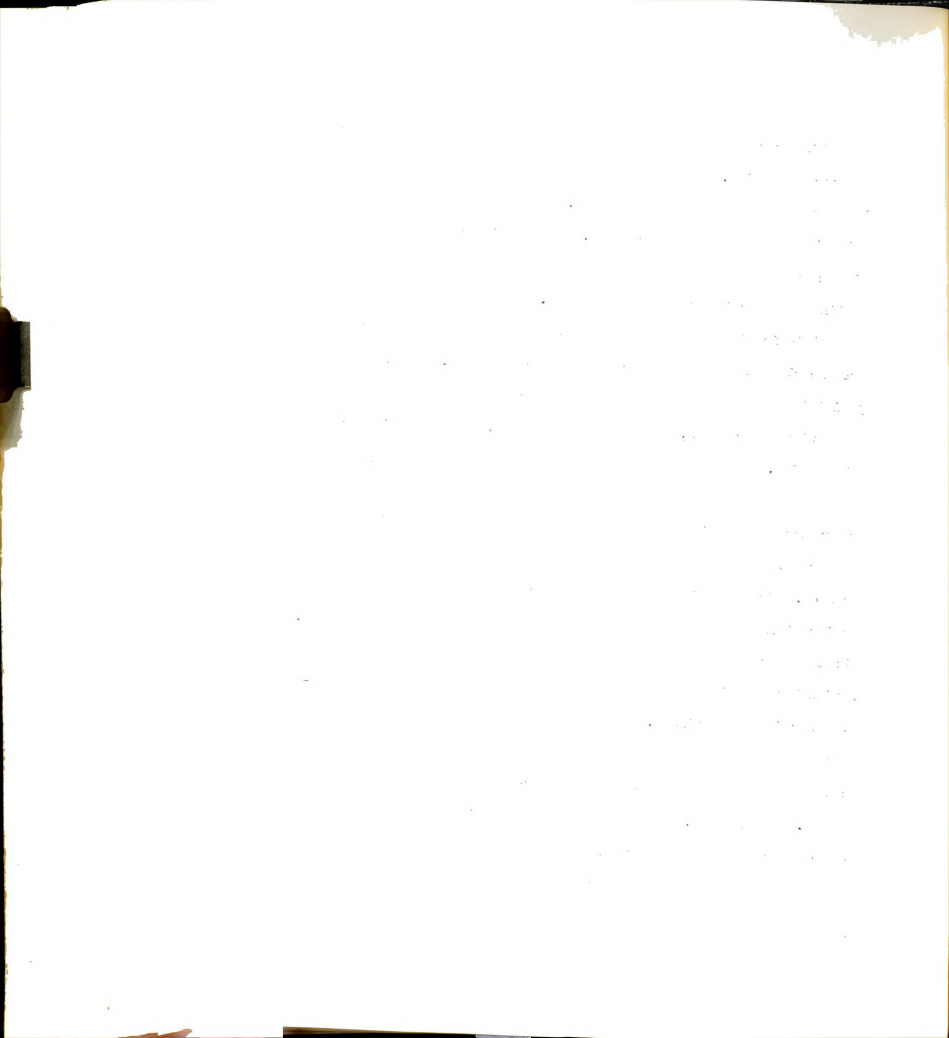
⁶¹National Bureau of Economic Research, Income in the United States, vol. II, p. 5.

⁶²Ibid., pp. 5-6.

⁶³See M. A. Copeland, "Discussion of Copeland's Concepts of National Income," Studies in Income and Wealth, vol. I, p. 61.

This study accepts the majority opinion and rejects the benefit theory of taxation. Taxes are compulsory payments that are decided on indirectly by the people who pay them. It seems that taxes are levied primarily as a matter of expediency. The new favorable treatment of dividends was not made on the grounds that dividend receivers are getting less service from the government, Taxes on tobacco and liquor are not levied in terms of government services to these industries but are clearly intended to be passed on to the consumer. Also, the politicians who make the tax laws always argue in terms of incentive and employment effects, and in terms of equity, and seldom in terms of benefits.

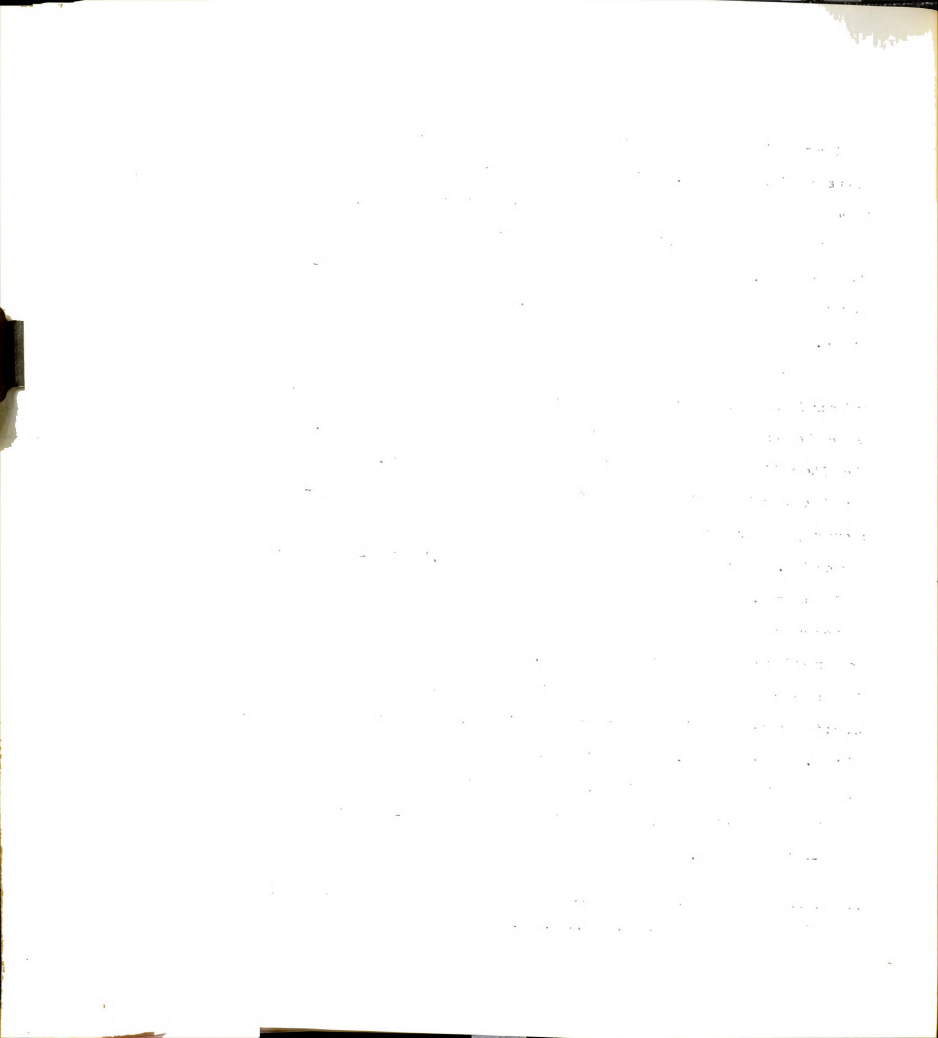
After examining the three approaches used in the treatment of the government product it would appear that the current convention used by the Department of Commerce is the most workable solution to an insolvable problem. The specific approach must be rejected because of the extreme arbitrariness involved which makes for one thousand and one solutions. The tax approach could by chance make for a more accurate measure of national income if indirect taxes did come close to measuring government services to business. The evidence given above indicates that this is not true and perhaps an even more damaging criticism is the fact that mere changes in the tax structure would result in changes in national income. For example, putting a 25 per cent limit on federal income tax payments and passing a federal sales tax (in the United States today)



would result in a lower national income even though the real national income remained the same. This is true since this new tax law would increase the amount of taxes taken in the form of indirect taxes, and since these taxes are considered equal to the intermediate product of the government, a larger deduction would be made for government intermediate product than before the new tax law, and hence a lower national income.

The broad convention of counting all government purchases of goods and services as final product as the Department of Commerce does, seems to be the best convention even though double counting may take place. The alternatives to this convention are quite unsatisfactory. No one was able to set up objective criteria of intermediate product and consequently the process of enumeration varied with the philosophy of the enumerator. A broad convention such as Lindahl et al.'s fifty-fifty split could be used, but this seems less desirable than the Department of Commerce practice since the discussion above indicates that the bulk of government spending is for final product. As this study has progressed it has become more apparent that measuring national income is to a large extent a matter of philosophy and that consistency in measuring is the greatest virtue. In conclusion, this study is in complete accord with Haberler and Hagen who state, "If definite, reasonable principles are established and followed consistently, the comparison between periods--the significant thing--will be valid."⁶⁴

⁶⁴Haberler and Hagen, op. cit., p. 25.



IX. MARKET PRICES OR FACTOR COSTS

A. Alternative Treatments

Currently, both the British and American official income statistics present a national income at factor cost and a net national product at market prices series. National income at factor cost is the smaller measure, the difference being primarily accounted for by the amount of indirect business taxes. (Other adjusting entries are business transfers, surplus of government enterprises less subsidies, and a statistical discrepancy.) While indirect business taxes are included from national income at factor cost they are included in net national product at market prices in their entirety. The factor cost series is smaller than the market price series not because any part of the product has been eliminated, but because of a revaluation of national income weighted by factor costs whereas net national product is weighted by market prices. In the words of the Department of Commerce, "It will be noted that we use the terms 'national income' and 'net national product' to designate current production of the economy at factor cost and at market value, respectively."¹

The rationale underlying this treatment of taxes is that indirect business taxes are assumed to be shifted forward by the full amount, i.e.,

¹See R. T. Bowman and R. A. Easterlin, "An Interpretation of the Kuznets and Department of Commerce Income Concepts," Review of Economics and Statistics, February, 1953, p. 43.

