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Part Five

PUBLIC REVENUE AND
PUBLIC EXPENDITURE IN
NATIONAL INCOME

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PUBLIC REVENUE AND
PUBLIC EXPENDITURE IN
NATIONAL INCOME¹

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*I Concept and Measurement of National Income*²

As a statistical concept national income is defined in this paper as the measurable part of the social product. The concept of national income is derived from notions of a pure exchange economy. It is usually discussed as if we lived in such an economy, that is, an economy ruled exclusively by the interplay of prices and costs. The economic system in reality, however, comprises other types of organization as well: the household, the non-profit institution and the governmental unit, the behavior of none of which is determined exclusively by price-cost relationships. The concept of 'social product' embraces the results of all the various kinds of work done, and at the disposal of the social group. On the other hand, it is plainly impossible to include the whole social product; the statistician must be content to include that part of the product which is measurable.

¹ The writer is grateful to Harold Barger for exceedingly valuable aid in revising the original manuscript. M. A. Copeland, Simon Kuznets, Fritz Lehmann and R. R. Nathan also made critical suggestions as a result of which the first draft of this paper was thoroughly revised. He wishes to thank Martha Anderson for help in bringing his manuscript into readable form.

² For more extensive discussions from somewhat different points of view see M. A. Copeland, Part One, and Clark Warburton, Part Two.

1 THE SOCIAL PRODUCT

How can we define the social product? By saying that this term denotes the results of all work done and at the disposal of the social group we merely shift the problem. It now becomes necessary to define 'work' in a social-economic sense. Not every human activity is 'work'. The effort put forth is not the proper criterion. Physical exercise taken for recreation may involve the same effort as the 'work' of a professional sportsman. Yet we do not regard the former, and we do regard the latter, as a part of the work to be measured by national income. Nor can usefulness serve as a criterion. There are many useful activities, like physical exercise, which it is not appropriate to include in national income; on the other hand, the usefulness of certain types of production and service which cannot be eliminated from national income might be questioned. If the criterion of usefulness were applied the calculation would lose its social-economic character and become a moral evaluation.

Or, is there perhaps some social relationship involved in the activity of our professional sportsman that distinguishes his exercise from that of an individual? This cannot be the criterion either. Writing a letter to a friend certainly involves a social relationship, yet it is not 'work', as the writing of a business letter is.

Dr. Kuznets suggests the "dominance of economic motives".³ This criterion leads us into psychological difficulties similar to those that Dr. Kuznets wished to avoid when he rejected the concept of 'income enjoyed' suggested by Irving Fisher. One man may conduct his business for the same psychological motives that induce someone else to pursue a hobby. In its literal sense the 'income enjoyed' can be measured only in psychic terms. The practical result of Irving Fisher's concept of income is that he excludes from income the part of the receipts that is saved. This part may become income, but only at a later stage.⁴ The person who saves certainly gives up the enjoyment of services he could buy at present. But does the thrifty person really abandon all

³ 'National Income', *Encyclopaedia of the Social Sciences*, XI, 208-9.

⁴ Cf. especially Irving Fisher's recent paper, 'Income in Theory and Income Taxation in Practice,' *Econometrica*, V (January 1937).

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 possession of this capital? In any case, no clear economic definition of national 'income' or 'work' can be based on a psychological concept.⁵ To come back to our example, it may well be asked whether the decisive difference lies in the fact that the professional sportsman draws remuneration for his activity. This certainly has something to do with the very essence of 'work' in a social-economic sense and yet it cannot be accepted as a general criterion, because we include in the social product many types of activity for which no monetary compensation is received.

What we need is a general institutional criterion, not a psychological or moral one; we need in fact a criterion that emerges from the economic organization of society. If someone receives compensation for any activity, whatever his motives in working or whatever the usefulness of his work, his activity is always regarded as a contribution to the social product by those who are ready to pay a price for his product or service. The market has stamped his activity as socially desired, even if not socially desirable. But the market is not the only device for deciding what activities are required in a society. As long as the family was the basis of social existence, and the family farm was the main unit of production and consumption, the head of the family ordered what was to be produced and consumed, and his commands decided what was play, and what, work. All work performed according to his orders, or according to a traditional household plan, was a contribution to the social product. Today fragments of a family economy are still interwoven with the market economy. And there is further a public sphere—the sphere of governmental activities. Here again it is not the market but decisions made by the politically responsible organs of the society that

⁵ In order to avoid psychological implications, I define individual income as the acquisition of the right to dispose of a share in the outcome of production. (This definition is qualified further in subsection 4 (d) of this Section.) This disposal may take the form of either saving or consumption. In consumption it is the purchase as such, not the ultimate act of enjoyment, that is decisive. From the viewpoint of the exchange economy the purchase of a commodity may be regarded as a final act by which it is transferred from the sphere of business to the sphere of the household. (A durable good, of course, may reenter the sphere of business when sold at second hand or when forfeited in favor of a creditor.)

stamp an activity as socially desired. The training of a soldier may not be compensated by money payments, it may not be related to so-called 'economic motives', yet it is a contribution to the social product if the legislative authorities decree that a part of the nation's human and material resources shall be devoted to national defense.⁶ In a communistic society all contributions to the social product may be organized in this way. Since our economy is a mixture of various forms of economic organization, we may distinguish various sectors of the social product—those related to (a) the exchange economy; (b) the economy of the household; (c) the sphere of government.⁷

Each sector makes its contribution to the social product with the help of certain material equipment. We shall see later that one of the problems in the calculation of national income arises from the necessity of distinguishing contribution to the social product from transformation of material equipment into parts of the disposable income ('capital consumption').

Here we merely point out that to each of these sectors corresponds not only a share in the social product, but also a share in the material equipment, the social wealth of a nation. The implements of a self-sufficient farmer, the house owned by the occupant, may be considered examples of household capital; industrial equipment belongs to the capital of the exchange economy; and roads, administrative buildings, or dams are examples of government capital equipment. Although these various sectors of our social economy may be distinguished, they are closely interlocked in the economic system as a whole.

⁶ J. M. Clark, *The Costs of the World War to the American People* (Yale University Press, 1931), p. 127, admits that the governmental personnel renders 'a valuable service'. He does not include these services, however, as contributions to the social product and the incomes received for them as parts of the national income, for these services are not 'self-sustaining'. Should all activities that are not self-sustaining be excluded from the social product? Is the work done, for instance, in the construction of a factory that will add to the production of consumable goods only in a later period 'self-sustaining' for the period in question? If not, must these incomes, too, be deducted from national income? My discussion of some of Dr. Clark's general formulations does not, of course, imply a criticism of his estimates of the war costs.

⁷ This classification is not exhaustive. I have already mentioned another economy, that of private institutions such as churches and philanthropic foundations. These, though under private ownership, are administered according to what may be called the budget principle.

2 THE MEASURABLE PART OF THE SOCIAL PRODUCT

We defined national income as that part of the social product which is measurable. No calculation of national income can include every activity covered by the broad concept of the social product. But it would be erroneous to confine our measurement to the exchange economy, for the line of demarcation between the sectors regulated by the market and the other sectors changes from period to period and from country to country.

Intertemporal and international comparisons of national income would be distorted, if the measurement included the exchange economy alone. To include all elements not subject to exchange, on the other hand, is impracticable. Where shall we draw the line? We wish to measure the social product with a common denominator: money. Therefore we rely on money estimates. Such monetary standards exist over the whole range of the exchange economy. They exist also in the spheres of public and institutional operation, for in these spheres economic activities are in the main paid for by means of money. So, for practical reasons, we include in the calculation all contributions to the social product that are compensated with money. When, however, in one country farmers consume a large part of their output in their own households, and in another country they sell the entire output on the market and buy the things they need, we must obviously evaluate the 'household-production' of the first country in monetary terms in order to make our totals for the social product comparable. The same holds good for a comparison between two countries, in one of which a large number of houses are occupied by their owners, while in the other, most of the houses are occupied by tenants. Or again, for a comparison of countries, one of which has a mercenary and the other a conscript army, a money income must be imputed to the homeowner in the former country, to the conscript in the latter.⁸

The decision as to which of the non-exchangeable elements shall be included in our national income calculation depends upon the social-economic structure of the countries and periods

⁸ For such a fictitious comparison, cf. G. Colm, 'Der Finanzwirtschaftliche Gesichtspunkt des Abrüstungsproblems', *Handbuch des Abrüstungsproblems*, ed. by Niemeyer (Berlin, 1927).

for which comparisons are made, and on the statistical material that is available for the money evaluations that are necessary. Thus I would exclude, for instance, the regular work of housewives or the services of members of juries as non-computable for national income calculations. We shall later find other non-computable elements in the government sphere. This distinction is, however, a distinction of expediency, not of principle. It is quite conceivable that for different purposes a different procedure would be feasible.

3 THE MEASUREMENT OF NATIONAL INCOME

The methods of measuring national income are, like the concept of national income, derived from the notion of an exchange economy. The exchange economy will be used as a starting point; other elements and modifications will be included later.

In a pure exchange economy in its simplest form individuals furnish factors of production (as labor, land, patent rights, capital) and individuals (business men) use these factors to produce commodities and render services according to the demand of the market. On these contributions to production the claim of individuals to draw remuneration and the opportunity for business men to make a profit are based. Remuneration and profits in turn give the right to dispose of a corresponding part of the outcome of production. According to this simplified scheme national income is equal to: (a) the sum of all individual incomes; (b) the sum of profits and of disbursements to the individual agents of production; (c) the sum of the values of consumers' commodities and services and goods for additional investment produced or rendered within a certain territory and a certain period.⁹

In view of this fundamental equation in the economic circuit three methods of measuring national income have been devised:

a) 'Income sum'—the sum of all individual incomes.

b) 'Value added'—the sum of business disbursements and profits. This sum can be calculated by deducting from the gross value of all sales (services included) those costs which are paid to other business units (costs for replacement included). The residual is equal to the sum of wages, interest and rents (in so

⁹ Cf. Copeland, Part One, Sec. I; Warburton, Part Two, Sec. I.

far as the last two are paid to individuals and not to other business units).

c) 'Social heap'¹⁰—the total sales value of all goods and services at the final stage, i.e., when they are handed over to consumers or invested as additional equipment.

Each of these methods, if carried out completely, would lead to the same result. And yet each method has its own merits if both the calculation of total national income and its breakdown into divisions are desired. The 'income sum' approach must be used if we desire to obtain a breakdown of total income according to income groups, or according to the geographical distribution of income receivers. The 'value added' method provides information concerning the industrial sources from which the income is derived, as agriculture, industry, commerce. The 'social heap' calculation allows a division of national income into income consumed and income invested.

The statistician following any one of these methods faces technical difficulties because the statistical information available is seldom sufficient and must be supplemented by estimates, even by guesses. There would be no great difficulties if the real economy corresponded to the simplified scheme of an exchange economy. But in fact, as suggested above, it consists of various kinds of economic organization, interlocked in the most perplexing fashion. Only a few of the difficulties met in the actual measurement of national income will be discussed here.

4 SOME SPECIAL PROBLEMS IN MEASURING NATIONAL INCOME

a) Individual income was defined above as the acquisition of the right to dispose of a share in the outcome of production. The sum of all individual incomes is equal to national income only if every income recipient makes use of the right to dispose of his share either by consuming or by saving. Actually, income recipients can also *transfer* their rights to other persons or institutions either voluntarily (e.g., by gifts to charity) or compulsorily (e.g., by taxes or fines).¹¹

¹⁰ Sir Josiah Stamp suggested the term 'national heap' in *Wealth and Taxable Capacity* (London: King, 1922), p. 42.

¹¹ Cf. Copeland, Part One, Sec. V, 7.

These persons or institutions thereby receive income without having contributed anything to production in order to acquire it. Thus we get the distinction between genuine incomes and transferred or derived incomes—a distinction that would not exist in a pure exchange economy. In calculating national income according to the 'income sum' approach, there are two possible procedures. The amounts voluntarily or compulsorily transferred may either be deducted from the genuine incomes; or their receipt may be neglected in summing up individual incomes. When income taxes are used for relief payments, for instance, we can either deduct the taxes from the income of the taxpayer and include the relief income in the income sum; or we can count the entire income of the taxpayer but omit the income of the relief recipient. The former method seems to be more consistent with the income sum approach, especially when a breakdown of the total income according to income groups is intended. The distribution of actual purchasing power can be shown accurately only when the income is counted in the hands of those who can ultimately dispose of it. We may call income disposable (as distinguished from income acquired) the income after deduction of those parts which are voluntarily or compulsorily transferred from the individuals who acquired them to other individuals, the government or private institutions. The sum of income acquired and income disposable must be identical,¹² the difference being in the manner of distribution.

b) Not only individuals but also corporations, institutions and the government are income recipients. If a corporation does not distribute all its profits, it retains the right to dispose of a share in the outcome of production (for instance, for investment), which means that it has an income. Undistributed profits of corporations are therefore considered as income.

As will be shown later, charitable or philanthropic foundations, universities, churches, scientific associations likewise receive incomes. If they derive revenue from funds invested, they acquire genuine income. If they receive grants and gifts from the income of individuals, these amounts can be counted as income disposable by institutions, provided they are deducted

¹² This identity exists only if the possibility of a negative income disposable is considered.

from the incomes of the donors. In like fashion governments may also acquire genuine income or receive derived income. Thus, in addition to individual incomes, we have also corporate, institutional and government incomes.

c) International affiliations necessitate further modifications of the simple formula suggested at the beginning.¹³ If residents of a creditor country receive interest from abroad, the 'income sum' may become larger than the 'value added' by production in the same territory and period. In the debtor country the opposite occurs. Net values produced by, and at the disposal of, the people do not necessarily coincide within the same area and time, e.g., when war contributions are paid by the people of one country to those of another. Since the production of goods provides the means for their disposal, I consider the latter as the crucial question in deciding where this income ought to be counted. Thus it is usual to consider income derived from foreign investments or interest from war debts, etc., as income in the country where these payments are received.

d) A puzzling problem arises from the distinction between income and property. Money obtained by an individual through withdrawals from his bank account is not income. The income concept must be further qualified. The right of the recipient to dispose of a share in the outcome of production must be acquired without touching his property. Even if a business firm does not provide for the necessary replacements for the upkeep of its equipment, the disbursements it makes nevertheless constitute income in the hands of its wage earners or creditors. In calculating national income, however, a cross entry 'negative business savings'¹⁴ must be made; otherwise national income would be larger than the 'net product'. A whole group of problems emerges from this distinction between income and property with which I cannot deal here, as for instance the appreciation or depreciation of property values, and gains from speculation.¹⁵

¹³ Cf. Copeland, Part One, Sec. II, 1, and V, 5.

¹⁴ Cf. Simon Kuznets, *National Income, 1929-1932*, 73d Cong., 2d Sess., Senate Doc. 124 (1934), and *Survey of Current Business*, Vol. 16, No. 7 (July 1936), p. 14.

¹⁵ I cannot discuss here the question whether capital gains are to be considered a part of national income. I wish to emphasize only that this question is not identical with the problem whether capital gains should be taxed. The economist deals with three concepts of income, which are related but not identical. One, used in

e) The last difficulty I wish to mention concerns the meaning of 'value' in our national income definition. Money valuations do not have the same significance in the various sectors of the social product. In the exchange sector they are determined by prices that represent the supply-demand relationship. In the realm of public activity they are determined by costs. Here we assume that the political bodies that appropriate the money consider government services at least worth their cost. For calculations based on imputed values (as suggested in the case of a conscript army) we act on the assumption that the public services of the conscripts have the same value as if the latter were to earn a minimum wage.¹⁶ To the extent that we include income arising within the economy of the household we have to rely entirely on fictitious values, transferred from the exchange sector to this sector from which exchange is absent. For example, we rate farm products raised for the consumption of the producer at the value for which the same products would sell on the market; and the rental value of a house owned by the occupant as equal to the rent that a landlord would receive for it. This use of market and cost prices as a basis for calculating national income prevents us from regarding the national income total so obtained as a direct measure of the 'social value' of the social product. Its 'social value' is not a measurable quantity. As J. M. Clark says: "We shall presumably never discover a definite yardstick of social

economic theory, is a functional concept. The second is that of taxable income through which the individual's capacity to pay is measured. The third, a statistical concept, is used in order to avoid omissions and duplications in a national income total. If, for reasons of tax policy, capital gains are included as taxable income, or certain parts of income, such as those spent on life insurance premiums, excluded, this affords no presumption as to the correct method of calculating national income. The argument, for instance, that in certain cases the gain made by A was possible only through a corresponding loss by B is an argument for excluding this gain from the national income calculation but it is no argument for excluding it from taxation.

