10

TREATMENT OF GOVERNMENT ECONOMIC ACTIVITY IN THE NATIONAL ACCOUNTS

Ingvar Ohlsson

I. INTRODUCTION

1. *The problem*

To some extent the problem of treating government activity in the national accounts is a problem of seeking conformity between our simple analytical tools and the complexity of reality. There is, unfortunately, lack of conformity between economic reality as we assume it to be for statistical purposes and what it really is. Is it not a characteristic feature in our everyday statistical experience that reality does not, and never can, suit our statistical definitions and economic models? Enterprises have a mixed production and cannot be classified into a fixed branch of industry in a desired scheme. Entrepreneurs' incomes cannot be clearly divided between wages, interests and profits because they are mixed in reality.

How much easier it would be to prepare national accounts if every service and every commodity were exchanged in the market. In that case there would be bilateral transactions to record in our accounts. There would always be a financial transaction in the opposite direction of a real transaction. This would give a monetary value, a market price, that could be used to represent the real transaction, that is if one could also believe in the theoretical usefulness of the market price valuation.

The bilateral nature of most transactions has, I think, been of great importance for the development of national income statistics and national accounting. But for activities of the government and some other economic units this easily available basis of valuation is lacking. During the last two decades, however, national income statisticians have been trying to impute a bilateral character to such activities in order to have a more uniform basis for treating these types of economic activity in national income statistics.

This paper is concerned with the problem of incorporating government activity in the national accounts primarily as a

problem of valuation. The solution – if there is one – is considered to be closely related to the purpose for which the accounts are to be used.

In the literature about this problem there seem to be two approaches implied. One is the approach from a national point of view, where real transactions are considered as elements in a general economic process for the nation as a whole. This approach raises such problems as finding and measuring the intermediate product of government activity.

The other approach starts from the profit and loss accounting of enterprises and other economic entities. In this case the financial transactions become important. This may lead to the treatment, for instance, of taxes and fees as payments for services rendered by government and of allowances for bad debts as a negative item (on the expenditure side) when summing up national product.

The problem of accounting for government activity is the same type of problem as arises in the treatment of banking, insurance and other activities, where the financing of the activity is achieved by means unrelated to the market price principle.

2. *Factors behind the accounting design*

In principle there are many ways of making out national accounts. The practical design depends on several different factors, some of the more important of which will be considered briefly here.

The design of the national accounts depends, among other things, on the institutional circumstances in the country for which the accounts are being constructed. It is probable that a statistical survey of the economy of an industrialized country (with various forms of enterprise) would be quite different from that of a country where agriculture is the predominant source of livelihood.

The status of the available primary statistics is another factor of importance for the design of national accounts, although it is possible to influence this factor in the long run. The difficulties encountered by those doing the practical work of obtaining statistics for the various items of the national accounts are evident.

However, the design of the national accounts depends principally on the purpose for which they are to be used. There can

be, and already have been, a number of different fields of application. The accounts are used in the analysis of economic fluctuations, for constructing the national budget, and for the analysis of economic results ('welfare' and 'productivity'). In the latter case they are usually transformed ('consolidated') into national income statistics.

It is possible to think of several other factors of importance for the form of the national accounts; factors the content of which is more or less difficult to determine. Such factors include tradition, accepted international practice and connection with everyday terminology.

When the place of government activity in the national accounts is dealt with in this paper, the above-mentioned factors are handled under the following assumptions. The status of the primary statistics is for the most part left entirely out of the picture. It is hardly of interest at a conference of the International Association for Research in Income and Wealth to allow the form of Swedish primary statistics, for instance, to influence the treatment of a more general problem. The international character of this conference is also the reason why the problem of fitting government activity into the national accounts is not taken up from the any special point of view connected with administration or state finances. Thus, the form of the budget in one country or another will not explicitly affect the evaluation of various national accounting designs.

Regarding the institutional circumstances which may be considered as shaping the economic environment for the problem at hand, it is assumed that besides the government activity there is a comprehensive market economy in the sense that a number of independent economically active private subjects take part in the economic life of the country. They plan production and investments, and choose their consumption relatively freely. The subjects meet in the markets where goods and services are offered for sale. In other words it is an economy typical of a number of countries, including those of Western Europe, America, and others. Of course, it would be interesting to take up the problem from an Eastern European point of view too.