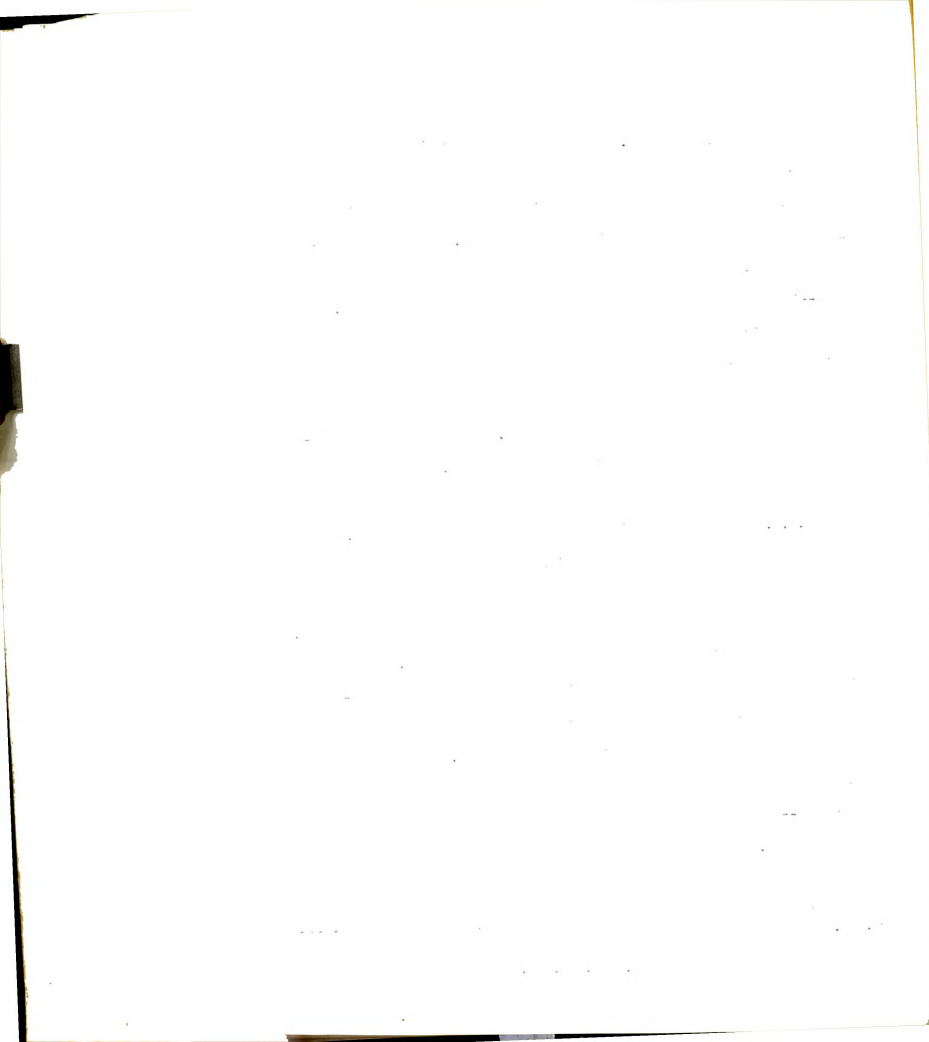


inflate prices by that amount. In 1947 corporate profits taxes were classified as a part of factor costs and included in national income on the assumption that they are paid entirely by stockholders with none of the tax shifted forward into higher prices. If these assumptions are true, then changes in tax rates will not affect national income--it will be invariant to mere changes in the tax structure. Increased indirect business taxes will merely raise market prices, and increased corporate profits taxes or any other increases in direct taxes cannot affect the size of national income at factor cost since they are counted as part of the factor shares. The Department of Commerce realizes that these assumptions are precarious. It states, "the entire subject of tax shifting and incidence is a rather controversial one and . . . definitive and final conclusions are not available."²

Not all authorities accept the British and American official version of a net national product at market prices wedged apart from national income at factor cost by the amount of indirect business taxes. Kuznets, for one, finds a conceptual identity between them. He achieves this identity largely through the deduction of all business taxes--both corporate profits taxes and indirect business taxes--from both the product side and the money flow side of the accounts. Kuznets removes these taxes on the grounds that they represent intermediate product of government--services to business by government which business pays for by their taxes.³

²United States Department of Commerce, National Income, 1954 Edition, p. 33.

³Bowmand and Easterlin, op. cit., p. 45.

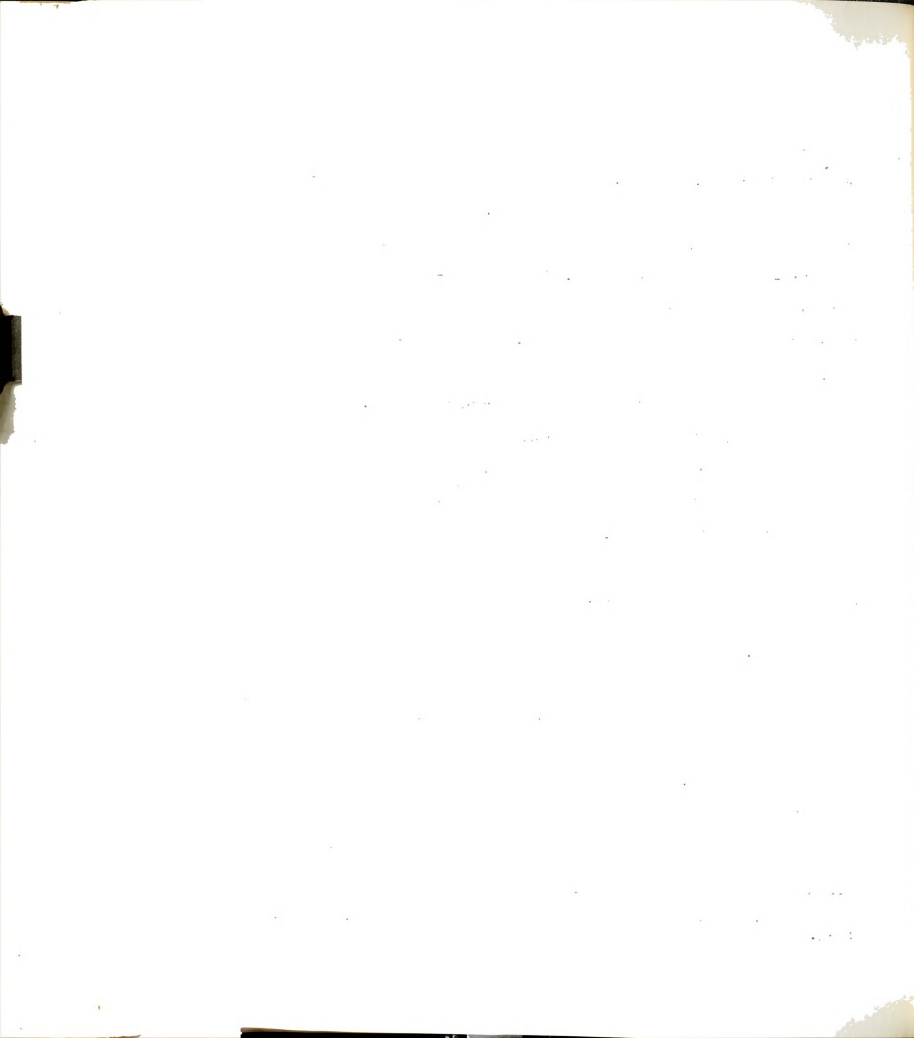


Carl Shoup also arrives at an identity between national income and national product. However, Shoup arrives at his totals in a completely different manner than any of the above. Shoup does not distinguish between taxes, he utilizes on the factor cost side, either the before-tax or the after-tax rule. If the before-tax rule is used, no taxes are deducted from factor costs but a deduction equal to the intermediate product of government is made. If the after-tax rule is used, all taxes are deducted from factor payments and an addition equal to the value of the final product of government is made. On the product side, national product is equal to the sum of private final product plus government product valued at cost. In other words, Shoup excludes government intermediate product and general-purpose services from both sides of the accounts. In this manner he is able to attain conceptual identity between national income at factor cost and net national product at market prices.⁴

B. National Product Valued at Market Prices

The following portion of this chapter discusses net national income at market prices as an index of welfare. Consequently, the question arises as to the limitations of market prices as an index of welfare or as a weighting factor. In the chapter on the definition of national income it was reported that such authorities as Bowley and Stamp expressed doubts as to the ability of the market to express values, however, in