For discussions of the treatment of capital gains by other contributors to this volume see Copeland, Part One, Sec. IV and V, 8, discussion by Simon Kuznets, and Dr. Copeland's reply; Warburton, Part Two, Sec. VI; Simon Kuznets, Part Four, discussion by M. A. Copeland, Milton Friedman and A. W. Marget, and Dr Kuznets' reply.

¹⁶ Service in a conscript army can be considered as a taxation in kind equal to a wage that the conscripts are prevented from earning by reason of their military service.

value comparable to the dollar yardstick of exchange values.”¹⁷

In view of this important qualification what remains of the usefulness of national income calculations? National income totals can be used for comparative purposes only if we can assume that the distortions due to differences between exchange value and social value are approximately the same in the countries or periods compared. In such comparisons, however, we must eliminate differences in the purchasing power of the money that is used as the common denominator. This again involves an important limitation in the use of national income totals, for differences in price levels can be eliminated only if the habits of consumption in the countries or periods in question are at least somewhat comparable. Otherwise no index number applicable to both countries, or both periods, can be constructed. These limitations have less importance if the national income calculations are used merely to analyze the composition of the totals.

*II Public Revenue in National Income*¹⁸

1 INCOME VS. NON-INCOME TAXES

The treatment of government activities in national income measurement depends upon: (a) the purposes for which the government spends money; (b) the types of revenue by which the expenditures are met. It is difficult to isolate the discussion of these two factors. We shall start with the assumption that all taxes are spent for financing some type of activity whose result forms a part of the social product, and therefore must be added to the net product of the exchange economy. We shall then discuss the treatment of this amount under various assumptions as to the type of tax imposed to meet these expenditures. In the next section we shall examine the types of expenditure actually incurred by governments, and the modifications that result from the fact that not all such expenditures are for services that increase the social product. No definite conclusion as to the treatment of government activities in the calculation of national

¹⁷ *Preface to Social Economics* (Farrar and Rinehart, 1936), p. 44.

¹⁸ For a briefer discussion of the problems covered in this and the following sections see Warburton, Part Two, Sec. IV.

income is possible, until the type of revenue as well as the type of expenditure involved have been analyzed.

We may start with a schematic example (cf. diagram, Appendix C, 1) in which we assume that all government expenditures are made for teachers' salaries and that all government revenue is raised by a personal income tax. Assume that the sum of the incomes of all private persons is 90, out of which 10 is paid in income taxes, this revenue being paid to teachers (who are, for simplicity's sake, assumed to be tax-exempt). How large is the national income if the teachers' services are considered a contribution to the social product? We may say that it is 90 plus 10 equals 100. Someone might object that we have been guilty of double counting; that the teachers' income is counted twice—once as part of the income of the tax-paying individuals, once as the income of the teachers. But obviously this sort of double counting originates from the very essence of the economic exchange process. In my income the portion that I spend for bread is calculated; and the same amount appears once more in the income of the producers of bread. The only criterion involved is whether I make a genuine contribution to the social product. The 100 in our example corresponds to a production for the market of 90 and to a value for educational services of 10. The income sum must be equal to the 'social heap' of market and government services or commodities. But is it correct to calculate the 90 as the income of private individuals, since these individuals are deprived by the government of the disposal of 10 of this income? If the 'income sum' approach is considered a device for answering not only the question what the total income is, but also who can dispose of it, we might better say, as suggested above: national income is composed of 80 at the disposal of private agents of production, 10 at the disposal of teachers, 10 at the disposal of the government. And again we must emphasize that the inclusion of the same amount twice, once as the income of the teachers and once as the income of the government, does not involve double counting.

It is questionable whether we should call this item government *income*. Income has two features: that it is acquired as a compensation for a contribution to the social product, and that its receiver can dispose of it as he pleases. These two features are

separated in the case of tax revenue. The taxpayer acquires the money and the government disposes of it. If we wish to examine what value the market places on the productive contributions of various groups of individuals, we should still consider the part of private incomes that is taxed away as the income of these taxpayers. If, however, we wish to study the purchasing power of various groups of the population, this part of the income should then be deducted and the tax should be considered as income at the disposal of the government. Since 'income sum' calculations are widely used to analyze the distribution of income disposable, I suggest the adoption in general of this procedure: that is, the calculation of private income after deducting personal income taxes, and the inclusion in the income total of a corresponding item for government revenue.

Now let us modify our assumption and replace the personal income tax by a sales tax or any other business tax. Further we assume that this tax cannot be shifted by raising prices to the consumer, but that entrepreneurs are compelled to curtail payments to the factors of production (cf. diagram, Appendix C, 2). Then, using our old example, total individual private income drops to 80, the teachers' income is again 10, and the total is 90. But how does it happen that in this case, identical with the former except for a different method of taxation, we find a smaller national income total; and that this national income total is smaller than the amount of goods produced for the market plus the teachers' services? The answer, of course, is that we omitted the 10 units of taxes. They must be added, so that we get again the same total national income: 80 of private incomes disposable, plus 10 of income disposable by teachers, plus 10 of taxes not included in the private incomes.

But how should these taxes be treated in our calculation? Again, there are two possibilities. First, looking at national income from the production viewpoint, we may say that the amounts paid as business taxes were earned by business, but could not be distributed by business. We should consequently add the business taxes to the total of individual incomes as 'business income'. Second, it seems more accurate to interpret these business taxes also as government income, because this amount, although it is earned by business, is not at the disposal of the

agents who produce for the market. In the case of income taxes the problem was how they should be allocated, whether as income of taxpayers or of government.¹⁹ All other taxes and other forms of government revenue that curtail private income are to be added to the sum of private incomes. Income taxes take away a certain part of income already created; business taxes (under these assumptions) prevent the formation of a corresponding amount of income. As J. M. Clark says: "Taxes paid by business do not appear in the figures of national income, though they represent a division of the income of the business in which the Government gets funds which might otherwise have been divided between stockholders."²⁰ This refers to corporate income taxes or taxes on surplus which reduce profits. Other business taxes may be shifted back to the wage earners and thereby may reduce the wage income. In both cases, if such taxes are used for financing government services of the kind assumed up to now, they must be added as government income to the income sum of individuals.

2 SHIFTING OF NON-INCOME TAXES

The assumption we made in this example, and which seems to be implied also by Dr. Clark, is that taxes on business cannot be shifted to consumers. We assumed that they result in a curtailment of the nominal income of entrepreneurs or wage earners. Our next task is to test this assumption and to ask what conclusions for the calculation of national income follow if we find that under certain conditions such taxes may result in higher prices.

Some economists²¹ take it for granted that business taxes cannot be shifted to prices. They say, for instance, that in general a sales tax cannot affect the price level. An increase in the prices of all products due to a shifting of the tax could be assumed only if other factors—monetary influences—are supposed to change

¹⁹ It is assumed here that all income taxes are included in the sum of private incomes.

²⁰ *The Costs of the World War to the American People*, p. 127.

²¹ Cf. e.g., J. S. Mill, *Principles*; Josef Schumpeter, 'Wen trifft die Umsatzsteuer?', *Der Deutsche Volkswirt*, Vol. III (1928). Three dissertations by graduates of Kiel University deal with this subject critically: P. Braess, *Steuersystem und Preisniveau* (Leipzig, 1933); F. Mombert, *Die Wirkungen der Kosten-Steuern im Konjunktur-Zyklus* (1935); O. Pfeiderer, *Die Staatswirtschaft und das Sozialprodukt* (Jena, 1930). Cf. also H. Neisser, *Der Tauschwert des Geldes* (Jena, 1928).

simultaneously. This proposition seems to be warranted if we consider the following example. A sales tax is imposed for old age relief. Simultaneously with the first payment of the tax, business men raise their prices. But, at the higher prices they cannot find customers for all their products. Consequently, sales drop and production decreases; workers are dismissed, and unemployment forces wages down until a new equilibrium is reached at lower wages but at the old price level. Purchasing power of the money unit in terms of goods (but not labor) is the same as previously. Through the sales tax a part of the former wages of labor has been transferred to those who receive old age relief. The tax has been shifted back to wages. But this is not our case. The example just mentioned implied no government services but merely a transfer of purchasing power from the taxpayer, or from those who ultimately must bear the tax burden, to those who benefit from the payments.

The situation is quite different if we think, e.g., of a sales tax financing an increase in government personnel. Again, we assume that business men try to raise prices, that sales and production drop in quantity, that unemployment develops. But here the difference between the two assumptions becomes significant. In the case of transfer expenditures the increasing unemployment pushes wages and thereby prices downwards until the former level of prices and employment is restored. In the present case the dismissal of workers from private employment is offset by the hiring of government personnel. A new equilibrium is restored with a reduced quantity of products on the market at higher prices; wages remain unchanged; the temporarily unemployed are absorbed into government employment. In the 'social heap' a part of the goods produced for the market is replaced by a corresponding value of government services. The tax has been shifted through higher prices.²²

Our reasoning concerning the shifting of a sales tax the pro-

²² It might be argued that this case does not involve a real increase in prices because the increase in market prices is compensated by an increase in the gratis services of the government. I think that this is a rather artificial and impractical construction. No one would include in a price index the prices paid by the government for defense and attack. The price index can refer only to goods and services at the disposal of individuals. Some kinds of government service may be included, but others should decidedly not be.

ceeds of which are used to increase government personnel may be illustrated by a schematic example (cf. diagram, Appendix C, 3). We assume a national income of 100 before taxation begins. This income corresponds to a 'social heap' of goods produced for the market of 100. The government starts to collect 10 as a sales tax and begins to hire workers. Prices rise because of the tax, until the price index reaches about 111 per cent. The entire output cannot be sold at these high prices. The volume of output (measured at the old prices) drops from 100 to about 90 but the sales value remains 100. The workers who formerly produced 10 units are dismissed by private enterprises, are hired by the government and are now rendering government service. The private income sum is 90 income from marketable products, plus 10 income of government personnel, equals 100. The nominal income remains the same. If this income is, however, adjusted for price changes by the price index of 111 per cent, a reduction of the real income from 100 to 90 seems to have occurred although the same amount of work has been done. The only difference is that a part of the production for the market has been shifted to government service.

This result was reached through a simplification of reasoning which can be only the first step in any analysis. We assumed a flexible labor market, no differences in the quality of labor, a monetary system reacting to the needs of the market and the absence of international competition. Also, we were concerned with the general level of market prices only, neglecting changes in the relationship among various prices that follow the imposition of the tax in question. Taking international competition into account, we must distinguish between competitive and non-competitive prices. Considering all these necessary modifications, I think we must at least assume it probable that sales taxes used for an increase in government personnel and likewise in government purchases will result in a general increase in market prices.

The example above referred to sales taxes. A similar result would follow from an examination of payroll taxes, and of excise or real estate taxes. A tobacco tax, for example, will increase the price of tobacco. The question, however, is whether this increase in one single price may not be offset by a slight decline in all

other prices. Under our assumptions such a decline must be expected with transfer expenditures but not with expenditures for increasing government personnel or government purchases.

The conclusion to be drawn from these examples is important for our problem. In the case of income taxes, government services are paid for by the income receivers who are taxed. The addition of these taxes as government income is needed only if the income taxes have previously been deducted from the income of the taxpayers. In the case of non-income taxes inducing a curtailment of private incomes, the government services are paid, for instance, by the entrepreneurs or by the workers whose profits or wages are reduced as a result of these taxes. Here an item government income must be added to individual income; otherwise national income would be underestimated. When non-income taxes are shifted to prices every consumer pays indirectly for government services in the prices he pays for the products that he buys on the market. In this case, therefore, not the nominal but only the real private income is reduced by the taxes.

The theoretical reasoning suggested that non-income taxes spent for financing government services will probably be shifted to prices, so that this becomes the most important case for our problem. We should, however, not forget that we proceeded in a rather abstract way and that whether such non-income taxes will affect the nominal or the real income can be ascertained only after the credit and business conditions of the period in question have been examined. But we must accept as a theoretical presumption that such taxation will probably increase the price level.

3 TAX INCIDENCE AND THE CALCULATION OF REAL NATIONAL INCOME

What bearing has this analysis of the incidence of non-income taxes upon the calculation of national income? If we assume that the taxes result in a higher price level, they need not be added to individual incomes as long as we wish to measure only nominal national income, i.e., income in current prices. The nominal incomes of entrepreneurs, investors or workers are not reduced by tax payments of business firms that are offset by higher

prices. Such nominal figures may be used, for instance, if it is intended to express certain parts of the national income as percentages of the whole.

If we wish to calculate national income for comparisons from period to period or from country to country the situation is quite different. A comparison of nominal figures has no meaning unless differences in the purchasing power of money are eliminated. In making comparisons between different periods such differences are usually eliminated by deflating the nominal figures with the help of a price index. We may resort to an example that compares national income in two periods. Of an income of 100 in the first period the government raises 10 by taxes on personal incomes, and uses the yield to finance educational services. In the second period everything remains the same, except that the personal income tax is replaced by a general sales tax. This sales tax does not force a reduction of nominal private income but results in an increase in market prices of 11 per cent. In the comparison of real income the price index is applied to nominal income of the two periods yielding 100 for the first and about 90 for the second. This result shows a decrease in the real income from the first to the second period, although nothing changed except the method of taxation. This certainly cannot be right. The increase in market prices in this case is the fund from which government services are financed, and this increase should not be eliminated if these government services are considered a contribution to the social product. Since it is, however, practically impossible to distinguish an increase in prices due to such taxes from an increase in prices due to other causes, the only solution is to add to the income reduced by the price index the amounts collected from such taxes and used for government services (cf. Appendix C, 3).

However, a further difficulty is involved. Actually, we very seldom have to compare, as we did in our example, a period in which business taxes are collected with a period that is entirely free from such taxes. Changes in taxation may have occurred from one period to the other, but most of the taxes probably existed in both periods. The same holds true when comparing income for various countries. There will be perhaps more taxes in one period than in another, or in one country than in another, but

the price level of all periods and all countries will be influenced by some amount of non-income taxes used to finance government services. Someone might suggest that we therefore add to national income only such an amount of taxes of this kind as has been added during the period under consideration. But this procedure does not seem practical for two reasons. First, the national income computation would have to be on a different basis when comparing 1935 with 1929 than would be appropriate in comparing 1929 with 1913. Second, it would not be sufficient to consider only changes in taxation; we should have to examine also what use was made of the tax yield. Our whole reasoning assumed that such taxes were used to finance public services. But we found that the same taxes used to finance old age pensions, for example, probably do not increase prices. The puzzling question what part of additional taxation has been used to finance public services must be answered.

Two practical solutions seem possible: either to omit these taxes and thereby get an underestimate, if the increase in prices resulting from these taxes is eliminated by a price index; or to add the taxes to the real income and so get an overestimate, if a part of these taxes already existed in the base year to which the price index refers, or if such taxes exist also in the countries the price level of which is used as a basis for international comparisons. I am inclined to choose the latter procedure for the following reason. All nominal figures are understood to represent a certain quantity of commodities and services. If we hear that national income in the United States in 1929 was 83 billion dollars we think of the purchasing power of the dollar in that year even if no index is applied. And the purchasing power of the dollar is understood as the quantity of commodities and services that could be bought on the market in that year with a certain number of dollars. Since dollars represent nothing but commodities and services I suggest that non-income taxes used to finance government services be added to the sum of private incomes.

Thus, for practical calculation we do not need to ascertain whether the non-income taxes are shifted forward to prices, backward to wages, or remain as an inroad on profits; and whether they affect real or only nominal income. If we think of national

income in terms of commodities and services we should add the non-income taxes, if they are spent for government services of the type assumed in the discussion above.