In what follows, the purpose for which the accounts are to be used will become rather important. It will be one of the keys for evaluating the various accounting designs. The significance of the purpose for the design of the national accounts and the

national income statistics has often been stressed by writers in this field.[1] But in my opinion, this point of view has in practice been given too little attention.

II. SOME CONCEPTS USED

1. *Sectors and accounts*

The smallest unit in the national accounts to which economic transactions are attributed is here called, in traditional style, *the account*. Accounts may be gathered together into groups in various ways. It is possible in principle to obtain a pyramid of different groups and combinations of account groups. We shall follow fairly generally accepted practice and use the word *sector* as a composite term for a particular group of accounts. These two types of subdivisions, into sectors and into accounts within each sector, could be used in different ways.

It is rather usual to speak of institutional and functional groupings. In a division by institutional sectors, similar types of entities in the society are dealt with in each sector, each entity organizing economic operations – often with the help of certain capital. Institutional grouping, thus, is made according to the special features of organization. Examples of institutional grouping are the household sector, the joint stock companies' sector and the government agencies' sector.

On the other hand, functional grouping refers mainly to the different stages of the economic process: production, consumption, etc.

It is possible to think of other types of grouping; for example, geographic grouping, such as might apply to the different parts of a country or to a combination of countries, such as the Scandinavian group.

Institutional and functional groupings will be used in what

[1] 'But it cannot be too strongly emphasized that the choice must rest upon the analytic purpose in view rather than any clear-cut distinction between right and wrong', J. Lindeman, Income Measurement as Affected by Government Operations, *Studies in Income and Wealth*, Vol. II, National Bureau of Economic Research, 1938, p. 14. 'In other words there is no necessarily correct form for either the balance sheet or the income statement, although there may be incorrect forms. A form is correct if it shows clearly and accurately what it is intended to show. A so-called general-purpose accounting statement may well be a compromise among many purposes and therefore inadequate for any of them. Presentation of complete detail may obscure relationships as well as add to the information that is given. Like all tools, accounting statements should be designed to fit the needs for which they are intended.' R. Ruggles, *An Introduction to National Income and National Income Analysis*, New York, 1949, p. 40.

follows. In principle, the sector division can be made institutional and the account division functional or vice versa. There have often been attempts to make both the sector division and the account division within the sectors functional by attributing certain functions to the institutionally fixed entities:[1] the firms become just producing units, households and government authorities just consuming units. In my opinion, this is not a very desirable tendency, especially when the government activity with all its different functions plays an important part in the national economy.

2. *Transactions*

The concept of transactions and the way in which transactions are classified will be more or less in accordance with the treatment in Richard Stone's works, and will be particularly close to Norwegian practice.[2]

An economic transaction can be characterized in many different ways. The following three are important for the subsequent treatment. Transactions may be:

1. Real or financial;
2. Actual or imputed;
3. Unilateral or bilateral.

1. When a service is performed or a good changes hands, this is regarded as a real transaction. When cash or financial instruments of some sort change hands, this may be regarded as a financial transaction. *Example:* The delivery of shoes from a seller to a buyer is a real transaction. The payment for the shoes is a financial transaction.

2. An economic transaction between two entities which is in fact accomplished may be classified as an actual transaction. An imputed transaction, on the other hand, is a hypothetical, but not actual transaction between two economic entities, or a transaction between two hypothetical parts of the same entity. *Example:* A sale from a farmer to a wholesaler is an actual transaction. A registered 'sale' from the farmer-producer to the farmer-consumer is an imputed transaction.

[1] See, for example, R. Stone, *Definition and Measurement of the National Income and Related Totals*. Studies and Reports on Statistical Methods, No. 7, United Nations, Geneva, 1947, and O. Aukrust, On the Theory of Social Accounting, *The Review of Economic Studies*, Vol. XVI (3), No. 41.

[2] See preceeding note.