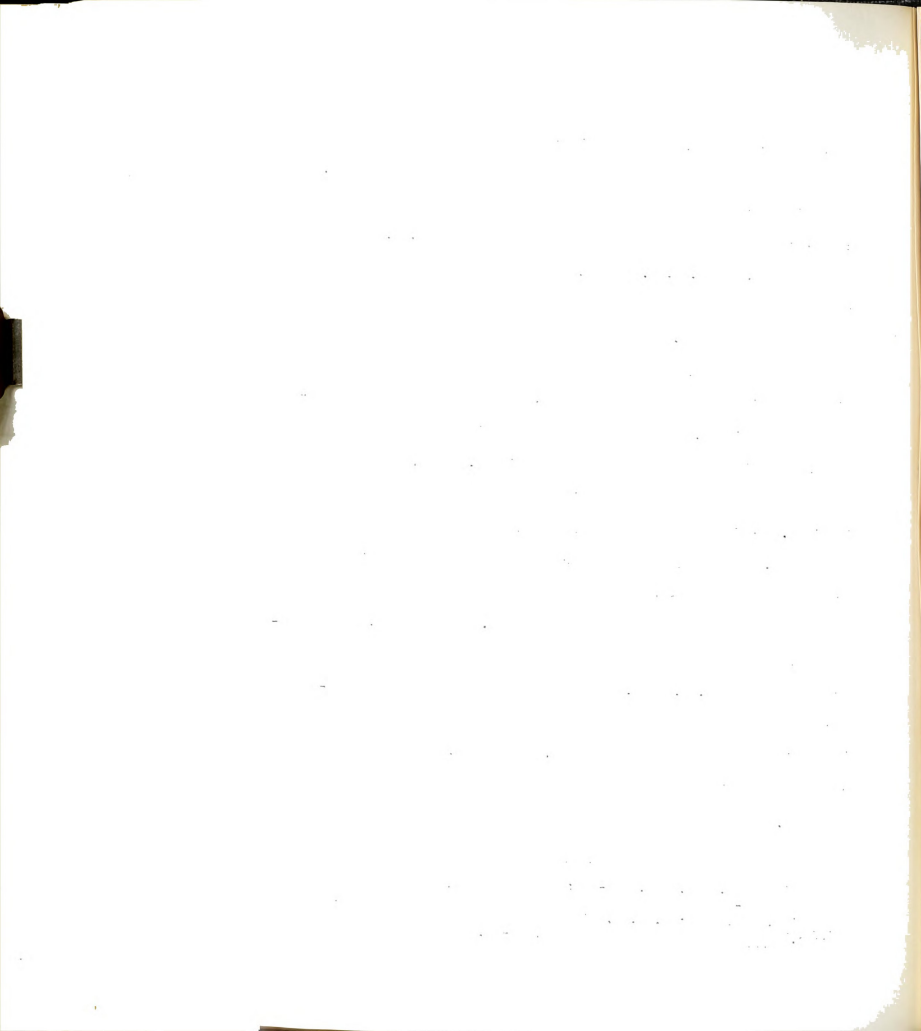
⁴Carl S. Shoup, Principles of National Income Analysis, pp. 232, 244, 282-3.



spite of these doubts, it was considered necessary to accept the judgment of the market if national income estimates are to be made. One of the most comprehensive discussions on the use of market prices as a measure of value was carried out in Economica by J. R. Hicks, Simon Kuznets, and I. M. D. Little.⁵ Occasional references will be made to these discussions in the investigation below on limitations of market price values.

One of the most obvious limitations of market prices as a measure of value is imperfections in the market. With varying degrees of imperfect competition, market prices reflect various deviations from prices as would be determined under competition. Thus, market prices are not commensurable and their ability to measure value is consequently impaired. Deviations from competitive prices can also be caused by the government. The government can introduce a system of rationing and price control which prevents the consumer from pursuing his purchases as far as he would under free consumer choice. In addition, the government can use its coercive power in the market and, for example, hire Privates for the U. S. Army. Any attempt to adjust prices for imperfections of the market or government interference with market forces would simply be a matter of guesswork. Therefore, the practical statistician has little choice but to accept market prices as a yardstick of value.

⁵Hicks, op. cit., pp. 105-124; Simon Kuznets, "On the Valuation of Social Income--Reflections on Professor Hicks' Article, Part II," Economica, May, 1948; I. M. D. Little, "The Valuation of the Social Income," Economica, February, 1949, pp. 11-26.



Besides these limitations, there is a further question on market prices to be considered. Since taxed commodities have two prices--prices inclusive or exclusive of taxes--the question is raised as to which price should be used as a measure of value. The majority opinion is that market prices gross of taxes should be used. Hicks, for one, notes that market prices are used as weights since they are presumed to give us some indication of marginal utilities. Thus, prices that correspond most closely to relative marginal utilities are those which face the consumer, not these prices net of taxes. Therefore, he argues that prices must be taken after tax or subsidy, and retail prices used instead of wholesale prices.⁶ Clark Warburton observes that to say the true market price is the actual market price less an unascertainable amount of taxation is meaningless.⁷ Furthermore, Earl Rolph contends that the price to be considered is the price that must be paid, not that price less taxes, since peoples decisions are guided by the price that they have to pay and not by that price less taxes.⁸ Even the Department of Commerce speaks of a reclassification of some taxes such as automobile licenses and registration fees on the grounds that these payments are tied to consumer purchases and consequently affect consumer behavior.⁹

⁶Hicks, op. cit., p. 113.

⁷Clark Warburton, "Accounting Methodology in the Measurement of National Income," Studies in Income and Wealth, vol. I, p. 87.

⁸Earl R. Rolph, The Theory of Fiscal Economics, p. 72.

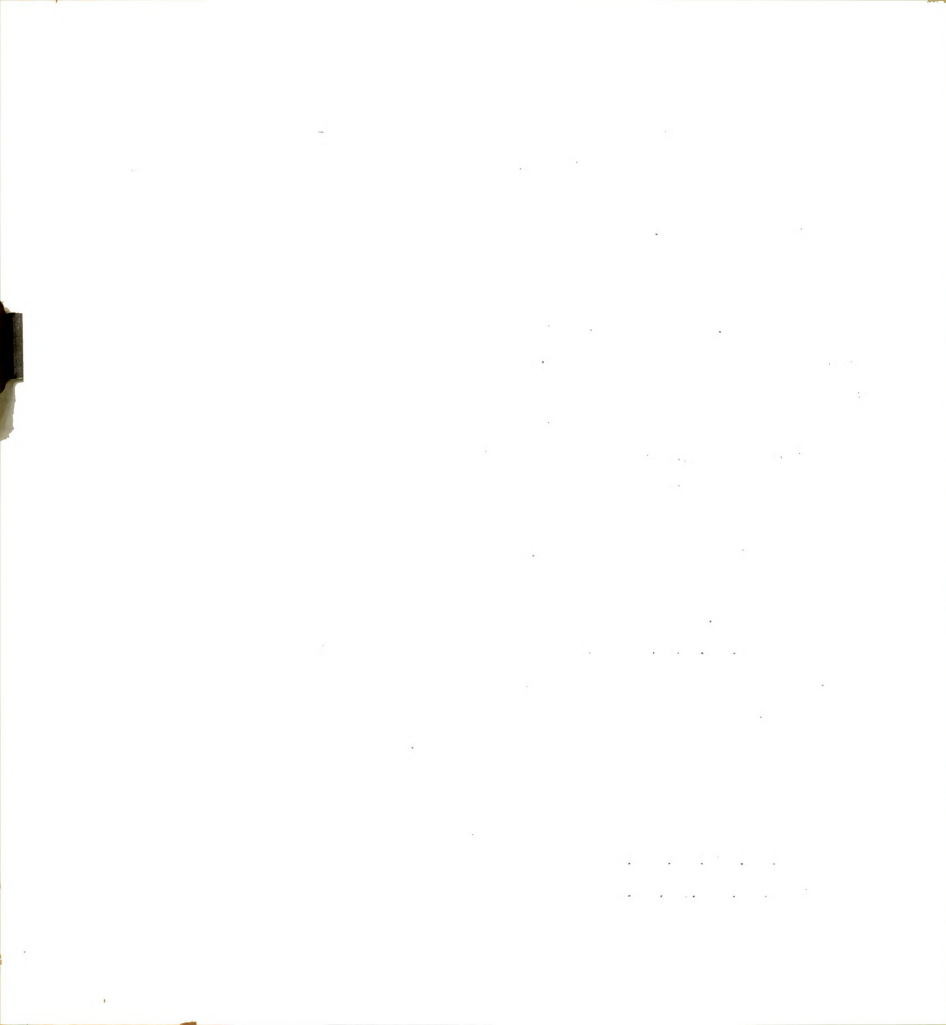
⁹United States Department of Commerce, op. cit., p. 55.

This study accepts the position that market prices gross of taxes correspond most closely with marginal utilities, consequently are the most meaningful from the viewpoint of making national income estimates which serve as indexes of welfare.

Besides the limitations of market price values, the net national product series of the Department of Commerce has other limitations as an index of welfare. For one thing, there is double counting to the extent of government intermediate product. The previous chapter, which was on this subject pointed out that little could be done about this in practice and that the intermediate product of government may very well be an insignificant item. Another suggested limitation is the contention that government product is valued at cost with the implication that a different principle is being applied to the government sector since the private product is valued at market prices. For example, Hicks states that taxes commodities have two prices while government services have no market prices at all.¹⁰ General agreement obtains that government product be valued at cost. I. M. D. Little, one of those accepting this position, states, "it was suggested that the best guide to economic welfare would be private consumption and private saving to which could be added public output of final welfare goods and services valued at cost."¹¹ Edward Denison points out that the valuation of government services at cost is

¹⁰Hicks, op. cit., p. 106.