III Public Expenditure in National Income

1 GOVERNMENT COST SERVICES

The treatment of taxes was discussed under the assumption that the funds derived from taxes were used to finance government services. We must now qualify our statements by examining more closely the importance for our problem of differing types of expenditure. The statement that non-income taxes should be added to personal incomes plus undistributed profits in a real income calculation is valid only if the government services are, so to speak, at a final stage. But there are government services that should be interpreted rather as producers' goods. For instance, a government builds roads that are used mainly by trucks to carry raw material to factories. The manufacturer pays for these roads by means of some form of automobile taxation. In calculating the 'social heap' it would be a mistake to add to the value of the goods produced for the market the value of this government service, as we did in preceding examples. These government services are absorbed in the production of goods and do not represent a part of the 'social heap' in addition to the goods produced for the market. In a 'value added' calculation these taxes are to be considered cost payments like those for raw materials or fuel. We may use an example that considers only such activities (cf. Appendix C, 4). Let goods produced for the market be 100; let government services, which we may consider means of production for these goods, be 10, financed by business taxes. Business distributes to workers, capitalists and entrepreneurs (or keeps as undistributed reserve) 90. Ten is the income of government employees (disregarding the fact that material also is used for roads). Then the national income is 100, equal to the final value of the goods produced for the market. If the same expenditures were made on, let us say, education, we should calculate according to our preceding example: private income 90, plus income of teachers 10, plus taxes 10, equals 110 (cf. Appendix C, 3). And this income sum would be

equal to the value added by private production plus value added by government services, and also equal to the value of the 'social heap', consisting of 100 goods produced for the market plus 10 government services.²³ We conclude that government services, which represent means of production for the private sector of the economy and are financed by non-income taxes, should be deducted from government income.²⁴

In calculating the amount spent for these cost services a difficulty arises. Direct expenditures for a certain purpose do not represent the entire cost. The expenses of tax administration, for instance, pay for a service that must be interpreted as a means for carrying on the other services of the government. The value of the government services rendered to business or to the citizens or to the community as such should include a portion of these services, which represent 'cost services for the government'.

2 TRANSFER EXPENDITURES IN GENERAL

Not all expenditures by the government are for public services. Here we meet the problem of so-called 'transfer expenditures'.²⁵ Relief payments, for instance, provide income to individuals who do not contribute to the social product. Two ways of handling this problem were mentioned above. We can either exclude all relief incomes and other incomes derived from 'transfer' expenditures from the computation of the sum of personal incomes; or we can first include them in the income disposable by individuals and later deduct them from the government income. The former seems simpler, yet, as we remarked above, the latter is a more adequate treatment for theoretical and practical reasons. The theoretical reason is that the income sum method should show every income *at the point where it is disposable*. Beyond doubt the relief income is disposable in the hands of its recipients. For

²³ If we assume that the educational services consist of 5 costs for material and 5 expenditures for salaries, then the value added method would include the 5 units for material among the value added by private industry, and only 5 would represent value added by government. In the 'social heap' calculation the 5 costs for material used for government services must be deducted from the 'heap' of goods produced for the market, because they are not available to the consumers of these goods and are included in the value of government services.

²⁴ Cf. A. C. Pigou, *A Study in Public Finance* (London: Macmillan, 1928), p. 43, footnote 1.

²⁵ *Ibid.*, Ch. III.

instance, relief income that is raised by a personal income tax is disposable not by the taxpayer but by the destitute. If we include the tax revenue as government income we must deduct the amounts that are not used by the government for administrative government service, but that are transferred to the recipients of relief, etc., who in turn are enabled to buy in the market. The practical reason for preferring the latter treatment is that, while it would be easy to exclude relief income from the compilation of the sum of all private incomes, there are other forms of transfer incomes that it would be more difficult to identify among personal incomes. Business subsidies may flow into the hands of wage earners or capitalists, or may become a part of corporate profits. Thus the calculation of national income by the income sum approach is simplified if the following formula is used: ²⁶ *National income equals (I) the sum of all personal incomes (including incomes derived from government transfer expenditures) minus (II) taxes paid from personal incomes plus (III) undistributed profits* ²⁷ *minus (IV) taxes from corporate profits plus (V) government revenue (including surpluses of public enterprises) minus (VI) government cost services minus (VII) government transfer expenditures.*

To determine in detail what expenditures are transfer expenditures involves theoretical difficulties. All kinds of relief and soldiers' pensions are obviously transfer expenditures. The latter might be included as compensation for war services. However, these services belong to a different period. Since they are not regularly recurrent they do not represent a contribution to the period under consideration. The situation is different with respect to officials' pensions. They also are paid for services rendered in the past. But here we must take into account the fact that pensions, where they exist, are a part of total compensation. Therefore to include only the salaries of officials who have the right to draw a pension later, would lead to an underestimate of their compensation. By including the normal pensions that are paid to former officials we make up for the underestimate of remuneration paid to officials in active service. This method in-

²⁶ This formula is not complete. We disregard items such as institutional incomes, the discussion of which does not belong to the topic of this paper.

²⁷ Or minus negative business savings.

volves mistakes only if the number of officials who claim a pension changes greatly from one period to another.²⁸

3 DEBT SERVICE

A very moot question is the treatment of expenditures for the debt service. Service for debts incurred for self-liquidating projects need not be treated differently from private debt services. The net product of a government-owned power plant is divided among labor, entrepreneur and investor exactly as is the net product of a privately-owned factory. The only difference is that the profit becomes government revenue and must be added to national income exactly as business taxes that result in a reduction of individual incomes. And interest for debts incurred for the construction of such public enterprises must also be considered genuine income. Interest on such debts will be paid from the proceeds of these self-liquidating projects.

How about debts incurred for non-liquidating but 'productive' purposes, such as the construction of roads? We may find the answer if we imagine the following situation. Let us assume that a road is built as a self-liquidating project, as a toll road. Capital invested is ten million dollars, annual collections amount to one million, one-half of which is used for current expenditures (such as maintenance and administration) and one-half for interest payments. Income derived from this source is 0.5 million for workers employed in maintaining the bridge or in producing material used for its maintenance; 0.5 million as interest to investors. One day the policy is changed. The community discontinues the levy of a toll and raises the million through business taxes. This change in the fiscal policy should certainly not change total national income. What has happened is merely a shifting of the burden from those persons who use the bridge to those who pay taxes. For the economy as a whole the situation does not differ from that of a self-liquidating project. The additional interest payments correspond to the services available through the use of the bridge. Under the original policy of levying a toll the relevant portion of national income is calculated as 0.5 wages plus 0.5 interest plus 1.0 government revenue from the toll equals

²⁸ The Department of Commerce, in its recent publication, included both veterans' pensions and disbursements of the civil service retirement fund.

1.0 goods consumed or invested by the receivers of these incomes plus 1.0 value of the government service. Under the new policy the equation is exactly the same: 0.5 wages plus 0.5 interest plus 1.0 tax income of the government equals 1.0 consumers' and investors' goods plus 1.0 government service. The conclusion is: interest payments for debts that were incurred for government investment are a genuine part of national income. If all additions to 'government capital' were financed by borrowing it would be relatively easy to distinguish between expenditures for investment and for current items, the latter including costs for the administration and maintenance of this investment and the service of the debt incurred in the construction of government equipment. Since actually much government investment is financed by current revenue, it seems in practice difficult to distinguish between government investment and current expenditure. If roads are built from current revenue in one period, then in the succeeding period the people enjoy a government service for which no item appears in national income (as when no rent is imputed to the owner, who is also the occupant of a house). I consider these government services obtained from former investments out of current income one of the instances where the inclusion of estimates would be too vague on the basis of statistics at present available. But a certain incomparability remains if we compare two countries, one of which financed road construction by borrowing, the other by current taxation.²⁹

The third instance that should be examined relates to interest payments on war debts. Corresponding to the income derived from the payment of interest on war debts there exists no compensating item in the social product of the same period. If we include these interest incomes as genuine incomes, then the sum of incomes will be greater than the sum of consumers' and investors' goods plus government services. These services were rendered in the past and belong to a different accounting period. The current costs of a war must certainly be calculated as the sum of all expenses, whether they are met by taxation or by bor-

²⁹ M. A. Copeland (*Journal of Political Economy*, XL, 1932, p. 31) says: "The great difficulty with government property income is due to the deplorable and thoroughly unbusinesslike methods of keeping government accounts."

rowing, but the later interest payments can be considered only as a transfer of purchasing power from the taxpayers to the holders of war securities.³⁰ If we include interest receipts of this type in the calculation of the sum of all personal incomes, then we must later deduct this item, together with the other transfer expenditures, from government revenue.

The same holds true for debts incurred for financing any current deficit unless the deficit was caused by additions to 'government capital' which render services corresponding to the cost of the debt service.

4 SUBSIDIES

Current subsidies paid to business (other than capital subsidies) induce an increase in private incomes through an increase in wages or profits (or prevent a drop in wages or profits that would otherwise be expected), or bring about a reduction in prices and thereby increase real incomes. They must be considered transfer

³⁰ If a country wipes out its war debt by inflation after the war the total war costs are not diminished. They are merely distributed in another way by being imposed definitely upon the holders of securities instead of the taxpayers. Whether such a method increases or decreases total national income depends upon whether the economic frictions resulting from heavy taxation or from inflation are worse. The comparison of the national income of Great Britain and Germany, e.g., would be entirely misleading, if interest on war debts were included in the national income of the former.

Dr. Kuznets, in commenting upon the first draft of this paper, made an interesting observation. He suggested that ordinarily only the defeated countries wipe out war debts after a war; consequently war debt service is paid only in victorious countries. He takes this as an indication that war investments are productive for these countries, but unproductive for the defeated countries which eliminate the debt by inflation.

The productivity of the World War was certainly not material. It can be counted as a gain in national prestige alone. To the extent that the War resulted for some countries in better economic conditions (e.g., better markets) the effect is already included in other items of the national income, and the taxes for meeting the war debt services must be treated as cost payments. If the value is in the immaterial capital of prestige, then we must interpret the tax paid for war debt service in victorious countries as a compensation for the enjoyment of living in a victorious country. One objection to this viewpoint, ingenious as it is, is presented by France, Italy and Belgium which, although victorious, depreciated their war debt about 80 per cent. Why was their investment in the War so much less productive than that of Great Britain? I think that it is much more natural to regard this national prestige, which certainly exists, as one of the 'unpaid costs and unappropriated services' (J. M. Clark), and to continue the usual treatment of war debt interest payments as transfer expenditures.

expenditures since they correspond to no contribution to the social product. If we assume that they appear in the sum of personal (or corporate) incomes in one way or the other, they must be deducted from the total, as must relief expenditures and interest on public borrowing for consumption.

R. F. Martin ⁸¹ believes that whether agricultural benefit payments are to be regarded as compensation for a contribution to the social product depends upon the statistician's attitude to the Agricultural Adjustment program. He suggests that the Department of Agriculture includes these receipts as a part of national income because it considers them payments made in return for cooperation with the government. It might be argued, according to Mr. Martin, that these payments should be deducted because they are made not for production but for the curtailment of production. Similarly it could be suggested that relief payments also are not transfer expenditures but are made as a compensation for a service. The service performed by the unemployed would be that of keeping quiet. These expenditures would probably have to be listed among the other expenditures for law and order. And yet there remains a difference. The difference between police expenditure and relief payments as a means of maintaining law and order is that the police are occupied and a certain part of the labor force is used up; the recipients of relief, on the contrary, are still available for employment. The main significance of the category 'transfer expenditures' is that no national factors of production are exhausted. That transfers of income from the taxpayer to the unemployed may have the best social effects is one of the many instances where a policy results in certain 'social values' that find no direct expression in any item of national income when it is based on exchange values. I consider benefit payments as subsidies to those farmers who agree to reduce their production. The subsidies are intended to make up for a part of the loss. They belong to the income disposable by farmers but they are transfers and must therefore be deducted from government revenue.

The treatment of farm benefit payments in the same manner as other farm income might be urged for another reason. It might

⁸¹ *National Income and Its Elements* (National Industrial Conference Board, 1936), p. 58.

be said that these subsidies are designed to make up for an extremely low market price, and that farm income plus subsidies represents an income corresponding to the real contribution of farmers to the social product.³² To accept such a fictitious price as the basis for the calculation is logically possible only if the index of agricultural prices is also constructed on the basis of market prices increased by the amount of the subsidy.

The application of an index of market prices to an income that has been increased by subsidies would distort the result of a real income calculation. This statement allows a certain generalization. Some may find it inconsistent that we do not consider the income the farmers derive from subsidies a genuine part of national income, while we do include in the calculation the income teachers derive from payments by the government to schools. Why do we not call these payments subsidies, too? The market value of the farmer's product is low, the market value of the teacher's service is lower, indeed it is zero, so that there seems to be a quantitative difference only. But there is actually also a qualitative difference. Farming belongs to the market section of the economy. Public education does not. In no price index is public education included with a zero price. But the low prices of farm products are included. This gives us a criterion for distinguishing between subsidies and government expenditures for services. A difficulty is presented by subsidies to public service enterprises. If these enterprises belong to the market sphere covered or supposed to be covered by price indices, then the payments are to be regarded as subsidies—transfer expenditures. If they belong, however, to the administrative sector not usually represented in price indices, then the payments must be regarded as expenditures for government services.

³² The calculation of the Department of Commerce seems to be based on similar considerations (*National Income in the United States, 1929-1935*, Washington, D. C., 1936, p. 64). The inclusion of benefit payments as farm income is not objectionable in itself, since the processing taxes are not counted as government income. But the authors of this document do not profess to include non-income tax revenue in government income whether the proceeds are used for financing government services or making transfer payments. Thus the farm benefit receipts are counted in this calculation exactly like the income of teachers or other government employees if financed by non-income tax revenue. And this seems to me objectionable.

5 DEBT REDEMPTION AND CAPITAL TRANSACTIONS

In discussing transfer expenditures we referred to interest payments alone. How about debt redemption? We examine first private debt redemption in general. A business enterprise may amortize its debt out of current receipts from the sale of its products. (Whether an enterprise distributes higher profits or increases its debt redemption is irrelevant; the current national income remains the same.) If we assume that every investor who receives back a part of his former capital outlay reinvests it, then such a policy of debt redemption is a form of compulsory saving. This amount is certainly not income to the investor; it is 'positive business saving' by the debtor. Similar is the situation of a state that uses a surplus of taxes or fees to amortize its public debt. Let us use our example of the toll bridge again, assuming that interest amounts to 0.3 million dollars, debt redemption to 0.2 million, while 0.5 million is used as maintenance expenditures for wages. The national income, as far as these items are concerned, must be calculated in the following way: 0.5 wages plus 0.3 interest plus 1.0 government income plus 0.2 government 'saving' (debt reduction) equals 1.0 production of consumers' and investment goods plus 1.0 government service.

The assumption underlying the above conclusion is that the value of the service, measured by the actual toll collection, is such that, besides meeting current expenditures, it allows a surplus for debt redemption. The moment we pass to non-profitable but productive government investment the calculation becomes highly artificial. Let us assume that the government invested one billion dollars in road construction and pays in a certain year not only 400 million in interest but also 600 million as an extraordinary debt redemption, in addition to one billion maintenance costs—the sums being derived from taxation. Since we have no method of measuring the value of the service rendered by roads other than by its cost we cannot say that the value of this public service in the current year is two billion dollars; and that this two billion service equals the two billion taxes raised which allow not only for paying the current maintenance costs and interest but also for the extraordinary debt redemption. We have no way of dealing with this case other than to measure the value of

public services by their own costs which may be regarded as a minimum evaluation. The legislative bodies that appropriate a certain sum for a certain purpose consider it worth the expenditure. Among the costs could be included, besides interest, a normal rate of amortization; but beyond this, arbitrariness begins.

Therefore I suggest as a practical solution that we interpret every extraordinary debt redemption as a transfer of purchasing power from the taxpayer to the investor.³³ Since repayments of investments are not considered personal incomes, no double counting occurs. We do not need to deduct the amounts from government revenue. An extreme example may illustrate this situation. Let total private income be 90. A business tax is raised for an extraordinary debt redemption amounting to 10. Then national income should be calculated as 90 private incomes plus 10 business taxes equals 90 consumers' goods and investment plus 10 additional investment (reinvested debt amortization). In the case of extraordinary amortization the government transforms income into capital. It is a form of compulsory saving that affects consumed and income invested (or in certain situations, income not the size of the national income but its division into income hoarded).