3. Transactions often occur as exchanges. For instance, a good may be exchanged for another good or for money. A transaction of this sort which has a direct equivalent in the other direction is called a bilateral transaction, whereas a transaction which has no direct equivalent in the other direction is unilateral.

Looking back on the development of national accounting, the bilateralness of many transactions seems to have been of great importance for the design of national accounts, and perhaps even more important for the design of national income statistics. Real transactions have been valued with the aid of corresponding financial transactions. Thus it is always assumed that when an exchange occurs, the price governing the exchange is an accurate measure of the value of the product, except for the total aggregates qualified as 'at factor cost' or 'at market price'.[1]

As an aid to treating the problems, we shall use a system of national accounts, which (as in Stone's system) is restricted to entries of financial transactions.[2] Valuation according to the market price is supposed to be used for sectors[3] other than the government sector proper. The problem of whether the various items are to be entered as 'accruable' or 'cash' is not directly treated in the system, which may thus apply to either of these two aspects.

The sectors are regarded as being institutionally determined and each sector comprises four accounts which are functionally determined. These four accounts are: production, income redis-

[1] For the above reason it has been largely immaterial (a) whether a system of national accounts is used which only registers financial transactions ('flows of payments'), or (b) whether 'fourfold' book-keeping is employed, in accordance with Norwegian tradition. (See Aukrust, *op. cit.* The bilateral transaction is entered twice in the accounts in each of its aspects – real and financial. In other words the double-entry book-keeping is applied on each sector, and not only on the whole nation.) In the former case, the financial transactions can be used as representatives of the real, since there is equivalence of value. In the latter case, there is also supposed to be equivalence between real and financial transactions where are therefore entered in the accounts as having the same value. This has somewhat limited the utility of fourfold book-keeping in the national accounts. So far as I know, it has not yet been used either for any other valuation of real transactions than the valuation with the help of financial transactions, or in order to introduce the difference between 'accruable' entries and 'cash' entries.

[2] The entries are actual and, possibly, imputed financial transactions. The possible imputed transactions in this case usually have the justification for their existence in corresponding real transactions.

[3] Thus the problem of valuation for these sectors is not dealt with in this paper. Beside the government sector there are supposed to be at least two sectors: enterprises and households.

tribution, consumption and saving-investment. The economic process within each sector is reflected in this design of accounts. We begin with production, and the incomes which are generated are redistributed to the various sectors. The disposable income occurring in each sector is used for consumption and savings, and savings and borrowing are finally used for investments in different sorts of assets.

III. DEFINITION OF GOVERNMENT ACTIVITY

There are two institutional factors which are primary reasons for a special treatment of government activity.[1] In the first place the motives of government activity are in general different from those of private activity or, at any rate, are differently shaded. Government activity is motivated more by general economic and social policy than is the activity of private enterprise, where the profit motive has a more dominant place.

Secondly, government activity may be financed in a different way from that of private enterprise. The central government has the power to obtain income by taxation in order to meet government expenditure, without selling anything in the open market. This fact is important because a valuation norm of the bilateral type disappears for valuing real transactions in the national accounts. It is actually the methods of valuation of real transactions connected with the government sector which make the treatment of government activity in the national accounts an important problem. The problem of valuation will consequently constitute a large part of this paper.

Like so many other concepts used in practical statistics, the concept of government economic activity is to some extent imprecise. We shall not dwell, however, upon the definition of total government activity. That definition is principally connected with the first of the above reasons (the motives of the activity). Let us assume that we have in some way defined this total activity as, for instance, activity in which government entities of all sorts have direct power over planning and management of the activity.

However, the whole of this activity is not usually entered in

[1] Cf. G. C. Means, L. Currie and R. R. Nathan, Problems in Estimating National Income Arising from Production by Government, *Studies in Income and Wealth*, Vol. II, *op. cit.*, pp. 269.

the same sector in the actual national accounts. Some are classified as business activity and are specially dealt with in their own sector or lumped together with private activity in an enterprise sector. There is thus a boundary to be drawn between government activity which can be entered in the enterprise sector (in the 'market economy') and that which has to be specially dealt with and may be called general government activity. This demarcation depends partly on whether the activity is considered to be financed by tax revenue, or from the sale of goods or services.