¹¹Little, op. cit., p. 26.



in conformity with the present practice of all three governments (England, Canadian, and the United States) represented at the "Tripartite Discussions."¹² Hicks, Colm, Nelson and Jackson are among those that accept the valuation of government product at cost.¹³

Although the government does not sell its product on the market, i.e., it does not buy for resale, no inconsistency with market price valuation necessarily occurs. It is quite true that the government product is valued at its cost to the government, but with the government raised to the status of a final consumer as in the official estimates of the Department of Commerce, government purchases are similar to private consumer purchases. Both buy in the market place and both purchase for ultimate consumption. The government is simply serving as the agent of the community and making collective purchases. Except when the government uses its coercive powers no inconsistency or departure from market prices occurs.

Other factors serve to limit net national product at market prices as an index of welfare. As Hicks points out in his article "The Valuation of Social Income," changes in the distribution of income can affect welfare as well as changes in total product.¹⁴ Implicit in

¹²Denison, op. cit., p. 9.

¹³Hicks, op. cit., p. 116; Gerhard Colm, "Public Revenue and Public Expenditure in National Income," Studies in Income and Wealth, vol. I, p. 205; R. W. Nelson and Donald Jackson, "Allocation of Benefits from Government Expenditure," Studies in Income and Wealth, vol II, p. 319.

¹⁴Hicks, op. cit., pp. 110-11.



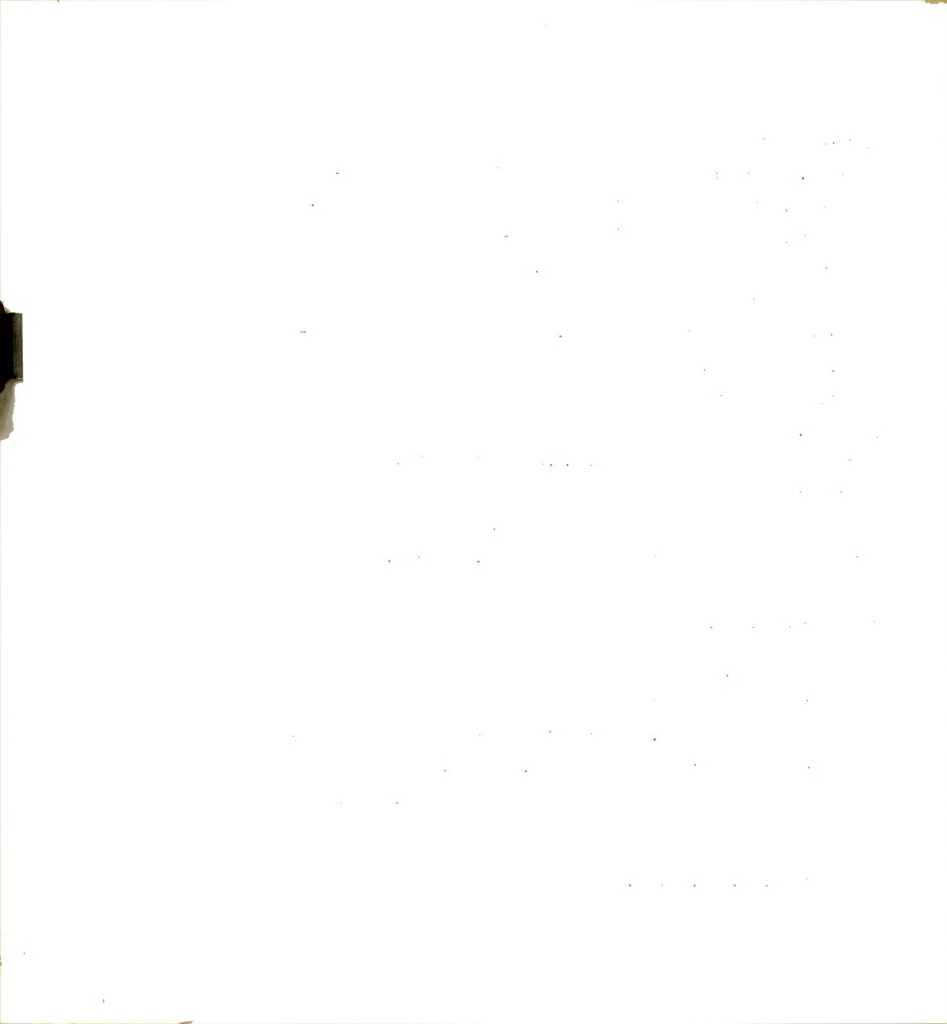
welfare comparisons is the assumption of no change in the distribution of income. It is also assumed that no changes in tastes take place. Furthermore, a large part of national production is completely ignored. For example, the services of housewives and do-it-yourself services are omitted from national income estimates.

In conclusion, there are many limitations to net national product at market prices as an index of welfare. But, in spite of these limitations, Little asserts, "Again, I do not deny that the consideration of some index of real income per head gives us some basis for making welfare judgments."¹⁵ This study also contends that since no utility index is available for measuring true income, i.e., net satisfaction, the most feasible index is that derived from a stock of goods and services that can conceivably add to the sum of satisfactions, in terms of market prices which are approximations of utility values. In brief, net national product at market prices seems to be the best available indicator of welfare.

C. National Income at Factor Costs

Estimates of national income can be made from either the product side or the money flow side. In a simplified economy in which no government existed these estimates would be equal. In fact, the early authors reviewed in this inquiry treated these flows as equivalents. Thus,

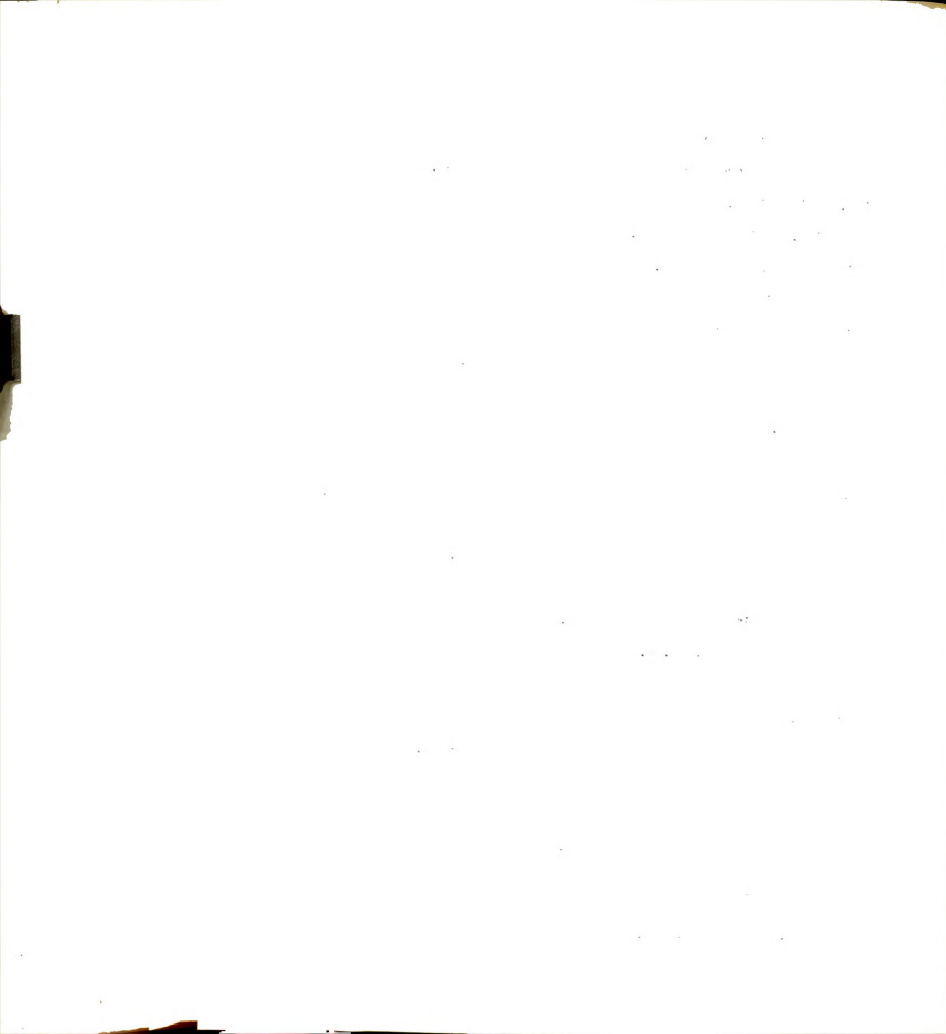
¹⁵Little, op. cit., p. 19.



William Smart speaks of the "two incomes"--the total goods and services produced and the sum of money incomes annually received. Willford I. King, David Friday, and Alfred Marshall considered these flows as identities. And more recently, Simon Kuznets and Carl Shoup also arrive at the same position. However, the current practices of the official statisticians of England and the United States arrive at a national income at factor cost that is less than net national product at market prices by the amount of indirect taxation. Thus the taxing power of the government introduces a possible discrepancy in these two measurements.

It should be noted that measuring national income from the factor side does not obviate the problem of government intermediate product. The national income at factor cost measurement simply takes the national product as given and divides it up into factor costs. The discussion of this variant of the national income centers on its meaningfulness and the appropriate treatment of taxes. Several alternative treatments of taxes are proposed. A. C. Pigou and Colin Clark argue that indirect taxes should be included in factor costs since they push up prices and, therefore, must be added to incomes if real incomes are to be compared between periods since there is no index of prices ex-tax.¹⁶ The Department of Commerce excludes indirect taxes from factor costs on the ground that they are nonfactor charges against the product while including direct taxes as a part of factor costs.

¹⁶See Simon Kuznets, "Government Product and National Income," Income and Wealth, Series I, p. 210.