There is a further group of expenditures that has one peculiarity in common with debt amortization, namely, that the receipt of the government payment does not create income in the hands of the recipient. I refer to government purchases of private property, e.g., of land; or indemnities paid to the owners on the condemnation or nationalization of private property. Subsidies to existing capital paid, for example, to enable the debtor to pay off his debts, also belong to this category.

How shall these transactions be treated in the calculation of the income sum? We may consider first purchases of land by the government. Assume that the income arising from production for the market is 50 and is spent entirely for consumers' goods. The government raises 10 from a business tax and uses it for the purchase of land. Then the income is 50 private incomes plus 10 tax receipts of the government equals 50 consumers' goods plus 10 investment goods, assuming that the former owner of the

³³ This whole problem may become of great importance if the reserve provisions of the Social Security Act of 1935 are maintained.

land uses the entire proceeds from the sale of his land for investment in a new factory, or whatever it may be. If the same amount were raised by the issue of a loan, financed from private saving, the calculation would be simpler; 50 private incomes equals 40 consumers' commodities (because less is consumed now that more is saved) plus 10 investment by the former owner of the property.

Thus we need not modify the formula of our income sum calculations (cf. Section III, 2 above) because of these items. When we include, as suggested, taxes that are not already included in the private income sum, but exclude receipts from borrowing financed by personal savings, then no omission or duplication occurs under the conditions assumed in our example.³⁴

6 GOVERNMENT EXPENDITURES IN THE 'VALUE ADDED' AND 'SOCIAL HEAP' APPROACH

Our conclusion is that if the whole government revenue is added to the income sum, we must deduct from it government expenditures for cost services and transfer expenditures. The main difficulties are, first, to determine 'cost services', second, to segregate that part of interest payments which represents transfer expenditures. But we cannot avoid these difficulties by starting from the 'value added' or the 'social heap' calculation. The

³⁴ One further type of expenditure, tax refunds, should be mentioned. They must be regarded in some cases as transfer expenditures; in some cases they are more nearly similar to debt redemption. Since an individual who receives such refunds does not declare them as income, they will not be included in the estimate of personal incomes. Hence they do not need to be deducted as transfer expenditures from government revenue.

The case is different, however, if a corporation receives such refunds. Here again two possibilities must be distinguished. If the corporation was certain that the taxes would be refunded, then the transaction is similar to a loan to the government while the tax question is pending and its later redemption. If the corporation did not expect the refund and regarded the tax payment either as a cost element or as a curtailment of its profit, then the refund is similar to windfall revenue. The amount will appear as profit or will enable the corporation to make greater disbursements for wages or for other purposes. In this instance the receipts will be transformed into personal or corporate income like business subsidies and must be deducted with the other transfer expenditures from government revenue.

Since these distinctions could not be made statistically, all tax refunds were regarded as transfer expenditures in the statistical estimates given below (cf. Table 1).

former requires that we add to the value added by all kinds of business and private services the value added by government.

When measuring the value added by business we come up against the problem of how to treat taxes. Does government participate in the value added as do workers, capitalists and entrepreneurs? Or are business taxes to be understood as cost payments similar to the payments for raw materials or fuel which must be deducted from the gross value to calculate the value added? Several writers assume that the taxes paid by business are equal to the amount spent by the government for the 'cost services' of the goods produced for the market.³⁵ But we have no right to make this assumption. The amount of cost services may be larger or smaller than business taxes; under modern conditions all non-income taxes are larger than the amount spent on cost services. In any event, the value added method does not avoid the difficulty of measuring government cost services encountered in the 'income sum' approach.

Further difficulties are involved in measuring the value added by government service. Dr. Kuznets includes³⁶ compensation of government employees and interest payments. He does not distinguish between interest payments for productive and consumptive purposes. Our reasons for including only part of the interest payments also hold true for the value added approach.

The 'social heap' approach also involves corresponding problems as far as the public sector is concerned. This method requires the evaluation of the government services that must be added to the goods produced for market at their final stage—when bought by consumers or invested in additional equipment. Two problems arise: First, what are government services at the final stage? Here again we meet the problem of the type of service that we called 'cost services', which are means of production either for the exchange economy or for the government. Second, how shall government services be evaluated? There is no other possibility than to evaluate them in terms of costs. But here again the prob-

³⁵ If it happened by chance that income taxes were equal to the whole amount spent by the Federal and local governments for 'consumptive' and 'political' services and all the non-income tax revenues were equal to 'cost services', then it would be justifiable to neglect the non-income tax revenues in the calculation of national income.

³⁶ *National Income, 1929-1932.*

lem arises whether costs include the debt service. Thus the same difficulties arise whichever of the three methods of calculation we apply in measuring national income.

IV Public Borrowing in National Income

If public borrowing is financed by saving, then the government funds are derived from private incomes already included in national income. If such funds are spent for 'transfer' expenditures and if the incomes of the recipients are included in the calculation (as we suggested), then transfer expenditures must be deducted in order to avoid double counting. We must make a minus entry under government income.

But is not the situation different when public borrowing is met by credit expansion? J. M. Clark says: "When credit institutions lend to the government funds to prosecute war, by expanding the total volume of credit, they give the government command over part of the social income which has not previously appeared in the incomes of individuals and did not come out of taxes of any kind. This affords another reason for supposing that the true social income may have been somewhat larger during the period of credit expansion than the reported figures show."³⁷ According to this opinion we ought to add the amounts procured by expansionary borrowing to the sum of private incomes, just as we suggested the addition of non-income taxes as government income. This point is of great importance for the calculation of national income not only during the War but also during the depression.

We should distinguish two kinds of expansionary borrowing: 'inflationary' borrowing causing an increase in prices—and 'additional' borrowing causing an increase in production. The first is typical of war financing, if we assume that expansionary borrowing occurs in a period of full employment; the latter is common in financing depression deficits when idle plants, unemployment and credit reserves exist. In practice most 'inflationary' borrowing also stimulates production to a certain extent; and

³⁷ *The Costs of the World War*, p. 128.

'additional' borrowing causes some increase in prices. The prevailing tendency, however, is different in the two.

From the viewpoint of national income an inflationary rise in prices is not comparable with a rise due to shifting of taxes. If the general price level rises because of the effect of cost taxes, the increment of prices does not result in a corresponding increase in the incomes of the agents of production. In 'inflationary' borrowing the government can dispose of an amount that did not appear *previously*, as Dr. Clark correctly says, in the incomes of individuals. It does appear in the incomes of individuals, however, *simultaneously* with government spending. Here the increment of prices is not appropriated by the government as taxes but causes in the same period either (nominally) increased disbursements of wages, etc., or higher (nominal) profits. The nominal national income, therefore, is increased first by the new incomes of the government employees, second by the incomes derived from the inflationary increase in prices. The 'real' national income, calculated by correcting the nominal income by means of a price index, will represent, therefore, the incomes received as compensation for the goods produced for the market as well as the incomes received as compensation for government services. The application of the price index involves a difficulty because the costs of government services will not increase exactly in the same proportion as the costs (or prices) of the goods produced for the market.

'Additional' borrowing is not different from 'inflationary' borrowing as far as the nominal income calculation is concerned. When, for instance, people engaged on public works spend their incomes, which are derived from expansionary borrowing—these incomes are, of course, included in the income sum of individuals—demand for goods on the market increases. An increase in production, not an increase in prices, follows. But this means (exactly as in the case of inflation) a simultaneous increase in incomes derived from the market, be it an increase in wages or in profits. If we calculate, therefore, as national income the sum of all private incomes derived from the market and the income of all public employees, no further addition is needed. This income sum represents the value of the goods produced for the market

plus the value of the government services financed by the 'additional' borrowing.

The case of relief expenditures financed, e.g., by 'additional' borrowing is disputable. Can we apply our general suggestion of deducting these expenditures to avoid double counting? If we wish to analyze the income 'disposable' we must include the incomes of those on relief as individual incomes. Because these incomes are received at the cost of no one else—at least as far as direct costs are concerned—they represent a net addition to the national income disposable by individuals. But they do not represent a compensation for production or for services rendered. Therefore we need again a minus entry before we can express the national income as a whole.³⁸

If expansionary borrowing is used for financing subsidies to, or compensation for the taking over of, existing capital, the whole transaction may not affect national income. Let us assume that the French government issues loans of one billion francs to indemnify the owners of nationalized armament industries. The amount required may be advanced by the banks without impairing the normal investment of current savings. Let us further assume that the former owners use the billion francs received for the immediate purchase of a billion of government loans. This enables the government to pay off the bank advances. The whole transaction does not affect the circuit of incomes; it affects only the ownership of capital and the types of assets that individuals possess. The case is similar to that of capital subsidies paid to home owners or farmers in the United States during the depression. Private debts were replaced by public debts but incomes were not affected, at least not directly.

The indemnity in the first example may contain an element of profit for the owner of the enterprise; the subsidy for the home owner or farmer may reduce the interest burden. These fractions of the capital transaction are similar to current business subsidies and therefore must be deducted, together with the

³⁸ In this respect the statement (G. Colm and F. Lehmann, 'Public Spending and Recovery in the United States', *Social Research*, May 1936, p. 136, footnote a) that relief income should be included in the national income total if it is financed by additional borrowing should be qualified. This statement is correct only with respect to the calculation of the income disposable by individuals.

other 'transfer' expenditures, in calculating the income produced.

From this analysis of the effects of borrowing it appears that we do not need to modify the formula for the national income calculation (Section III, 2). Public borrowing, whether it is financed by private savings, by inflation or by additional credit, and no matter whether it is used for 'exhaustive' expenditures, 'transfer' expenditures or capital subsidies does not affect the formula.

V The Estimate of the National Income Sum

This Section illustrates the methodological argument given above with some actual figures. The calculations are confined to those items which belong to the subject of this paper.³⁹ As a starting point I shall use Dr. Kuznets' estimates of national income for 1932. The only purpose of these calculations is to make the theoretical considerations clearer, and to examine the quantities involved, rather than to present any definite suggestions for a corrected estimate of national income. I choose 1932 because this is the latest year for which comprehensive statistics of state and local public finances have been published. The national income estimates refer to the calendar year, the budget figures to the fiscal year.

We shall discuss the various items as they are indicated in the formula in Section III, 2.

(1) To the sum of genuine individual incomes as calculated in the usual estimates we add incomes derived from transfer expenditures. I assume that incomes derived from business subsidies are already included in the sum of personal incomes, as profits, wages or interest. Likewise, interest paid for the Federal debt, which we considered a transfer item, is already included

³⁹ I neglect, for instance, institutional incomes. An income calculation that follows rather closely the suggestions made in this paper has been made by the German statistical office; cf. *Das deutsche Volkseinkommen vor und nach dem Kriege* (Einzelschriften zur Statistik des Deutschen Reichs, Nr. 24, Berlin, 1932). Colin Clark, *National Income and Outlay* (London: Macmillan, 1937) also adds, as we suggested, the non-income taxation and other revenue of the government to the individual and corporate incomes and excludes transfer incomes. He does not, however, deduct 'cost services' of the government.

with the other interest incomes in Dr. Kuznets' estimate. He also included veterans' pensions. Thus we have to add only relief expenditures. For relief income in 1932 the several estimates differ greatly. In calculating income disposable by individuals, personal income taxes and poll taxes are deducted. The amounts paid as inheritance taxes, which in other respects have an effect similar to income taxes, do not usually constitute an element of personal income. They will do so only if they are anticipated, as they sometimes are in England, by insurance premiums; or discharged by subsequent annuities paid out of the income of the heir, as in some Continental countries.

(2) I do not discuss here the problems involved in the calculation of 'business savings' or 'negative business savings', but use the figures published by Dr. Kuznets without taking account of the corrections that he has recently proposed.⁴⁰

(3) The figures for total government revenue include tax revenue as well as other types of current revenue.

(4) The greatest difficulties arise in classifying government expenditures in such a way that expenditures for 'cost services' can be kept separate. On the basis of the figures in Table I, a very rough estimate of this sort has been made, adding to each group of 'cost services', 'political services' and 'consumption services' a proportional share of the costs for general administration. The total amount spent for government services (excluding transfer expenditures, capital subsidies, expenditures for debt retirement and miscellaneous) of 8,898 million dollars can be classified tentatively as:

'Cost services'	\$3,182 million
Political services	1,755 million
Consumption services	3,961 million

(5) Since we included incomes derived from government transfer expenditures in the income disposable by individuals, we must deduct these amounts from the revenue of the government in order to avoid duplication. Among the transfer expenditures are included business subsidies. Deficits of public enterprises covered by the general budget are considered business subsidies. But as we saw above, we cannot consider all municipal services as

⁴⁰ Cf. Part Four.

public enterprises proper. Therefore we add a part of the costs for meeting their deficits to the expenditures of the government for consumption services.

TABLE 1
PUBLIC EXPENDITURES IN THE UNITED STATES, 1932
(millions of dollars)

	FEDERAL	STATE AND LOCAL	TOTAL
General administration ¹	511	674	1,185
Economic activities ² ('cost services')	567	2,191	2,758
Political services ³	809	712	1,521
Consumption services ⁴	50	3,384	3,434
Transfer expenditures ⁵	1,639	556	2,195
Capital subsidies ⁶	893	...	893
Debt retirement	413	492	905
Miscellaneous	274	161	435
Total	5,156	8,170	13,326

Source: For state and local expenditures the classification published by Paul Studenski in *Taxation and Public Policy* (R. R. Smith, 1936) has been used. The expenditures of states and local administrations are about one billion dollars smaller according to this source than according to the *Statistical Abstract*, 1935, p. 204, although the latter source excludes debt redemption, which is included in the estimate in Mr. Studenski's compilation.

¹ Including expenditures for the Treasury.

² Including part of state and local interest.

³ National defense and protection; justice; Department of Interior (part).

⁴ Education, culture, social welfare, public service enterprises (part of deficit), Department of Interior (part); state and local interest (part).

⁵ Veterans' pensions; agricultural marketing, tax refunding, postal deficiency; public service enterprises (part of deficit); Federal interest.

⁶ Federal Land Bank; farm credit; R.F.C.

A difficulty arises from the necessity of distinguishing between interest for productive and unproductive debts. A definite solution of the problem of services rendered by government assets and the debt service requires statistical material not yet available (cf. above). Therefore I propose a very crude preliminary solution. I suggest that the entire Federal debt for 1932 be considered unproductive, incurred either for war purposes or to meet a current deficit; and that interest for state and local debts be considered as paid for productive ⁴¹ investments, part of the sum

⁴¹ I must remind the reader here of the rather broad sense in which I am using

being added to the expenditures for 'cost services' for the market economy (e.g., debts contracted for road construction), and the remainder to the expenditures for 'consumption services'. Debt amortization has not been included in the amount of transfer expenditures to be deducted from the government gross income; it was assumed that since the receipts from this source are not included among private incomes no duplication exists.

In estimating national income for later depression years the question will have to be faced as to where the line ought to be drawn between straight relief on the one hand and work relief on the other. Construction of roads, dams, government buildings, etc., which represent useful work, should be considered as government services whether performed by regular departments or emergency agencies. Expenditures for work that is done merely to employ people (some of the former CWA projects may have belonged to this category) should be considered as relief, and therefore as transfer income, without any corresponding contribution to the 'social heap'.

Starting from Dr. Kuznets' figures for personal income ('income paid out' in his terminology) and negative business savings, we get the modifications for 1932 that are given in Table 2 (the figures in parentheses refer to the various links of the formula in Section III, 2).

The national income total of our calculation is about 5 billion higher than Dr. Kuznets' estimate, which we took as a point of departure. Let us summarize the main reasons for this difference. The only taxes included in Dr. Kuznets' figures are individual income taxes. We added the non-income taxes but deducted from them the 'cost services' rendered by the government because the taxes paid by business (or by any other taxpayer) for these means of production are cost payments and not expenditures of income. We deducted also transfer expenditures to avoid double counting. So the difference consists mainly of those non-income tax revenues that are used to meet expenditures for all purposes except for 'cost services' and 'transfer expenditures'. Here we may

the term 'productive' (cf. above). Mabel Newcomer uses the term (cf. 'The Nature of American Public Debt', *American Economic Review*, Supplement, Vol. XXVII, No. 1, March, 1937, p. 54) in a much narrower sense, identifying productive debts with self-liquidating debts.

summarize what we found concerning this item which constitutes the real difference between the method applied by Dr. Kuznets and the Department of Commerce on the one hand and the

TABLE 2
ADJUSTED ESTIMATE OF NATIONAL INCOME, 1932
(millions of dollars)

Personal income (income paid out) according to Kuznets	48,894	¹
Income from government relief	200	²
Total personal income (I)	49,094	
Personal income and poll taxes (II)	442	
A. Income disposable by individuals (I minus II)		48,652
Negative business savings according to Kuznets (III)	9,529	
Corporation tax (IV)	631	
B. Income distributed from negative savings (III plus IV)		10,160
Government revenue (V)	11,477	
Government expenditures for		
Cost services (VI)	3,182	
Transfer of income (VII)	2,195	5,377
C. Income disposable by government (V minus VI minus VII)		6,100
Total national income (A minus B plus C)		44,592
National income produced according to Kuznets		39,365

¹ Includes incomes from subsidies and veterans' pensions.