In practice the boundary between the two types of government activity may be drawn with the help of several criteria, which in many cases cannot be used simultaneously. Some of the criteria are given below, a few being important, others less important.

(*a*) The first and main criterion is the profitability of an activity. According to this, government activity for which the income from sales normally covers the cost of production should be treated as business activity with market price valuation of production results. This is a general criterion usually applied in one form or another. Because of the possibility of considering unprofitable activity as 'subsidized' business activity, this criterion is not clear and sufficient.[1] There are other criteria which may be coupled with the given valuation norm behind this first criterion.

(*b*) In order that an activity shall be included in the market economy, a second criterion may 'stipulate' that the incomes must be relevant to the spending policy. The activity in question is to be an independently calculated activity, and must try to balance its income and spending. But if it is a different authority, such as parliament, which decides what is to be spent and determines incomes by means of fixed fees and the like, even an activity which is profitable may be included with some justification in general government activity.

(*c*) A government activity may have a direct equivalent within the private enterprise sector, that is, both may produce the same

[1] The losses on a government operation in the enterprise sector may be considered as equivalent to subsidies, so that market-pricing may be retained as a hypothesis. The possibility of using the concept of subsidies in this way as a bridge between the general government economy and the enterprise sector of the market economy makes it less easy to achieve clear distinctions. Problems dealing with indirect taxes and subsidies, and the interpretation of them, arise. However, these questions will not be taken up in this paper.

type of goods or services. This may be used to give a third criterion of whether a particular government activity should be entered in the enterprise sector, even if it does not normally run at a profit. As a typical example from Sweden, we can take the local government-operated tram and bus transport in Stockholm which has considerable yearly losses.

(*d*) A fourth criterion may be obtained as an answer to the question: Do the authorities consider the government activity as a business activity?

(*e*) Lastly, a fifth criterion is whether the government activity in question covers the use and administration of productive equipment in the form of real capital such as machines, plants and stocks. This would constitute a reason, from a book-keeping point of view, for including the activity in the enterprise sector. In other words, it should apply to activities for which it is natural to draw up a balance sheet.[1]

The choice of criterion depends on the purpose for which the national accounts are to be used. The second and fourth criteria are more suitable for analysis of changes, the third and fifth for analysis of results; as will appear below.

When talking of 'government activity' in what follows we mean, unless otherwise stated, general government activity.

IV. THE ANALYSIS OF RESULTS

1. *Some general remarks*

We will now concentrate on two purposes for which national accounts can be used. These are their use in the analysis of results and in the analysis of changes. The analysis of results is intended to answer the questions of 'how much' or 'what', and the analysis of changes the question of 'why'. The analysis of results is considered in this section, the analysis of changes in Section IV. In these two sections we deal with comparatively general economic transactions, such as 'direct transfers of income', etc. Some special transactions which are in practice dealt with in national book-keeping are considered in Section V.

The analysis of results is here taken to mean the analysis of the economic results (production, investment, consumption, distribution of productive resources, etc.) achieved in a particu-

[1] Cf. J. R. Hicks, *The Problem of Budgetary Reform*, Oxford, 1948.

lar country in a particular period.[1] Principally it refers to real transactions. It is usually carried out with the help of national aggregates, which are calculated at fixed prices. The main transaction sums which are used in the analysis of results are, of course, the national product and the national income.

National accounts might be said to have grown out of national income statistics. Thus, historically, the analysis of results is their most important purpose. As I see it, the design of national accounts has been too greatly influenced by the point of view that the organization of the accounts in order to be able to obtain national aggregates should be done in as neat a way as possible. This may result in balanced (net) transactions of less usefulness as a source of information than gross transactions which might otherwise be included in the accounts.

The analysis of results and its development hitherto may be looked at against a background of 'classical' economic theory. The 'price' is something absolutely essential for the use of this type of analysis; it is the prices which serve to evaluate the real transactions. When results are judged from the viewpoint of welfare or productivity, some sort of foundation in the preference maps of the individual and production substitution curves is desirable.