Other authorities have attempted to make the decision on whether taxes are to be included or not, dependent on the use of the tax. For example, Kuznets says, "For if the taxes are spent in payment of wages and salaries to government officials whose activity does not add to the net aggregate of final products, their inclusion is not warranted."¹⁷ And later he states, "Whether or not the tax constitutes a cost and thus enters the market price of a good was found to be irrelevant in the case of indirect taxes; and is like wise irrelevant here. It all depends upon the use of the tax, i.e. whether or not the use adds to final net output of the economy."¹⁸ Kuznets excludes all business taxes from both sides of the accounts since he assumes that they are used to pay for government intermediate product, direct taxes on individuals are included on both sides since they are assumed to be payments for government services to individuals. Gerhard Colm, also, makes the inclusion or exclusion of taxes depend upon their use.¹⁹ In addition, Carl Shoup's analyses makes the treatment of taxes depend on their use.²⁰ And more recently, Bowman and Easterlin assert that the crucial thing that determines whether indirect taxes are included or not is what they are used for.²¹ The difficulty if not impossibility of tieing particular .

¹⁷Ibid., p. 211.

¹⁸Ibid., pp. 219-220.

¹⁹Colm, op. cit., pp. 185-95.

²⁰Shoup, op. cit., Ch. 7.

²¹Bowman and Easterlin, op. cit., p. 49.



taxes to particular expenditures was previously pointed out.

No distinction between types of taxes is made by some authorities. Both Carl Shoup and Earl Rolph treat all taxes alike.²² As Rolph states, "From the point of view of governments, the dollars these taxes provide are just as good as dollars provided by direct taxes."²³ And, "All taxes and all subsidies may be treated simply as transfer payments involving government. A distinction between 'direct' and 'indirect' taxes and subsidies is unnecessary for social accounting."²⁴ This position seems to be sound for several reasons. First, the benefit theory of taxation has many important shortcomings. Second, what is and what is not an indirect tax is a debatable question. The Department of Commerce's discussion points up the problem of defining an indirect tax. The Department of Commerce defines indirect business taxes as "taxes (other than social insurance contributions) that are chargeable to current cost by business enterprises; and personal taxes are taxes paid by persons that are not so chargeable."²⁵ The Department observes that this criterion leaves the treatment of retail sales and related taxes in an ambiguous position but counts them as indirect business

²²Shoup, op. cit., pp. 231-288; Rolph, op. cit., pp. 72-73.

²³Rolph, op. cit., pp. 72-73.

²⁴Ibid., p. 73.

²⁵United States Department of Commerce, op. cit., p. 55.



taxes forming a part of the market price "because it is thought to be more meaningful from the standpoint of studying market behavior."²⁶

It suggests that effects on consumer behavior be used as a criterion for the classification of taxes and that on this basis a reclassification of such taxes as automobile license and registration fees as indirect taxes would be in order. But, the Department concludes, "The influence of various types of taxes on personal consumption is a matter of degree and does not provide a clear-cut criterion of classification."²⁷ Thus, there is no objective criterion available for distinguishing direct taxes from indirect taxes.

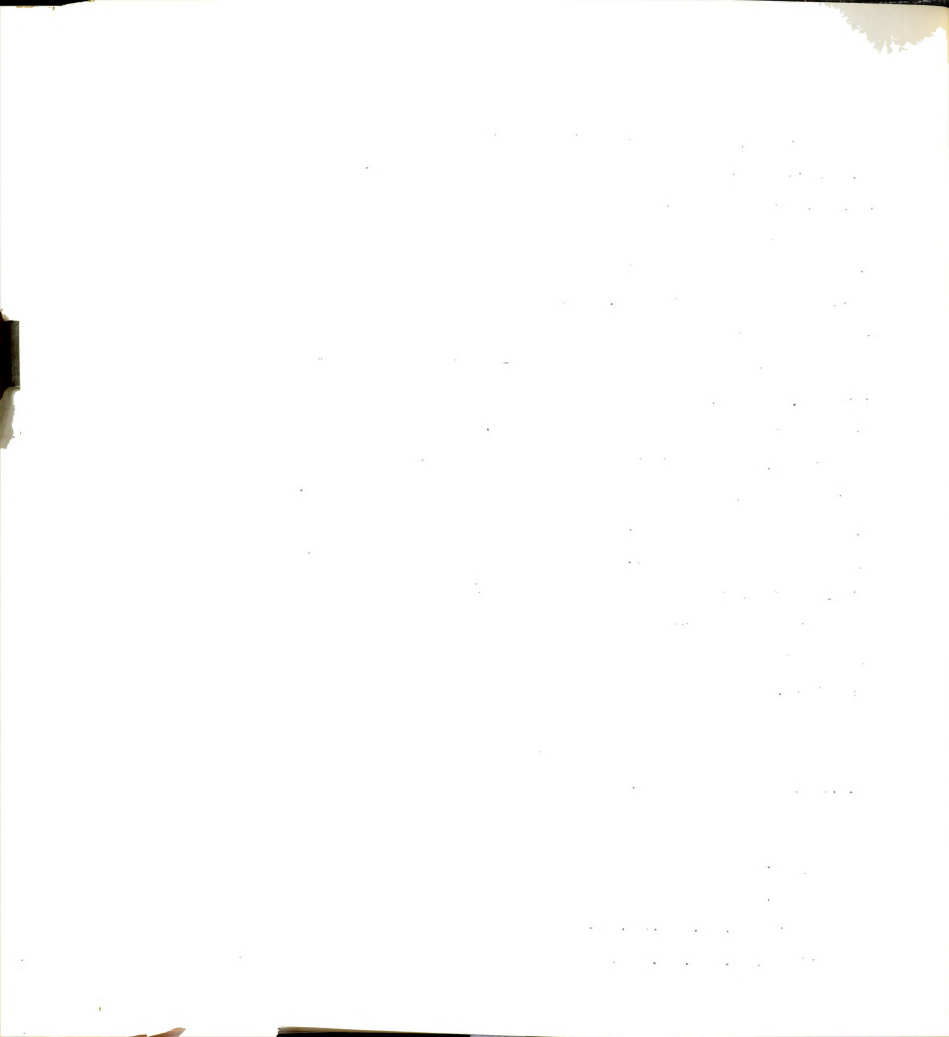
Finally, even if an indirect tax can be identified, the assumption of indirect taxes raising prices by their full amount is open to doubt. As Clark Warburton points out, "The incidence of these taxes is a matter of considerable debate, but there are excellent grounds for believing that a large percentage falls on owners in the form of reduced income from the ownership of property rather than on customers in the form of higher prices for the products with which the property is associated."²⁸ Rolph holds that the belief that excise taxes raise prices has little basis, and the opposite result may occur since taxes do remove money from someone and consequently reduce demand and prices, i.e., taxes are deflationary.²⁹ Even the Department of Commerce admits

²⁶Ibid.

²⁷Ibid.

²⁸Warburton, op. cit., p. 92.

²⁹Rolph, op. cit., p. 170.



that "the entire subject of tax shifting and incidence is a rather controversial one and that definitive and final conclusions are not available."³⁰ But, its assumptions "are the most realistic that can be made."³¹

Since indirect business taxes are difficult to identify, and since assumptions about the shifting of these taxes are controversial, does national income at factor cost have a significant meaning? Some authorities including Richard Stone, J. R. Hicks, and Albert Hart, consider factor costs superior to market prices as a general measure of production.³² Hicks argues that factor costs are the best guide to shifts of resources. His primary concern is centered not on different productivities over time, but directed to alternative compositions under given techniques of production. Hick's treatment then runs in terms of costs as foregone alternatives since the nation has a limited quantity of resources to allocate among alternative uses.³³ Several authorities have aptly pointed out the weaknesses of factor costs as given by national income data. For example, James Kuhn vigorously attacks the concept of national income at factor costs.³⁴ He asserts that the factor costs

³⁰United States Department of Commerce, op. cit., p. 33.

³¹Ibid.

³²See Edward F. Denison, "Reply," Studies in Income and Wealth, vol. X, p. 72.

³³See Bowman and Easterlin, op. cit., p. 49.

³⁴James W. Kuhn, "The Usefulness of the Factor Cost Concept in National Income Accounting," The Review of Economics and Statistics, February, 1954, pp. 93-99.



of economic theory have little in common with the statistical factor costs derived from national income data, that factor costs in the sense of alternative uses is applicable only to partial analysis since there are no alternative uses from the viewpoint of the community as the factor is either used within the sector-as-a-whole or it is not used at all. Kuhn also enumerates several limitations of these statistical factor costs. One of the most obvious is that in a world of imperfect competition the payments to the factors are not identical with their opportunity costs. Also the unemployed worker is not taken into account, and neither are such non-pecuniary items such as prestige and security. And finally, that availability of jobs is more important in distributing workers than wage differentials.³⁵

Among others to condemn national income at factor cost are Haberler and Hagen who say,

Contrary to the impression that may be created by the phrase 'in terms of factor cost,' the total so designated is in no sense a measure, or an approximation to a measure, or real (factor) input, in contrast to the output of finished goods.³⁶

Furthermore, Kuznets maintains that the supply price of the factors is not their nominal income paid by the employer, but that income adjusted

³⁵ Ibid., p. 95.