² Estimate.

method suggested in this paper on the other. If we intend to calculate national income merely in nominal terms, these types of government revenue ought to be included only if we assume that they result in a curtailment of nominal incomes, either by reducing profits or by being shifted backwards to wages. We found, however, that non-income taxes, if they are spent for government services, may result in increased prices. In that case it would not be necessary to add them in a nominal income calculation. If, however, we interpret the nominal amount of the national income as representing certain quantities of goods and services measured by their market or (in the case of government services) their cost price, viz., if we think or calculate in terms of *real* income, then we must add these revenues to individual corporate and institutional incomes. Nor is it necessary, if we are measuring *real* income, to inquire whether these taxes are shifted or not. Then we must follow the method as it has been illustrated in Table 2.

A further modification of the method used by Dr. Kuznets results from our determination of transfer expenditures. Dr. Kuznets included veterans' pensions but not the revenue drawn from the civil retirement funds, while we wish to exclude the former but include the latter as part of national income. He included all incomes received from government debt service, while we suggested that the interest on unproductive debt be treated as a transfer expenditure. These items explain the difference of about 5 billion dollars between the estimates reached by the two methods.

VI The Relationship between Public and Private Spheres in the Economy

The proper treatment of public expenditure and revenue is important not only as a means of measuring the national income total without omissions and duplications, but also as a means of measuring the share of public activity in national income. The latter requires a theoretical consideration of the relationship between the spheres of public and private activity in the economy. We must distinguish among various types of relation which enable us to use the concepts applied in the preceding sections, but this time from another viewpoint.

(1) Public enterprises belong to the exchange sector of the economy; in the main they follow the rules of the market although the management of public enterprises may differ in many respects from the management of private. They do not follow the profit motive alone but are often influenced also by social or political considerations. If they render services that would not be rendered by private enterprises or if they are managed more efficiently, then they enrich the quantity and variety of goods procurable on the market. If they are less efficient than private enterprise would be in the same field, they diminish the real national income. The income produced by public enterprises is measured best by the 'value added' in production in relation to total income produced.

(2) Public services require men, material and capital that, under conditions of full employment, would have been employed

by market enterprises. That is the reason why Professor Pigou calls the costs for these purposes 'exhaustive expenditures'. Since the value of these services cannot be gauged except by the costs appropriated for them, we measured it by the sum of wages and salaries paid to public employees, the material bought on the market from other enterprises and the interest paid on the debt incurred in the construction of the capital needed for these services. The total 'value' of these services is, therefore, equal to the 'value added' by government plus the material bought on the market from other enterprises⁴² for administrative use.

For a closer examination of these government services two further classifications are useful. First, a distinction must be drawn between investment in capital equipment and current expenditure. Appendix A gives an estimate according to which 2 per cent of the national income is invested in 'administrative capital' (especially in all kinds of public construction) in various countries. Since the entire share of private investment is usually estimated at between 12 and 15 per cent of the national income in these countries, the importance of this item relative to the entire addition to their material equipment becomes clearer. I have not found statistical data for a corresponding estimate for the United States.

A second classification of public services has already been used in our attempt to estimate the 'cost services' (cf. Table 1). Such a functional classification ought to distinguish between:

a) Consumption services that add to the individual comfort and standard of life of the citizens, as for instance, expenditures for education, for providing recreational facilities, or for social hygiene and welfare (estimated for 1932 as 3,961 million dollars).

b) Political services that are rendered for the political organization's own sake, for national prestige and power or for the protection of the social order (estimated for 1932 as 1,755 million dollars).

c) Cost services that provide means of production either to produce for the market or to carry on the public enterprise itself

⁴² We say 'other', not merely 'private' enterprises, because in some instances the administration may buy also from public enterprises (for instance, a municipality may buy current for street lighting from a publicly-owned power plant).

(for the discussion of this group cf. Section III above) (estimated for 1932 as 3,182 million dollars).⁴³

Such classifications would allow us to analyze the 'social heap' in greater detail. The 'social heap' indicates the purposes to which a nation devotes its entire economic activity. The following classification might be suggested:

A. Consumers' commodities and services (non-durable) provided according to:

- (a) market demand
- (b) political decision
 - (aa) for voluntary use (e.g., recreational facilities)
 - (bb) for compulsory use (e.g., elementary education)

B. Additions to material equipment:

- (a) investments in enterprises producing for the market
 - (aa) private enterprises
 - (bb) public enterprises
- (b) investment in administrative equipment (e.g., road construction)
- (c) investment in household equipment (e.g., houses, motor-cars, and other durable consumers' goods)
- (d) investments abroad

C. Political services (e.g., military services).

On the basis of such a classification it would be useful to divide total income produced into: (A) income consumed; (B) income invested; (C) income devoted to political purposes.

For 'consumption' services it is possible to estimate, at least crudely, the income groups to which the people who benefit from these services belong. Such a breakdown of expenditures, especially for public education, social welfare and public service enterprises would result in an improved statement of the real distribution of income.⁴⁴

⁴³ This classification necessarily entails a certain degree of arbitrariness. Education certainly raises individual standards and yet it also provides an important 'factor of production': skill of labor. Costs for providing camping grounds in forests certainly are to be regarded as additions to the personal comfort of the population, and yet they may be more important as a means of reducing the expenses of fighting forest fires, and therefore as a means of conserving national resources.

⁴⁴ Cf. H. Dalton, *Principles of Public Finance* (8th ed., London, 1934), Ch. XIX; U. Hicks, 'Some Effects of Financial Policy on the Distribution of Income in Great Britain since the War', *International Labor Review*, November 1936; Colin Clark, *op. cit.*, pp. 146 ff.

(3) Transfer expenditures were distinguished from the costs of government services. We eliminated them to avoid double counting. But these items are also interesting in themselves. We wish to know what portion of national income is transferred from taxpayers to the recipients of transfer payments. Such a transfer does not diminish the total income at the disposal of individuals. But it does affect the distribution of income and thereby also the relation between income consumed and income invested. It will reduce the total income only if the transfer becomes so large that frictions occur that hamper the process of exchange.

(4) The depression experience brought two classes of government activity into the foreground. Government services or relief payments financed by 'additional borrowing' neither 'exhaust' nor 'transfer' but create incomes. If this income creation is not balanced by an offsetting deflationary process the secondary and tertiary effects of this spending result in an addition to national income even larger than the money actually spent. This is a net addition to national income not only for the time being but also permanently, since the later interest payments for the increment of debt do not diminish the later national income but merely transfer a portion of it from the taxpayers to the recipients of such interest payments.

(5) A second category of depression expenditures mentioned above are subsidies to existing capital. They do not enter the income circuit. They result merely in the replacement of private by government debts. The government disburses \$1,000 to an over-indebted farmer or home owner who uses the money to pay off his mortgage to, let us say, an insurance corporation. If the insurance corporation then invests the money in a government security of \$1,000, no addition has been made either to national income or to capital equipment directly; a private loan has been replaced by a public loan.

Summarizing, we may say that the government may (1) participate in production for the market, or (2) divert labor, materials or capital from production for the market for the purpose of rendering public services, or (3) transfer incomes, or (4) create incomes, or (5) transform private loans into public loans. The economic impact in each of these cases of government activity is so different that any attempt to measure the relation between

public activity and national income, or between public activity and total production for the market, by any single percentage figure has no scientific value. For instance, the statement that an amount equal to a quarter or a half ⁴⁵ of national income flows through public hands does not mean anything unless attention is paid to these various types of relation between public activity and national income.

Again we may try to make some estimates to illustrate these five types of relationship between public and private activity in the national income total. Here I choose first a pre-depression year, 1929, because I wish to add some international comparisons for which depression figures are not yet available in the classification needed for this purpose (cf. Appendix A). For expenditures typical of the depression, we must use, of course, more recent figures.

(1) There are, as far as I know, no statistics of the 'value added' by public enterprises in the United States. We can only guess, on the basis of statistics for public service enterprises and the Post Office, that the value added by public enterprises certainly did not exceed one billion dollars or 1 per cent of national income in 1929. The corresponding percentage has been estimated for Germany at 9 per cent for the same year.⁴⁶

(2) The costs of all government services in the United States in 1929 can be estimated at 9.7 billion dollars or 11.7 per cent of national income. In this figure are included:

Compensation to government employees	\$5.0 billion
Interest on state and local debts ⁴⁷	0.7 billion
Purchase of material	4.0 billion ⁴⁸

⁴⁵ E. Wagemann, then president of the Statistisches Reichsamt, wrote in an official publication in 1930 (*Finanzen und Steuern im In- und Ausland; ein statistisches Handbuch*, Berlin 1930): "The structural development in Germany has reached the point where the public economy controls more than one-half of the social product." This statement referred to public expenditure and revenue only, not to the indirect regulation of prices, wages, etc; but the transactions to which Dr. Wagemann referred included indiscriminately expenditures for government services, income transfers and costs of public enterprises.

⁴⁶ In Germany the railways, most public utilities and some mining and industrial corporations were government-owned at that date.

⁴⁷ The reason why only state and local debts are considered here has already been explained in Section V.

⁴⁸ This is a very vague guess, reached indirectly by deducting from total expenditure all the other items.

Appendix A shows that expenditures of this kind do not vary from country to country so much as do other types of expenditure. This table differs from our calculation for the United States in that the debt service for the other countries is not divided into interest for war debts, interest for productive debts and debt redemption.

(3) We estimate the transfer expenditures in the United States for 1929 at 1.5 billion dollars, including veterans' pensions (0.5), relief, subsidies, and deficits of public enterprises (0.2) and Federal interest payments (0.7). This sum is 1.8 per cent of national income, a percentage strikingly low in comparison with the percentage of income transferred by European governments.

In 1929, 1.8 per cent of national income was collected by taxes for debt redemption, which we interpreted above as a kind of compulsory saving.

(4) In a study on 'Public Spending and Recovery in the United States'⁴⁹ an attempt has been made to estimate the amount of income created through Federal spending, 1933-35. The amount was estimated to be 7,270 million for the period July 1933 through December 1935—5.6 per cent of the national income paid out during this period.⁵⁰ If the secondary effects of this public spending are included, the income created by the Federal government is between 10.8 and 13.2 per cent⁵¹ of the national income of this period. These are expenditures which involved neither a direct diversion of funds from private use nor a transfer of income; they belong to a special category of income creation.

(5) The Treasury spent about 2 billion dollars in the same depression period for subsidies to existing capital as described above. To this figure should be added some 4 billion dollars paid out by Federal agencies and financed by loans guaranteed by the Federal government.

These 6 billion dollars cannot be related in any way to national income, for they are neither derived from income nor did they enter the flow of income directly. They represent a trans-

⁴⁹ G. Colm and F. Lehmann in *Social Research* (May 1936).

⁵⁰ On the basis of the monthly figures of national income compiled by the Cleveland Trust Company.

⁵¹ The two figures result from two methods of calculating the secondary effects applied in the article cited above.

formation of private into public obligation, partly only temporary, because the process of repayment of some of these loans started very soon. There is no point in expressing this item as a percentage of national income. To illustrate the quantity involved, these 6 billion dollars may be compared with total long term private debts—78 billion dollars in 1933;⁵² moreover, approximately one-sixth of the total home mortgage loans came into the hands of the Federal government.⁵³

Summarizing, we may measure the relation between government transactions and national income by the following percentages:

Production for the market by public enterprises	less than 1%
Exhaustive expenditures (1929)	11.7%
Transfer expenditures (1929)	1.8%
Compulsory saving (1929)	1.8%
Subsidies to existing capital (about 6 billion dollars, 1933-35)	
Income creation, including secondary effects (1933-35)	10.8-13.2%

For specific purposes still further classifications may be required. If the government uses public purchases as a means of influencing private business (for instance through specific code requirements), it is interesting to know how strong the position of all government agencies, public administration as well as public enterprises, is in its effect on the market. Total purchases by Federal, state and local administrative agencies and enterprises probably amounted to 10 billion marks or 13 per cent of national income in Germany in 1929. A corresponding figure for the United States is not available, as far as I know. It may have been between 4 and 4.5 billion dollars, about 5 per cent of national income.

Another subject, a more detailed analysis of which would be very interesting, is the relation of government transactions to the process of capital formation and capital investment. The use of tax surpluses for debt redemption was mentioned as an example of compulsory capital formation. Investments in administrative equipment (roads, administrative buildings, etc.) provide an ex-

⁵² L. Kuvin, *Private Long-Term Debt and Interest in the United States* (National Industrial Conference Board, 1936).

⁵³ A. Braunthal, 'Residential Building in the United States and Great Britain, *Social Research*, IV, 1 (February 1937), p. 58.

ample of government influence upon capital investment. But also in important instances the government merely modifies the flow of capital that has been formed and invested privately; e.g., if the government borrows from and lends to private individuals, as in the case of an instalment plan for electric refrigeration or for housing construction.

These few examples show that the really interesting problems require a more detailed analysis of special groups of government activities. But to measure the quantities involved it is necessary to have total national income computed on a comparable basis in such a way that it can be used to express the relative importance of these activities. With this object in view two improvements should first be accomplished: the improvement of national income calculations so that periods and countries may be compared; and the improvement of statistics of such elements in national income as government expenditures and revenues, so that recent figures would become available in a classification relevant to economic analysis.

Appendix A

GOVERNMENT EXPENDITURES (FEDERAL, STATE AND LOCAL),
INCLUDING SOCIAL SECURITY INSURANCE

ECONOMIC DIVISION	PERCENTAGE OF NATIONAL INCOME			
	U. S. A. 1929	UNITED		GERMANY 1928-29
		KINGDOM 1928-29	FRANCE 1928	
Government services				
Salaries and wages	6.0	6.0	6.5	7.5
Purchases	4.8	6.7	6.0	7.8
Investments (included in government services)	...	2.4	1.4	2.2
War pensions, relief, social insurance payments	.8	3.6	2.7	4.4
Subsidies to business and associations	...	.4	2.6 ¹	.6
Debt service, including debt reduction	3.5	10.8	8.6	1.6
Reparation payments	...	...	...	2.9
Money investments	...	0.4	...	2.4
Miscellaneous	.6	...	.0	.2
 Total	 15.7	 27.9	 26.4	 27.3

This compilation is based for the United States upon the estimate given in the text, for the other countries, upon official German sources. It must be noted that in Germany and England economic conditions were depressed during 1928-29.

¹ Including subsidies for reconstruction.

Appendix B

GOVERNMENT EXPENDITURES (FEDERAL, STATE AND LOCAL),
INCLUDING SOCIAL SECURITY INSURANCE BUT EXCLUDING WAR
LIQUIDATION, INTEREST ON THE PUBLIC DEBT, AND COLONIAL
SERVICE

FUNCTIONAL DIVISION	PERCENTAGE OF NATIONAL INCOME				
	UNITED				
	U. S. A. 1926-27	KINGDOM 1928-29	FRANCE 1928	GERMANY 1928-29	ITALY 1928
General administration	1.8	2.0	3.1	4.5	7.0
Protection	.9	3.1	3.8	1.2	5.1
Education	2.7	2.6	1.9	4.2	2.7
Social service	1.2	6.4	1.3	11.0	4.0
Housing	...	2.7	.0	2.0	.1
Industry and commerce	.2	.4	.1	.7	.3
Highways	2.0	2.0	2.4	2.2	3.1
Total	8.8	19.2	12.6	25.8	22.3

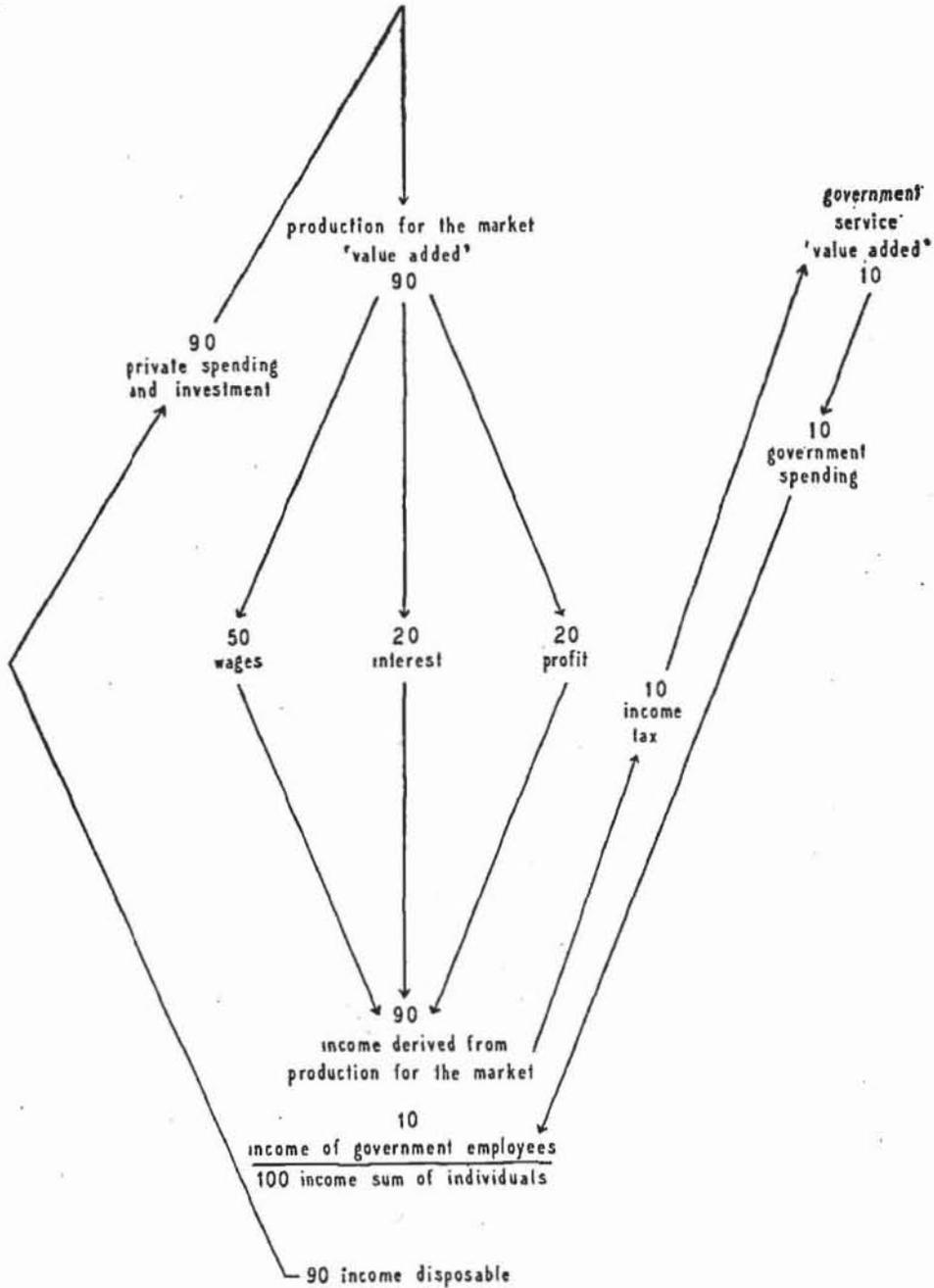
Expenditures for war liquidation, interest on the public debt, and for colonial purposes are excluded; these items depend so much on the particular political and historical situation of the countries in question that they do not seem to be comparable.

This compilation is based on official German sources. It must be noted that in Germany and England economic conditions were depressed during 1928-29.

Appendix C

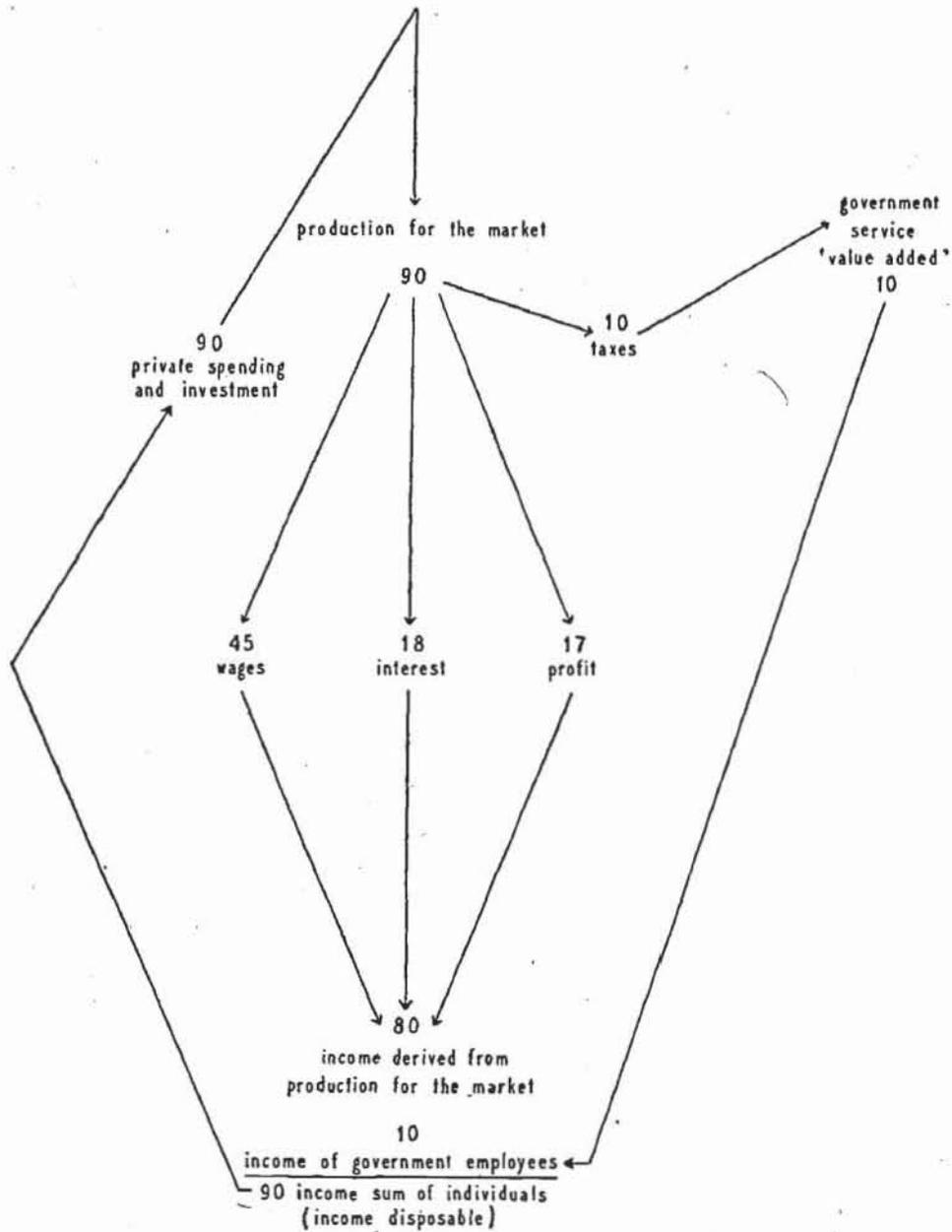
DIAGRAMS ILLUSTRATING VARIOUS THEORETICAL POINTS

1. Government Service Financed by Income Tax
(government employees tax exempt)



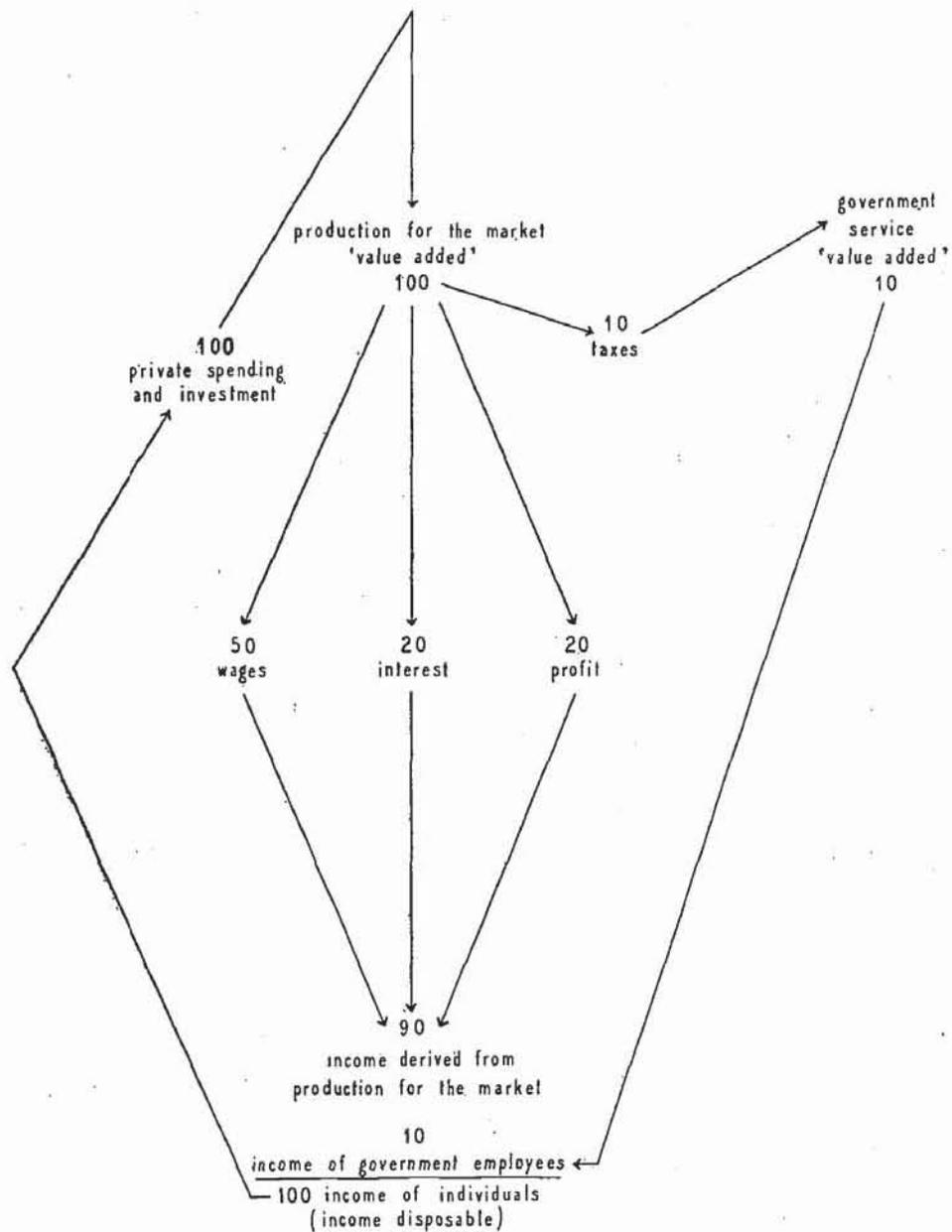
national income: 90 income disposable by individuals + 10
income disposable by the government = 100

2. Government Service Financed by a Business Tax, not Shifted



national income: 90 income disposable by individuals + 10
 income disposable by the government = 100

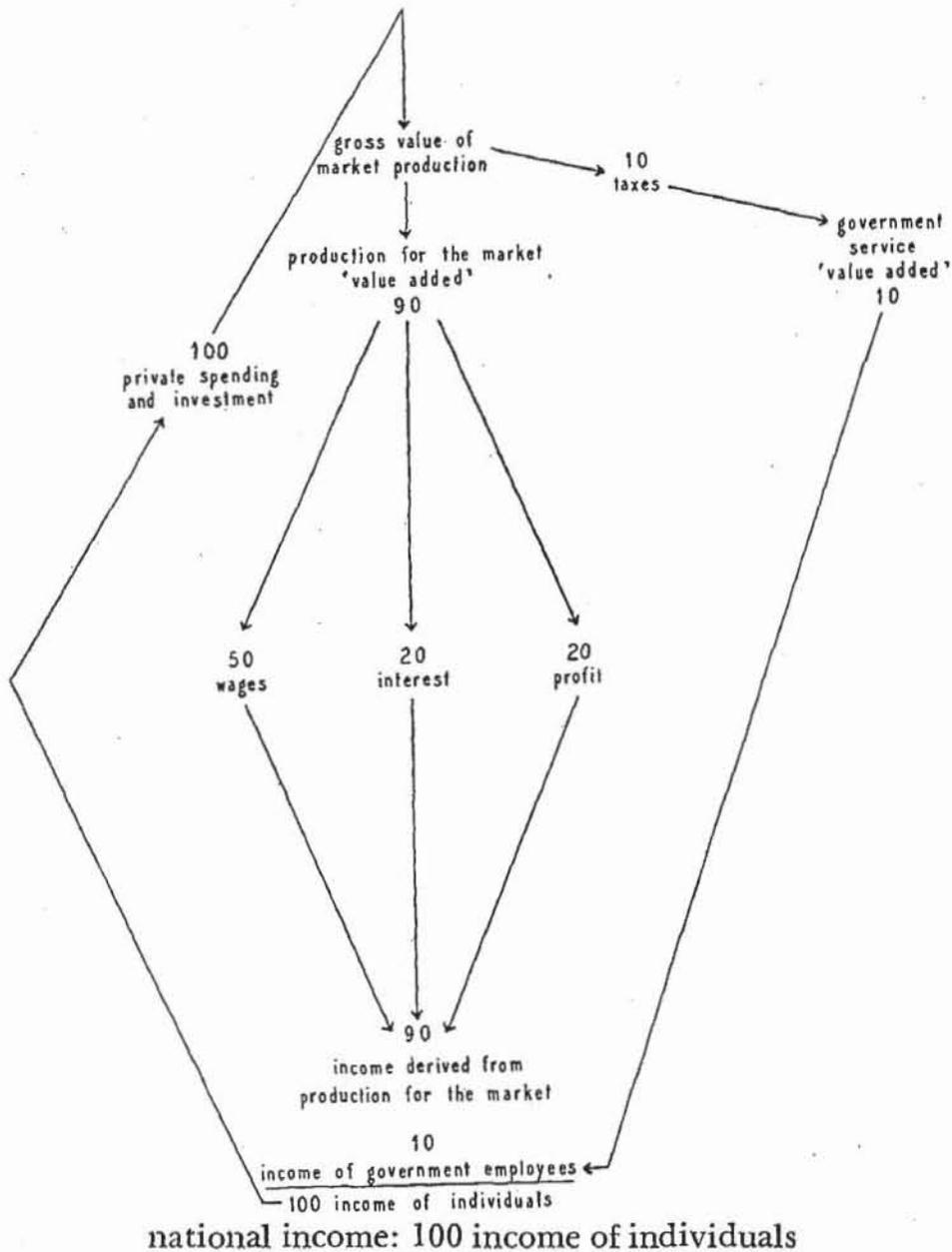
3. Government Service Financed by a Business Tax, Shifted



nominal national income: 100 income disposable by individuals + 10 income disposable by the government = 110
 real national income: 100

4. Government Service ('Cost Service')
 Financed by a Business Tax

The tax is regarded as a cost payment, deducted from gross value of production like cost payments for material



Discussion

I J. M. CLARK

My own very limited contact with this problem was made in a way that may be somewhat typical. In attempting to measure the costs of the World War it became pertinent to guess at the effects of the War on the national income out of which these costs had to come. That purpose determined how I must treat income, without prejudice to other treatments that might be pertinent for other purposes. Income of soldiers was a part of the cost of the War, not a part of the income out of which that cost was defrayed. Moreover, for this purpose the important thing was not total income but changes in it. Almost any kind of a total estimate would serve the purpose if it were so broken down that one could find and eliminate those changes which were irrelevant for the purpose in hand. These included not only a great increase in incomes representing war expenditure, but also absolute and relative changes in the amounts of taxes which were, and those which were not, deducted before reporting private incomes. These produced distortions in the net change of total income reported for the War years; and the removal of the chief of these distortions was something that could be done regardless of one's ideas or of whether one had any ideas on the theoretical correctness of the total figure in which one was making adjustments. I suspect many persons may come to figures of national income with some such specific problem in view, and may need not so much an eternally correct total as a record of changes in the measurable parts, so broken down that the student is able to make his own adjustments.