³⁶ Gottfried Haberler, and Everett E. Hagen, "Taxes, Government Expenditure and National Income," Studies in Income and Wealth, vol. VIII, p. 17.



net of taxes and inclusive of free services provided by the state.³⁷ And Bowman and Easterlin maintain that it is not possible to obtain a factor cost valuation in strict conformity with the concept of a production possibility function.³⁸

Factor costs of national income statistics appear to correspond poorly with factor costs of economic theory. In addition to reasons quoted above, this magnitude is primarily determined by arbitrary decisions. With a given net national product administrative decisions determine the amount of the adjusting entries and consequently the amount of factor incomes. The 1947 decision of the Department of Commerce to count corporation profits taxes as a part of factor income, the decision to count all social security taxes as part of factor income, and the decision to count sales taxes as indirect taxes all point to the arbitrary nature of national income at factor costs. Furthermore, a different tax structure could make for different factor costs even though real product remains the same. Let us suppose a given net national product at market prices in which the government product is financed in part through direct taxes and in part through indirect taxes. National income at factor costs will be less than net national product by the amount of the indirect business taxes. Now suppose an economy having the same real product but the government is

³⁷J. R. Hicks, "The Valuation of Social Income--A Comment on Professor Kuznet's Reflections," Economica, August, 1948, p. 167.

³⁸Bowman and Easterlin, op. cit., p. 49.



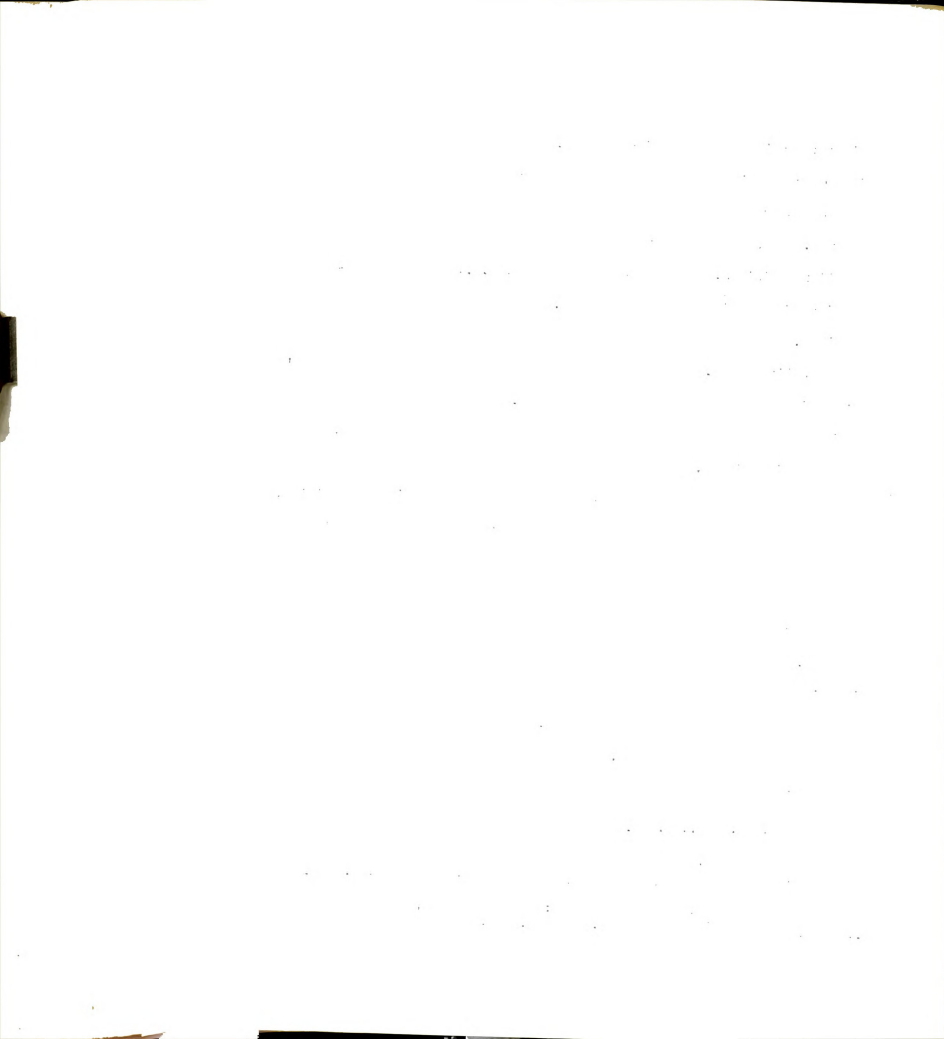
financed entirely through direct taxes. The two variants of national income are now identical and national income at factor costs is greater in the latter case by the amount of indirect taxation in the first example. In economic theory factor cost does not vary according to taxation decisions, but as production varies, e.g., increased production of commodity X valued at \$1000. also increases factor payments by \$1000. Previous chapters established the meaning of true income to be net satisfaction. National product or national income is the nation's production capable of yielding satisfaction. Since national income and national product are simply two ways of looking at the same thing, they should be identities. The introduction of the government should not produce a discrepancy between these two views of a nation's productivity.

Kuhn states that the Department of Commerce is aware that their "factor costs" are payments data and suggests that it would be better to label the payments data as factor returns and thus avoid the confusion between factor costs as theory concept and as a national income concept.³⁹ But Joseph Mayer says that in spite of this warning there is still the implication that each factor renders a service of a specific amount for an identical return.⁴⁰ Kuznets also suggests a complete change in terminology.⁴¹ Since these payments are simply the

³⁹Kuhn, op. cit., p. 99.

⁴⁰Joseph Mayer, "Proposals for Improving Income and Product Concepts," The Review of Economics and Statistics, May, 1954, p. 193.

⁴¹Simon Kuznets, "National Income: A New Version," The Review of Economics and Statistics, August, 1948, p. 162.



statistical residual resulting from many arbitrary decisions on adjusting entries, it is doubtful that the Department's national income at factor cost has meaning even as payments data.

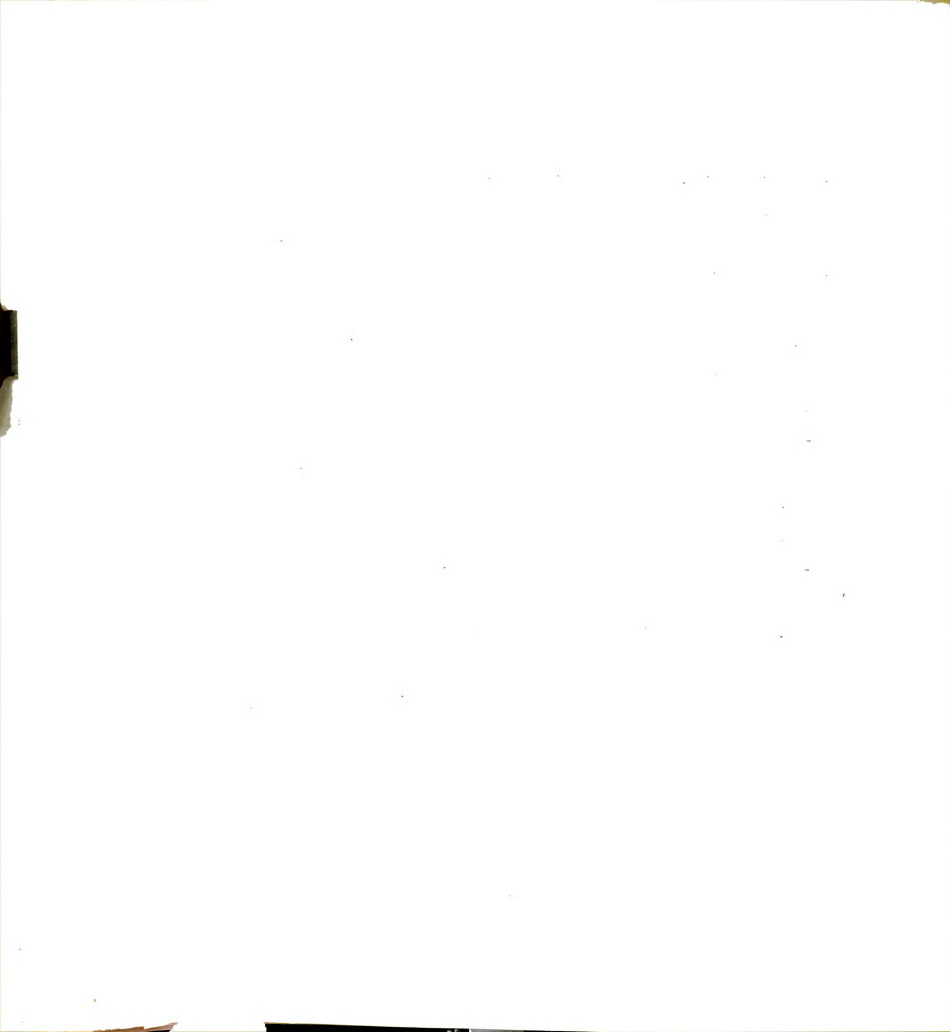
In conclusion, a comparison of several treatments of the government product in national income and product totals may be helpful.