Dr. Colm's concept of income includes a social dividend and private claims to parts of it. These claims may pass from hand to hand without any measurable increase in the social total; hence

there is duplication. Dr. Colm's method seems to be to include everything and then subtract duplications. Sometimes the same item is in effect included twice and then subtracted once. This may have a confusing effect on the student, and it might be worth considering the separate reporting of transfer items where practicable, without lumping them in the total and then subtracting them.

Some features of Dr. Colm's treatment puzzle me. He seems at points to imply that a correct reporting of national income hinges on: (a) determining just what public expenses are financed by just what revenues; (b) which taxes or loans act to raise prices and how much. If that is true, the problem seems hopeless. But I venture tentatively to doubt whether such tracings are necessary. They do not seem to appear in his own final illustrative table. If a tax or a loan raises prices, theoretically that should be automatically taken care of when we deflate money incomes by a price index (though of course our actual index number may or may not include the commodity whose price has been raised). And the net changes of different classes of income and outgo would seem to be sufficient, without earmarking.

To conclude: (1) Any social-dividend estimate runs into the dilemma of either setting a value on non-marketed services or omitting them where similar items are elsewhere included and thereby losing consistency and comparability. The result is a choice of evils at best. Where most of a given item (like services of government-owned property) is bound to be excluded in any case, there seems no real loss in excluding it all. (2) Such estimates should not be affected by any change in purely fiscal policy (such as the retirement or non-retirement of a public debt). (3) Estimates in different countries are not likely soon to be reduced to uniformity, but if their breakdowns are as complete as possible, students may be able to minimize (though probably not remove) the lack of comparability.

I feel that Dr. Colm has made a significant contribution, but do not feel competent to evaluate it point by point.

II SIMON KUZNETS

The comments submitted below fail in two respects to do justice to Dr. Colm's thoughtful paper. Some of them refer to points that are not cardinal to his argument and express disagreement in a manner, which, for the sake of clarity, perhaps exaggerates the magnitude of the issue. And they do not reveal the number of points in Dr. Colm's discussion that appear to me to be helpful guides in answering the numerous questions arising in the treatment of government income and expenditures in the measurement of national income.

1 THE MEASURABLE PART OF THE SOCIAL PRODUCT

Dr. Colm defines national income as the measurable part of the social product. And the social product is described as the result of work performed in accordance with the provisions laid down by the several institutions that co-exist in our economic system, to wit: (a) the exchange economy; (b) the economy of the household; (c) the sphere of the government.

If this formulation correctly expresses Dr. Colm's concept of national income, then doubts arise as to its serviceability as a tool of analysis. The first doubt refers to the adjective 'measurable', whose precise meaning is unfortunately not given in the paper. It surely cannot be interpreted as meaning 'being susceptible to an acceptable measurement with the available data'; for this would leave the magnitude of national income subject to vagaries in the supply of data and the varying limits of statistical imagination and/or caution. Does it then mean 'theoretically susceptible to measurement'? But then surely the limited effect of the adjective is barely sufficient for a working definition of national income. For, theoretically, all work performed, inclusive of one's efforts at a daily shave or at vocal accomplishments under a shower could be evaluated at the current market price, e.g., at those for barbers' services and for performances of fifth-rate singers.

But perhaps this second question is answered by Dr. Colm's definition of the social product, in accordance with which this concept includes only activity that is recognized as socially desired by the institutional mechanism of society—the market, the family

or the body public. I found it rather difficult to guide myself by this concept. The orders of the head of the family "decided what was play, and what, work"; "decisions made by the politically responsible organs of the society" stamp an activity as socially desired; and last, with reference to the market mechanism, "if someone receives compensation for any activity . . . the market has stamped his activity as socially desired, even if not socially desirable". This appears to provide no selective criterion at all, for it would obviously admit into social product the result of activities such as murder (paid for by some anxious purchaser), any and all activities that are expected as a matter of course in family life, and all activities undertaken by the state.

It seems to me that Dr. Colm himself, in subsequent discussion, employs a concept of national income much more rigorously defined than is suggested by its description as the measurable part of the social product. How otherwise can he distinguish between transfer expenditures and productive expenditures? Or rule out of account such items as payments of interest on war debts?

In stressing this point, I hope I do not overemphasize the importance of a clear-cut definition of national income in discussions that deal with the controversial problems of exclusion and inclusion. True, there is a fairly close consensus of opinion among the students in the field with reference to many broad groups of activities whose results would be included by anyone under national income; and to that extent a rigorously defined concept is not needed. But it is at the borderlines that such a concept is indispensable; and it so happens that the whole field of government activity within the economic system lies largely across one of the borderlines. Vagueness in the concept of national income is, therefore, likely to lead either to ambiguity or to arbitrariness in the analysis of the problems arising in the treatment of government revenues and expenditures.

2 DISPOSABLE INCOME

Dr. Colm distinguishes between income acquired and income disposable, the latter being defined as "income after deduction of those parts which are voluntarily or compulsorily transferred from the individuals who acquired them to other individuals, the government or private institutions". And "the sum of income ac-

quired and income disposable must be identical, the difference being in the manner of distribution" (Section I, 4 (a)).

This distinction calls for two comments. First, there is a cardinal difference between income acquired and disposable income, in that the former is uniquely determined and the latter is not. We observe income acquired at the line that divides the economic system from the mass of households and consumers who are the individual recipients of income shares distributed by the former. So far as this dividing line is clear, there is only one distribution of income acquired, i.e., only one configuration of the apportionment of income paid out among the various individuals who receive it. But of disposable income there are as many distributions as there are links that one wishes to distinguish in the circulation of incomes once acquired. We may be interested in the distribution of disposable income after the individuals have indulged their propensity to speculation by buying and selling on the stock market and on markets for other assets (and thus consider capital gains); or after the individuals have paid their taxes, a link that appears most important to Dr. Colm; or after the expenditures on food have been made. All these variants of the definition of disposable income are, abstractly, of equal validity; and as Dr. Colm points out, the sum of income they will yield will be identical, the variation being confined to the distribution among individual recipients. It appears obvious that the only way to set up a definite concept of disposable income is to specify the stage in the circulation of income to which it refers; and that only on condition that one of these stages is, for some reason, declared to be basic, can there be a *single basic* concept of disposable income.

This being the case, the second comment follows in the nature of a query. Why is it important to create the concept of disposable income for the treatment of government revenues and expenditures? Why do we not employ this concept in discussing the treatment of revenues and expenditures of the steel industry or the steam railroads in the measurement of national income? Obviously, the concept could be used in these examples just as easily as in the case of government; only here it would mean income disposable after payments by individuals for the products of the steel industry or after payment by them to railroads for services

in transporting the payors or the products that these payors consume. The superficial differences between these cases and the government do not stand up under scrutiny. The legal coercive power of the government is, from the standpoint of economic analysis, not much different from the coercive power wielded by a public utility or any other monopolist supplying essential products: in either case the individual can abstain from payment, but at the cost of dispensing with an essential service. In common with many other industries the government supplies the demand of both business firms and ultimate consumers. What is then the distinctive feature of government activity that necessitates the use of the income disposable concept, whereas it is not employed in the treatment of other monopolistic industries? This question seems to me to require further elucidation.

3 FUNCTIONS OF GOVERNMENT AND THE CLASSIFICATION OF EXPENDITURES

In treating the problems raised by Dr. Colm the crucial point appears to me to lie in the evaluation of government activity from the standpoint of productivity and the direction of imputation. If we can answer two questions: (a) Are government services productive? (b) What part of them is a net service to individuals and what part is a service to business establishments?—then we are in a position to solve most of the problems ranging about the treatment, first, of government expenditures, and second, of revenues, in the measurement of national income.¹

As to the generally productive character of government expenditures, my disagreement with Dr. Colm is perhaps minor. I am still not convinced that interest on war debts should be treated as unproductive, while interest on debt contracted by the government in order to finance the rearmament program would presumably be treated as productive (or, for that matter, interest on bonds paid by the armament-producing firms who supply the government). The argument that the services of the proceeds of the war debts "were rendered in the past and belong to a different accounting period" is not effective, since the same argu-

¹ It seems to me that were Dr. Colm to begin his analysis with this evaluation of government functions, and then proceed to treat government revenues, the concept of disposable income could be dispensed with.

ment may be applied to interest payments on all long term capital investments. The services (or disservices) were in the past, but their effects continue into the present—a statement which in the case of war debts has unfortunately been demonstrated all too convincingly during the last decade and a half. However, this problem of productivity of government expenditures is part of the broad problem of productivity as criterion of the elements entering into national income; and it would be out of place here to discuss it further, except to refer back to the comments made above under 1 in connection with Dr. Colm's definition of national income.

We turn now to the second question, viz., to what extent may one distinguish between government services rendered the business system and those rendered individuals *qua* individuals. On this point I must confess myself more pessimistic than Dr. Colm, in that I consider such a distinction much more tenuous and remote than Dr. Colm conceives it to be. True, where government engages in purely commodity producing or handling functions (such as those of railroad transportation or of communication) it is easily possible to distinguish between services rendered business establishments and those rendered individuals. But 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. These functions have such a broad reference to the needs of society at large that it is difficult to say that they serve business or that they serve individuals as members of the community. If a definite answer is provided it usually results from the application of some clear-cut position in social philosophy but one that does not necessarily have general validity. Thus some interpreters will contend that the government is a monopolist primarily engaged in supplying services to the business system of the nation and using its coercive power to supply these services at as low cost as possible. Others will contend that the government's main function is to regulate the business system so as to make it compatible with the basic needs and demands of the individual members of the nation. In either case, the only statement that can be safely made is this: so far as the function of any government is to preserve the smooth and successful oper-

ation of the existing social system, and so far as the business system is an integral part of the social system, the activity of the government will be an indissoluble amalgam of efforts to preserve the business system (which may be classified as service to it) and to modify it for the benefit of non-business groups (which may be classified as service to individuals).

The indissoluble character of this amalgam is clearly shown by the fact that any specific government activity may be so interpreted as to put it either in the one class or in the other. Public education or relief, which appears to be so clearly in the nature of direct service to individuals, may be and has been interpreted as essentially a service to the business system, a necessary cost in permitting the business system to operate efficiently and without disturbance. Tariffs, which appear to be so directly in the nature of service to business, may and have been interpreted, as a service rendered the broad masses of wage earners in this country. A scrutiny of Dr. Colm's own classification of government expenditures raises several doubts. In what sense are the economic activities, which appear to be dominated by road and street construction, any more in the nature of direct services to business than the administrative expenditures, the political, or for that matter, the consumptive? Roads are used by ultimate consumers *qua* individuals, and a great deal of the consumption expenditures may be interpreted as an essential cost of the business system in this country.

In short, no classification of government activities and expenditures by business or ultimate destination can properly be made.² But there are two other classifications of government expenditures that appear both possible and necessary in the measurement of national income. First, there is the distinction between expenditures on commodities consumed, and on services of people or of property. As in all other industries, the amount of net income originating in government is exclusive of the volume of commodities consumed in the process of production. Second, there is the distinction between expenditures representing services and those representing transfers of property rights. In the current work on national income we have attempted to make

² This fusion of interests is perhaps a more essential distinctive characteristic of government activity than is the coercive character of its power.

both distinctions: the first by including under income originating in government only payments for personal services or interest payments on debt (to individuals); the second by adjusting income paid out by government for government net savings or losses. The latter item was computed roughly by comparing the net change in the tangible assets owned by the government with the net change in its outstanding debt.

4 ALTERNATIVE TREATMENTS OF GOVERNMENT REVENUE AND EXPENDITURES

The discussion above suggests the impossibility of classifying government activities and hence expenditures between those characterized as service to business and those characterized as service to individuals. It is accordingly impossible to say that the payments to government made by business firms are larger or smaller than the cost of services rendered by the government to these firms, the positive and negative residue being accountable as the net balance in favor of the individual payors of government revenues. (Note a similar treatment of a public utility monopolist who charges discriminatory rates to business units and to ultimate consumers.) Consequently, the treatment in national income measurement of the activity of the government in collecting its revenue must depend upon assumptions, necessarily arbitrary in character, as to what these payments to government represent.

As we vary these assumptions, we obtain different formulae for the treatment of government revenues and expenditures in national income. The simplest alternatives are as follows:

a) On the assumption that all government activities are services to the business system proper:

National income = (sum of individual incomes derived from private production minus individual income taxes) + (undistributed savings of business firms, after payment of business taxes) + (all government expenditures minus expenditures on commodities consumed plus net savings of government).

b) On the assumption that all government activities are services to individuals:

National income = (sum of individual incomes derived from private production) + (taxes paid by business firms) + (undis-

tributed savings of business firms, after payment of business taxes) + (government expenditure item adjusted as under *a*).

c) On the assumption that the payments made to government by business firms represent approximately the value of government services to business; and that payments made to government by individuals represent approximately the value of government services to individuals:

National income = (sum of individual incomes derived from private production) + (undistributed savings of business firms, after payment of business taxes) + (government expenditures adjusted as under *a*).

The most recent computations by the National Bureau of Economic Research follow formula (*c*), as being the simplest and most plausible solution of the problem. It is arbitrary, but the arbitrariness results from the nature of the problem. And the assumption that the government's distribution of charges reflects the value of 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. The latter assumption of a complete separation between the place where government payments arise and the place where government benefits fall appears to me to reduce greatly the significance of the conundrums that are so often found in the discussion of these problems in national income and taxation literature. These conundrums usually ask what happens to the calculation of national income when, e.g., the government decides to replace an individual income tax by a business tax, the tacit assumption being that national income should not be affected by the government's action. But if this action represents, as it often does, a recognition of the change in value of government services to the business system as over against its value to individuals, the national income total *should* be affected. If this implication is true, it bears directly upon Dr. Colm's use of this conundrum argument in his report.

To conclude, the incidence of government activity as between the business system and the individuals comprising the nation cannot be distinguished, except with the assistance of a definite position in social philosophy. If the latter is not acceptable, only an arbitrary solution of the question whether to deduct or not to

deduct business or individual income taxes is possible. The arbitrariness of the solution adopted by the National Bureau in its treatment of the problem is recognized. But it seems a more practicable solution than Dr. Colm's; and I am not convinced that on theoretical grounds it is inferior to Dr. Colm's procedure which appears to rely too much upon the possibility of actually establishing the effective incidence of government activities.

III MABEL NEWCOMER

I have been very much impressed with Dr. Colm's analysis of public revenue and expenditures in national income. The importance of this problem increases each year as the public share in national income increases. Many of those who have been working in the field of public finance have been aware of the error involved in estimating the tax burden as a percentage of income when a large part of the taxes in question has been deducted, as a business cost, before the figure of national income has been reached. Dr. Colm has gone much farther than this, however. He not only points to the problem. He offers a solution for it.

I foresee increasing difficulties, as the public sector of our economy grows, with the attempt to find a common measure for goods and services produced both for this public economy and for a private market economy. For the time being, however, the two are sufficiently interrelated that Dr. Colm's procedure seems to be amply justified. I find myself in complete agreement with the principal factors of his formula. I am not sure that I follow him, however, in all details. In this connection I should like to discuss two points briefly.

The second step in the formula is the deduction of "taxes paid from personal incomes". In discussing these, Dr. Colm mentions personal income taxes and poll taxes. I am wondering if he would include real estate taxes on owned homes in this category, also. It seems to me that these should likewise be deducted in order to determine "income disposable by individuals". The exact amount of such taxes is not readily estimated, but they probably came to at least twice the sum of personal income and poll

taxes deducted in 1932. The arguments for including them are that they are not a business cost, and so far as they are ability taxes they seem to be strictly comparable to the personal income taxes. So far as they are benefit taxes it may be contended that the home owner is buying services in much the same fashion as he might buy them from private owners, but in any event these services have been included, I believe, elsewhere in the formula.

It can, of course, be argued that the tax paid by the home owner is comparable to the rent paid by the tenant—a payment for the use of the house itself. Since no valuation has been placed on the income of services from these homes in the estimate of national income (they have been excluded as not computable) there would be no double counting from this point of view. Since, however, taxes on homes presumably do not measure with any exactness the value of the services of such homes to home owners, this tends to confuse issues. Compensating errors of this kind may result in a final estimate not far from the truth; and if both the annual value of homes to their owners and that part of the property taxes falling on home owners are too uncertain to be estimated, it may be wisest to attempt neither. In view of the importance of real estate taxes in our system, however, I should like some discussion of this problem.

The second point I should like to consider deals with governmental expenditures—specifically, debt redemption. Dr. Colm classifies extraordinary debt redemption as a transfer expenditure and deducts it from government revenues before these are added to national income. With this I agree. If I understand Dr. Colm's procedure correctly, however, he is including in national income the regular amortization of productive debts as government saving. With this, too, I should agree if depreciation has been deducted elsewhere, but I am not sure that it has been. And in any event, with the present status of government accounting, it might be simpler to assume that debt amortization equals depreciation than to attempt to ascertain the amount of depreciation in question.

I realize that in the time and space available it has been impossible for Dr. Colm to cover all the points involved in this problem in detail. He has given far more thought to this problem

than I have and he probably has answers for both the questions I have raised. I only hope that he will later develop this whole problem at greater length.

IV GERHARD COLM

I am grateful to have the opportunity of discussing the interesting comments of Roy Blough,¹ J. M. Clark, Simon Kuznets and Mabel Newcomer on my paper. On some points I am convinced that the critics are right and I must correct my statements; on some I feel that a misunderstanding is due to not expressing myself clearly enough—and in this respect I am especially glad that I can clarify my position; on a few points I feel that I ought to defend my thesis by proposing additional arguments.

(1) Dr. Kuznets criticizes the statistical definition of national income—the measurable part of the social product—as vague. He is entirely right. But I think that the definition must be as vague as the concept itself. Who can offer a clear-cut principle according to which it can be decided whether the work of housewives or the imputed rent value of houses owned by the occupant ought to be included in or excluded from national income calculations? I see no logical reason why these elements of the social product should be omitted, except a practical regard for the task and the limits of the statistics of national income. The term 'measurable' does not accurately describe the criterion I had in mind, and needs further definition. If the probable mistake resulting from the inclusion of an element is greater than the probable mistake resulting from the omission, then I regard this specific element of the social product as 'unmeasurable'. If the error resulting from an omission is greater than the error that may be caused through the inclusion, then it is 'measurable' and must be included. Do we shift hereby the test to the technical question of whether or not certain statistics are available? Not quite. Whether a smaller or larger mistake originates from the omission of an item in the national income computation depends not only upon the statistical material but also upon the question that

¹ Professor Blough's comments refer to both Dr. Colm's and Dr. Shoup's papers; see Part Six, Discussion I.

is to be answered by the estimates. We may wish to compare the national income of two countries. In one all household work may have been shifted to corporations (apartment houses with service, restaurants, laundries, etc.) and most of the married women may have gainful occupations. In the other country all the household work is done by the married women who have no other occupation. Any comparison that neglects the service of the housewives in the latter country would give a distorted picture—the error resulting from an omission of this element in the social product would certainly be greater than that resulting from including imputed values for these services. If, however, we are to compare countries with similar conditions in this respect or if we compare the national income of the same country over a period during which no substantial changes occurred in this respect, it would be wrong to include this item which can be measured only with such difficulties.

Thus J. M. Clark contends in his discussion that for measuring the war costs, the task for which he was using the national income estimates, he did not need to include imputed values for the soldiers' services. The omission of this item may be misleading, however, if countries with armies of a different size and organization are to be compared. Many 'definitions' of national income are merely attempts to rationalize in a general way a choice that was justified only for a specific task and based upon specific statistical material that was available. The definition I have suggested is vague; but it is not supposed to offer a general criterion, for the line of demarcation must be determined with a view to the specific question under consideration and to the statistical material available.

Dr. Kuznets asks how such a definition enables us to distinguish between transfer expenditures and productive expenditures of the government, and to say that the first category does not, while the latter does, constitute an element in national income. The answer is that national income was defined as the measurable part of the *social product*. Every item in national income must correspond to an element of the social product, i.e., the work done by and at the disposal of the social group. The relief recipient is paid not for a contribution to the social product but because he is unable to earn his living by such a contribution.

Therefore, his income is regarded as an income derived from transfer expenditures of the government, while a judge or a teacher receives his salary for a service that is regarded as necessary by those members of the legislative bodies who have to decide about the public services for which funds are to be appropriated.

And how about the murderer who may receive a payment for his 'service'? Dr. Kuznets asks how we decide according to our definition whether we regard this payment as compensation for a contribution to the 'social product'. I suggested that in the whole sphere of the exchange economy the market decides what services are regarded as productive. If in a society murder is regarded as a service supplied and demanded like the service of the butcher or barber, then I do not see how the statistician may exclude these services because he does not share the moral habits of the country with which he is dealing. I do not believe that in our civilization murder usually belongs to the services acknowledged by the market, although it is quite debatable whether the handling of bootleg liquor did not belong to the social product in the period of prohibition. I did not intend to rule out productivity as a criterion of national income by the definition that I suggested. In this respect I do not agree with Dr. Copeland who tries to avoid reference to the contribution that enables a person to claim an income.² In view of his approach, Dr. Kuznets' question seems to be justified, namely, how transfer payments can be determined and eliminated from the income computation. The definition that refers to the social product entails the acceptance of productivity as a criterion and meets thereby the question of evaluation. I suggested applying the evaluations of the society with which the statistician is dealing and not the evaluations of the statistician. The evaluations of a social group are expressed in various institutions—the family, the market, the political system. Here the people determine what they regard as socially desired; the statistician may have quite other ideas concerning what is socially desirable.

(2) Dr. Kuznets attacks the distinction between income acquired and income disposable. Evidently I did not succeed in making clear what is meant by this distinction. Let us assume that a person A earns \$10,000 per year, and a person B is unemployed

² See Part One, Sec. I.

and receives \$500 as relief. The relief payment is financed by an income tax which A has to pay. A and B together have an income of \$10,000. How is this income distributed? If the distribution is measured in terms of income acquired, A has \$10,000 and B has nothing. This is a true picture if the calculation is designed to describe the distribution of *earning power* in a society. The result is worthless, however, if the study is made to draw conclusions concerning the distribution of *purchasing power*. Then the income must be measured in the hands of those who can finally dispose of a share in the social product, who influence the demand for and thereby the production of goods and services. A transfers \$500 as a tax to the government. But the legislative authorities decide to pass on the money as relief to the beneficiary who finally can dispose of it. Thus the distribution of the income disposable is calculated in this way: A's income acquired \$10,000 — tax \$500 = \$9,500; government tax revenues \$500 — transfer expenditures \$500 = 0; B's relief income \$500. A disposes of \$9,500 for consumption or savings, B can buy \$500 worth of goods and his demand schedule exerts an influence upon the market and production to this extent. If the government uses the money not for relief but for employing a teacher, then the purchasing power is not passed on by transfer. The government disposes of a part of the social product, diverting productive factors for purposes determined by the legislative bodies. In this case A can dispose of \$9,500; the government of \$500 and the teacher of \$500, the combined income being \$10,500. In voluntary transfers the benefactor decides to dispose of his income himself by making a contribution to charity. This is, however, not a final disposition of a share of the social product. The benefactor waives this right to the beneficiary whose demand decides finally what goods and services will be bought with the money.

The difficulty that puzzles Dr. Kuznets may be phrased as follows: if I buy food I also 'transfer' my money to somebody else, for instance to the baker. Why not deduct also food expenditures from the income acquired? The baker's income is not derived from the customer's income by a transfer, but it is acquired through the sale of his product. The customer disposes of a part of his income by buying bread. The baker acquires income by selling bread. Both have an independent original income acquired.

The deduction would distort the estimates because something would be deducted and nothing added—the baker's income being an element in the national income anyway. And the total of income acquired and income disposable must always be identical (except for certain international transactions).³

Dr. Kuznets asks further why we deduct taxes from the income acquired and not the burden imposed upon individuals by a monopolistic price policy, for instance, of railways or public utilities. This case seems to be more like excise taxes than income taxes. Excise taxes were not deducted from the nominal incomes but were eliminated by applying a price index in calculating the *real* income. The same reduction of real individual incomes results automatically from a monopolistic price policy. The difference is, however, that the revenue from excise taxes must be added as government revenue to the individual and corporate incomes, while the incomes derived from a monopolistic price policy already appear in the individual or corporate incomes, for instance as dividends or as undistributed profits of the monopolistic corporations. Thus the 'transfer' of incomes through a monopolistic price policy is already expressed in the usual calculation of real income and does not need any special operation, as is required in taxation.

(3) While Dr. Kuznets discussed the concept of income disposable in general, Professors Blough and Newcomer dealt with the question of what taxes are already included in the income acquired and must be deducted to calculate the personal income disposable. I suggested that personal income and poll taxes are already included in personal incomes. Professor Blough added inheritance, estate and gift taxes, motor vehicle license taxes and taxes on intangible property. Professor Newcomer held that real estate taxes on owned houses are also paid from personal incomes,

³ This equation will be maintained only if a minus entry is made when property is transformed into income, as happens, for instance, in realized capital gains. Dr. Kuznets alludes to speculative transactions on the stock exchange as transfers of income. Here we have either the disposition of income (if current savings are invested in new issues the proceeds of which are used to expand productive facilities) or a transformation of property of one form into another form, or a transformation of property into income, but no transfers of income in the sense I used this term. Capital gains are not a genuine element of national income; but the reasons for their exclusion are different from those proposed for transfer incomes.

an opinion to which Professor Blough consented under certain conditions.

I agree that taxes on intangible personal property, gift taxes and motor vehicle license taxes,⁴ and also some further fees, are paid directly from personal incomes and are already included in the sum of personal incomes. I said in my paper that death taxes belong to this category only if they are anticipated by insurance premiums or discharged by subsequent annuities paid out of the income of the heir (cf. Sec. V, (1)). In the other cases I held that the inheritance and estate taxes reduce the income of the heir (by an amount equal to the yield of the capital that was to be paid as tax). Therefore, I meant that death taxes should not be treated in the same manner as income taxes and I added them to the government revenue without deducting them from the individual incomes in calculating the income disposable. This was wrong. Collecting death taxes to meet current government expenditures presupposes that assets of the deceased's property must be sold. Then somebody else must acquire them and will draw the yield from them in the future. Therefore a fraction of the savings cannot be used for additional investments but are needed to meet the property loss due to the tax. If the tax yield is used to finance current expenditures (and not to create government capital), dissaving results. If the revenue from these taxes is regarded as government income, then a minus item of the same amount, representing a property loss of individuals, must be inserted into the calculation. If, therefore, all government revenue is regarded as a basis for calculating income disposable by government (Sec. V, (5)), death taxes must be deducted from the income disposable by individuals exactly as has been done in the case of income and poll taxes. Thus I conclude that Professor Blough's objection to this point is correct. Death taxes must be treated like personal income taxes, but for entirely different reasons.

In dealing with real estate taxes on owned houses, two cases must be distinguished, as Professor Blough emphasized: first, the rental values of owned houses are added to national income (English type); second, the services of such property are not re-

⁴ Except, of course, taxes attributable to the use of the motor car for business purposes.

garded as an income element (as in the United States). In the first case the owner of a house, in which he himself resides, declares as income in addition to other income the fictitious rental value of his property, but deducts interest and taxes, together with other expenditures he has to make for his property. Here the real estate tax is like a business tax not included in the personal income sum—it must be added as government income, as Professor Blough correctly stated. But what is to be done when, as in the United States, no imputed values for owned houses are included in personal incomes? In the United States the income tax laws permit the deduction of interest and taxes for real estate without requiring the declaration of a fictitious income derived from this property.⁵ If and as far as the personal incomes are computed on the basis of the net income of the income tax statistics, the real estate taxes are not included in the personal incomes and must be added as a separate item. But even assuming that these taxes would not be deducted in computing net incomes, the result would be the same for an estimate of the *real* national income. We must assume that real estate taxes on residential buildings will be shifted to rents in the long run. Rents certainly constitute an element in the cost of living index that is used to deflate nominal incomes. This index is applied to incomes of people who live in owned or rented houses equally. Therefore, even if these taxes were paid out of personal net incomes, their increase or decrease would be eliminated by the real income calculations. If these taxes, following the suggestions of Professors Blough and Newcomer, were regarded as already included in personal incomes, total national income would be underestimated. Increases in these taxes would reduce the real national income without a compensating item.

(4) I suggested calculating the income disposable by government through deducting from the total government revenue: (a) government transfer expenditures; (b) expenditures for the 'cost services' of the government. This income disposable by government, then, is added to the income disposable by individuals, corporations, and private institutions.

Dr. Kuznets is not quite convinced that the interest on war

⁵ Thus the American income tax laws grants a certain tax privilege to the home owner that is not open to the person living in a rented house.

debts (as on all other deficit debts) should be treated as unproductive, i.e., as transfer expenditures. He does not recognize the difference between war debts and debts for long term investments. I meant that war services belonged to another period, while long term investments (like roads), for which money was likewise spent in an earlier period, still render service in the period during which interest has to be paid on the debts incurred for their construction.

Professor Newcomer suggested that the regular amortization for such productive debts should be regarded as 'compulsory savings' only if depreciation of government investments is deducted. This is correct and I agree with her also in her contention that the simplest procedure would be to regard the regular amortization as compensating the depreciation charge because the methods applied in public bookkeeping do not allow a reasonable direct estimate of the public depreciation.

Dr. Kuznets has strong objections to deducting expenditures for 'cost services' in estimating the income disposable by the government. He denies that the 'cost services' of the government can be separated statistically from the other public expenditures. Two main points of my paper were to explain that the non-income tax revenue of the government ought to be added to national income and the expenditures for 'cost services' ought to be deducted. Do we avoid, by following Dr. Kuznets' formula, both difficulties at the same time, if we assume that the two are equal? Then we would neither add nor deduct these items (cf. footnote 35). This would be indeed much simpler than the complicated additions and subtractions that I suggested.

If Dr. Kuznets holds that no classification of the 'indissoluble amalgam' of government services is possible, then he violates this principle himself. He classifies government expenditures implicitly himself by assuming that the non-income tax revenue represents approximately the value of government services to business. By the principle of the 'indissoluble amalgam' a serious question is raised which in the last analysis would lead to the conclusion that no adequate treatment of the government sphere in national income is possible. Quantification usually requires a certain arbitrariness in forcing phenomena of life into a rigid classification. The test again is whether the distortions resulting

from an omission of this whole field in the national income estimate are greater than the mistakes possibly resulting from its inclusion. If we include it, the best possible classification is required.

I agree with Dr. Kuznets that the classification I suggested entails a substantial degree of arbitrariness (cf. footnote 43). I am afraid, however, that Dr. Kuznets' assumption is much more arbitrary and involves possibly greater errors. Dr. Kuznets contends that business taxes may tend to become approximately equal to the benefits rendered to business by the government. This argument refers to business taxes. But how about excise taxes, such as taxes on liquor and tobacco, which also belong to the non-income tax revenues? The taxes paid from incomes in the United States are not more than about three billion dollars, less than 20 per cent of all government expenditures. If Dr. Kuznets' formula is correct, then this 20 per cent must include all expenditures for 'political services' (which are made for the sake of the nation or the community as such) and 'consumption services' (which are rendered for the sake of the individual citizens), while all other expenditures are regarded as 'cost services' which are rendered for business and absorbed by business, as are other cost factors. The taxes paid from incomes that amount to less than 25 per cent of all tax revenue in the United States amount to more than 40 per cent in Great Britain. Is the share of political and consumptive services so much greater there than in America? This comparison proves to my mind that countries may have fundamentally different tax structures despite similar expenditures. Consequently it is not valid to draw conclusions concerning the structure of expenditures from the tax structure. The mistakes that result from our direct classification of expenditures may amount to hundreds of millions—the mistakes resulting from Dr. Kuznets' indirect classification probably run into billions; and statisticians must choose the lesser evil.