VARIOUS TREATMENTS OF GOVERNMENT PRODUCT

Product Side		Recommended Procedure	Department of Commerce	Shoup	Kuznets
General Purpose Service 10		Includes	Includes	Excludes	Excludes
Service to Business 10		Includes	Includes	Excludes	Excludes
Service to Consumers 30		Includes	Includes	Includes	Includes
Total Product		50	50	30	30
Payments Side	Recommended Procedure	Department of Commerce	Shoup Before Tax Rule	After Tax Rule	Kuznets
Direct Taxes 30		Includes			Includes
Indirect Taxes 20		Excludes			Excludes
Total Taxes 50	Includes		Includes	Excludes	
			Less General Purpose Services 10	Plus Services to Consumers 30	
			Services to business 10		
Total income	50	30	30	30	30



The recommended procedure results in national income and national product totals being identities. Shoup and Kuznets also arrive at equivalent totals but their totals are less than the recommended totals since they both deduct for government intermediate and general-purpose services. Shoup's and Kuznets' totals would be equal only under the assumption that indirect taxes equal government services to business and government general purpose services as in the simplified illustration above. It is unlikely in practice that these two authorities would reach similar totals since Shoup determines the value of government intermediate and general-purpose services through a process of enumeration while Kuznets simply assumes their value to be equal to the amount of indirect taxes. In summary, the recommended procedure would treat all taxes alike, as Shoup does, but would not deduct for any government intermediate or general-purpose service as both Shoup and Kuznets do. On the product side the recommended procedure would be the same as the Department of Commerce's. Then national income at factor cost would be identical with the current official net national product at market prices and these totals would both be measures of productivity and welfare.



X. SUMMARY AND CONCLUSIONS

This investigation is concerned with the evaluation of national income in welfare terms. It is not concerned with the evaluation of total social welfare, but only that part of social welfare that can be measured in money, i.e., economic welfare as defined in the introductory chapter. It is further restricted to that part of economic welfare which results from government economic activity. As a starting point, the views of some early authorities on the meaning of income were reviewed. One of the most stimulating of these was Fisher's service definition which held that only consumption is income and that part of production that goes into savings is not income, but becomes income when capital is consumed. Fisher reached this position after pointing out that the ultimate income is satisfaction and only consumption leads to satisfaction. While general agreement obtained that final or ultimate income was psychic, many authorities pointed out the inconsistencies of Fisher's definition with economic theory and financial practice. And, as Colm remarks later, it is hardly right to say that no satisfaction is derived from saving.

In defining national income these early authorities came to conclusions which are generally acceptable today. They recognized that ultimate income is satisfaction, but, since it is immeasurable, took the last stopping point to be goods and services valued at market prices.



National income was then the nation's output of goods and services available for consumption and saving. These early authorities pointed to two ways of looking at the national income--the sum of money incomes and the total of commodities and services annually produced. They identified the national income with the national product and thus pointed to two ways of arriving at the national income.

The earliest estimates of national income in the United States were the result of individual efforts. Charles B. Spahr, who made the first comprehensive study published in 1896, made no particular mention of government product. However, he used the income sum approach and took his incomes gross of taxes and consequently did take into account the government product. King's 1915 publication makes particular mention of the government as an industry. King, who used mainly the product approach, counts the government product as equal to the amount paid for running the government, i.e., taxes. The National Bureau of Economic Research, in its study of national income published in 1921, did not include all taxes, but excluded indirect taxes on the assumption that they were equal to government intermediate product. The British authorities, A. L. Bowley and J. C. Stamp, writing in 1927, dealt at length on the problem of taxes and duplicate reckoning. To avoid double counting they excluded from national income those incomes for which no services were rendered such as old age pensions, soldier's pensions, and interest on the national debt. In conclusion, these early authorities



evidenced increasing concern over the proper treatment of government as government economic activity increased. While their treatment would not approach today's standard, their estimates could hardly be invalidated on the grounds of inadequate treatment of government, particularly since its economic activity was relatively small at the time of their writing.

In the period under study (1890-1954), the role of the government in economic activity changed from one of relative insignificance to a position of utmost importance. During this period all indicators of government activity point to its terrific growth. Thus the value product of government, government expenditures, government revenues, and government employment all showed strong increases. For example, government spending increased from less than one billion dollars in 1890 to over 100 billion dollars in 1953. Percentage wise, government spending increased in this period from 6.5 per cent to 23.4 per cent of gross national product. Another indicator of the importance of the government today is the fact that in 1953, 18.1 per cent of the total work force, inclusive of military personnel, was directly dependent on government employment. Past, present, and future wars are largely responsible for the growth of the government. In addition, the government has increased its functions in other directions such as health, welfare, public housing, etc. The large part played by the government in the nation's economic activity makes imperative its proper treatment if meaningful estimates of national income are to be made.



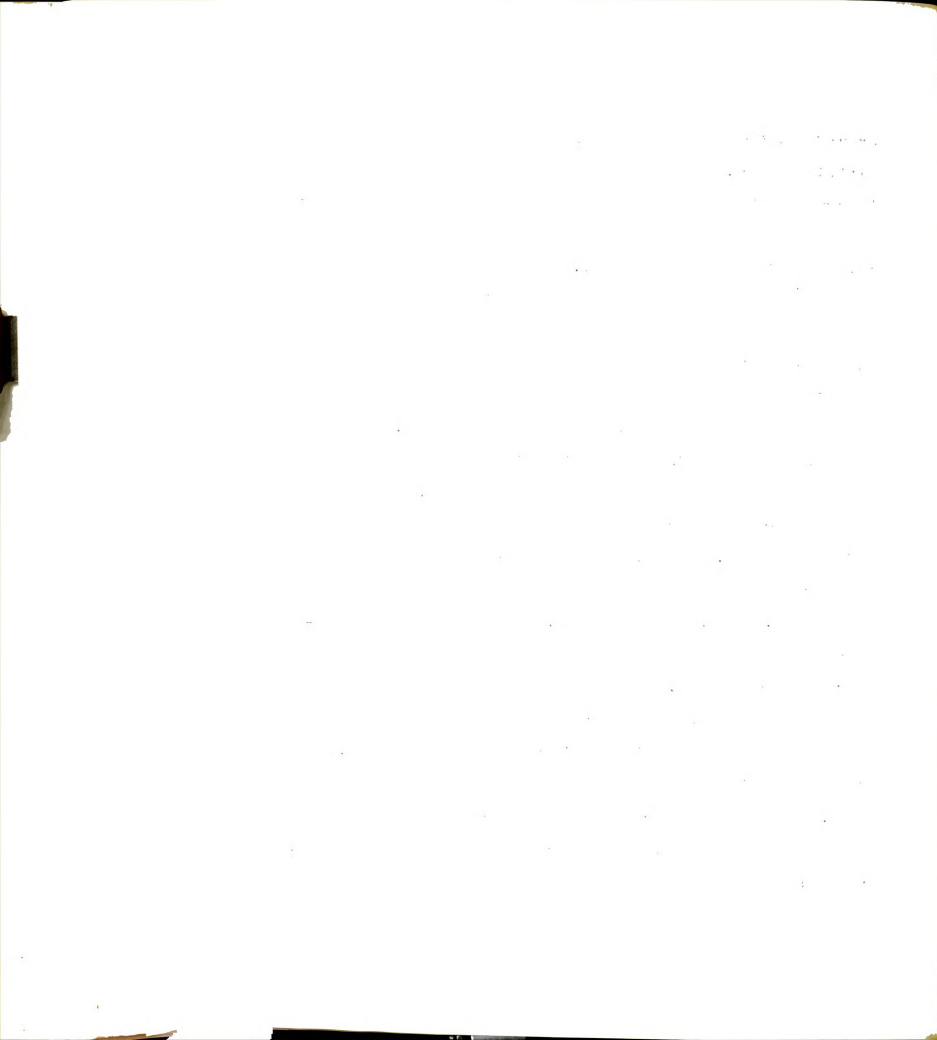
In spite of the importance attributed to national income statistics, the first official report on national income did not appear until 1934. In 1947, a national income supplement was published which was called a landmark in national income statistics by the Department of Commerce. The new estimates were recast into a comprehensive framework of national income accounting which was designed to provide a systematic picture of the economic structure and process in terms of interrelated income and product flows. This supplement provided some of the rationale behind the treatment of the items in the estimates, but it remained for the 1951 national income supplement to provide a detailed explanation of these concepts. Besides the new system of accounts, several major changes were made in 1947 which are of significance to this study. Government interest payments were changed from being considered income payments to transfer payments and thus excluded from national income. Corporation income taxes were included in national income instead of their previous exclusion. A final conceptual change took place in the treatment of indirect taxes. Before 1947, a deduction equal to indirect business taxes was made for government intermediate product. In 1947, the government was raised to the status of an ultimate consumer with no deductions made for intermediate product. All government purchases were thus considered final.

Undoubtedly, one of the most controversial topics in national income literature is the treatment of government interest payments. British, Canadian, and Australian authorities generally agree that interest on



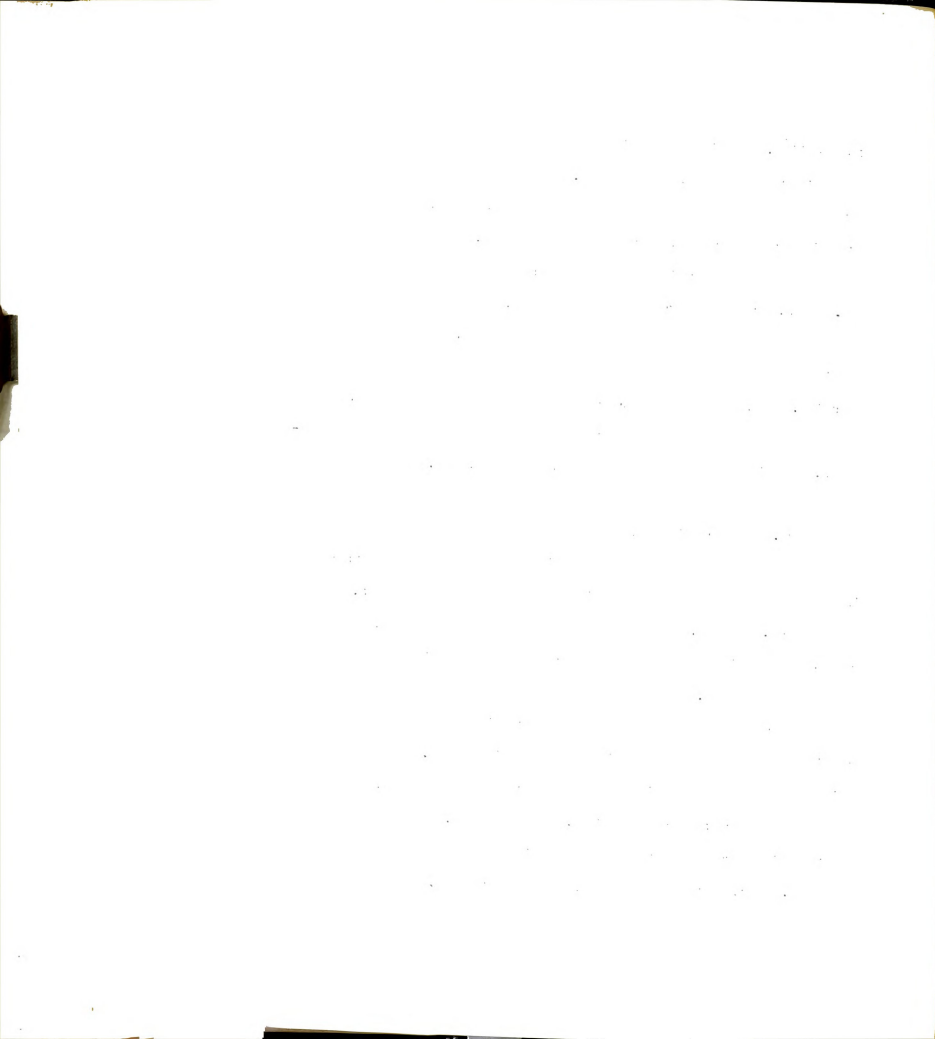
productive debt should be included while interest on unproductive debt should be excluded. In practice this amounts to the British excluding interest on central government debt and including interest on local debt on the grounds that central government debt does not reflect currently existing assets while local debt does. Since 1947 the official estimates of the United States have considered government interest payments as transfer payments on the grounds that the bulk of the government debt was created to finance wars and hence was unproductive and payment on such debt could not in any real sense be taken to represent currently produced goods and services or the current use of resources. Most Americans accept the division between including interest payments on productive debt and excluding those on unproductive debt, but go along with the Department of Commerce decision because of the difficulty of making the division. However, Kuznets would count all interest payments on the grounds that these payments are related to the productive potential of the nation. Rolph, on the other hand, would count all interest payments as transfer payments on the grounds that no service is rendered in return for these payments.

It is contended here that government interest payments are income payments and hence should be included in national income estimates. Interest is a price paid for a service and like any service results in income. Although the chapter on government interest payments maintains that the government debt was largely a productive debt, interest payments are always income payments even though the debt might be considered



unproductive, that is, debt which resulted from government expenditures for consumption purposes such as war. It does not matter whether the borrowed funds are used for consumption or investment since in either case a service is rendered the borrower by the lender, thus it does not make any difference whether the debt represents current existing assets or not. Thus, from a theoretical point of view, government interest payments should be included in national income totals, however, how much impairment to these totals results from their exclusion is open to question. These payments exceeded five billion dollars in 1953, but when placed alongside of such large omissions as the services of housewives, such immeasurables as pain costs of labor, etc., it is doubtful whether there is any significant impairment to these totals as an index of welfare. It seems that absolute totals may well be less significant than changes in these totals and that in the final analysis consistency is the most important ingredient in national income statistics. It must be admitted, however, that a changing proportion of government interest payments to national income would to some extent impair these totals as an index of welfare.

The determination of government intermediate product has also received much attention in national income literature. In terms of using national income estimates as an index of welfare it is only net product that corresponds to welfare. Consequently, the intermediate product of government should be removed if a net product is to be attained. Three approaches to this problem are used. First, the



specific approach attempts to classify each item of government expenditure and label it as final or intermediate product. Many authorities attempted to make these classifications and the results varied according to the philosophy of the enumerator. These authorities were agreed, however, that no objective standard or criterion is available for identifying intermediate and final product, hence some arbitrary principle would have to be used. Consequently, any measure of government product must be conventional.

A second approach is called the 'Despair' or 'Wholesale' approach by Kuznets since it involves complete acceptance or rejection of government product on the grounds that there is no reliable criteria for distinguishing government intermediate product from final product. The official statistics of both Great Britain and the United States subscribe to this approach as they have raised the government to the status of an ultimate consumer, that is, all government purchases are considered final. Thus government purchases are viewed as collective purchases of the community. In accepting this approach, double counting occurs to the extent of government intermediate product. Milton Gilbert in speaking in the defense of the Department of Commerce argues that under competition no double counting takes place since prices are lowered by the amount of the government service to business. The arithmetical illustration given in the chapter on intermediate product demonstrates that double counting does occur whether the government service to business goes into lower prices, higher profits and/or wages.



A third approach is the tax approach which assumes that indirect taxes measure the amount of government services to business and direct taxes measure government services to consumers. This approach does not solve the classification problem but feels that this is the best solution to an unsolvable problem. It was used by the National Bureau of Economic Research, it was used by the Department of Commerce before 1947, and Kuznets has been an advocate of its use. Many authorities have attacked its assumptions by pointing to the inadequacy of the benefit theory of taxation. Furthermore, changes in tax structure will result in changes in national income even though real national income remains the same.

Since none of the above approaches are able to objectively determine the intermediate product of government, the question becomes one of choosing the best convention. It is the conclusion of this study that the Department of Commerce practice of counting all government purchases as final product is the best convention. Several reasons can be given for this conclusion. For one thing, the alternatives seem even less desirable. The process of enumeration was found to be largely a matter of philosophy yielding a thousand and one answers. The tax approach depends upon assumptions that do not stand inspection. Furthermore, this study contends that the major part of government expenditures is for final product and consequently little double counting would ensue. Again it seems that in making national income estimates consistency is the best virtue and if this convention is consistently applied, the changes between periods will be valid for comparative purposes.



Since 1947 the Department of Commerce has presented a net national product at market prices series, and a national income at factor cost series. The latter series is smaller than the former, mainly by the amount of indirect business taxes. Nothing is left out of the smaller total, it is a measure of national income weighted by factor costs, whereas net national product is weighted by market prices. There are many limitations of net national product at market prices as an index of economic welfare. It suffers from market price weights being poor measures of value due to market imperfections and coercion of government. It is also based on the assumption that everything else, such as tastes and distribution of income, remains the same. Furthermore, it is not a net figure since government intermediate product is included. Nor does it take into account such major items as the services of housewives. Nevertheless, it is the best available index of welfare. No utility calculus is available to measure total social welfare, therefore, economic welfare as measured by a stock of goods and services valued at market prices which are approximations of utility values is the most feasible index of welfare.

This study contends that national income at factor costs is neither an index of welfare or factor costs. The Department of Commerce excludes indirect taxes on the ground that they are nonfactor charges against the product while including direct taxes as a part of factor costs. Some authorities (Kuznets, Colm, Shoup, Bowman and Easterlin) argue that



whether taxes should be included or not depends on their use and not whether they are indirect taxes or not. Shoup and Rolph treat all taxes alike. This study accepts the contention that from the point of view of national income accounting taxes are taxes and, therefore, should be treated alike. This conclusion seems desirable for several reasons. First, the benefit theory of taxation was found to be inadequate. Secondly, no adequate objective criterion is available to classify direct taxes and indirect taxes. Finally, the incidence of taxes is a matter of considerable debate. With such strong doubts about the classification of taxes and their incidence, the meaningfulness of national income at factor costs is open to serious question. This series appears to be the result of arbitrary decisions in the classification of taxes and on their incidence. Some authorities, including Kuhn, Kuznets, and Bowman and Easterlin, contend that these statistical factor costs have little in common with factor costs of economic theory--wages, rents, interest, and profits. Statistical factor costs do not take into consideration the unemployed worker, non-pecuniary items such as prestige and security, and imperfect competition prevents payments to the factors from being identical with their opportunity costs. Furthermore, a different tax structure could make for different factor costs even though real product remains the same. National income at factor costs is apparently a meaningless concept.



It is further concluded that national income and national product should be identities. They are simply two ways of looking at the same thing. There is no reason for the introduction of government economic activity to cause a discrepancy between them. True income is satisfaction, the nation's productivity is a means toward satisfaction, it is also the national income.



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3. The third part of the paper presents a detailed analysis of the performance of the proposed algorithm. This includes a comparison of the results with those obtained using other well-known methods, such as the maximum likelihood method and the method of moments.

4. The fourth part of the paper discusses the implications of the findings for the field of statistics. In particular, it highlights the potential for the proposed algorithm to be used in a wide range of applications, from data analysis to hypothesis testing.

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2. In the second part of the paper the problem of the existence of a solution of the system of equations (1) for arbitrary values of the parameters α and β is solved. It is shown that the system of equations (1) has a solution for arbitrary values of the parameters α and β if and only if the condition $\alpha + \beta = 1$ is satisfied.

3. In the third part of the paper the problem of the existence of a solution of the system of equations (1) for arbitrary values of the parameters α and β is solved. It is shown that the system of equations (1) has a solution for arbitrary values of the parameters α and β if and only if the condition $\alpha + \beta = 1$ is satisfied.

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