The problem of whether or not there is any sense in analysis of results – in its old form, at any rate – has been indirectly treated in the important discussion about the valuation of the national income which started with J. R. Hick's article[2] and of of which I. M. D. Little's book[3] is one of the latest developments. This discussion provides reasons for the utmost caution in the practical use of the usual aggregates of the national income statistics. Without doubt, there is sufficient justification for much scepticism about the possibilities of using national income statistics and national accounts as instruments for the analysis of economic results achieved by a country.

However, if we consider the large number of empirical investigations based on national income statistics, it is obvious that the use of national accounts for the analysis of results is, in spite of everything, still an important purpose. It is also possible

[1] Two important aspects of analysis of results are analysis of economic welfare and of productivity.

[2] J. R. Hicks, The Valuation of the Social Income, *Economica*, New Series, Vol. VII, 1940, No. 26, p. 105.

[3] I. M. D. Little, *A Critique of Welfare Economies*, 1950.

that, with the help of operational definitions, we may continue to use the old concepts even from a theoretical point of view. This may justify the use of national aggregates as aids for the analysis of results, even if it is not possible to reconcile their use with the classical theoretical models.

The details of the more theoretical discussion of the analysis of results may be disregarded here, however. We will instead concentrate on the problem of measuring (valuing) the real transactions connected with the government's activity.

Thus we take it for granted that the analysis of results is something which must be considered in any general discussion of the design of national accounts. People want to follow the course of real transactions through the production process. They want to make comparisons between different real transactions and between different periods and different geographical regions.[1]

2. *Government authorities as pure consumers*

The market price has usually been accepted as the general valuation norm; that is to say, the bilateral nature of transactions has been accepted, except when it comes to the concept of 'factor cost' in the national income statistics. So the attempts to fit in government activity may be said to have been a hunt for bilateralness, that is, a hunt for financial transactions which might be used for the valuation of a particular real transaction.[2] We will now consider the most important of these attempts.

A quite simple solution of the problem of valuation in the government sector has been to regard the government authorities only as consumers.[3] This approach has been used theoretically in the previously mentioned work by Stone, for instance, and in a way seems to be the assumption behind the treatment of government activity in the official calculations of the United States and some other countries.

Such an approach implies that the production account dis-

[1] Such comparisons can be found, e.g., in *Economic Survey for 1949* (ECE, Geneva), where the analysis of results has been carried to great lengths on a statistical foundation which is sometimes weak.

[2] In passing, it should be mentioned that the same problem occurs when an attempt is made to fit productive activity which is completely confined to the household sector – without any connection with the market – into the national income statistics or the national accounts.

[3] If the problem is considered theoretically from the viewpoint of the analysis of results, it would of course be very difficult to put the government authorities into the same category of consumers as the household. The whole of the theoretical apparatus, with its preference curves and everything connected with them, can hardly be used in a uniform manner for the government authorities.

appears from the government sector in the national accounts. The income redistribution account shows the net incomes available for purchases of goods and services from other sectors.

This method implies that the productive process registered in the accounts is concluded by the last exchange of goods and services in a market where there is pricing. The employees of the government become production factors who can be looked upon as producing units (a sort of enterprises) at the same time. As a consequence of this, they must be entered either in the enterprise sector or the household sector, and in both cases the wages must be registered in the production account as the financial side of a sale of services. The first alternative would be somewhat difficult to accept from a general practical point of view. The second would require, for consistency, that other labour power, such as is used in industry, for example, must be supposed to generate income in the household sector (production account).

Actually, this way of regarding the government authorities as pure consumers leads to a special definition of the economic process, statistically recorded by the national accounts. It implies, namely, basing the definition upon the occurrence of bilateral transactions.[1] If the principle that market prices are to be used for valuation of all real transactions is accepted, it seems necessary to treat the government authorities as consumers.[2]

Table 1 shows how the government sector might appear if the national accounts were made out with only consumption and not production within this sector. In this case, all real transactions would be entered in the consumption account only (through their financial equivalents). Consumption could be divided into 'durable' and 'non-durable' consumption goods, as in the household sector.

However, it is not always desirable to regard the government authorities as pure consumers. A great deal of the economic process, besides pure consumption, seems to go on in the government sector.

[1] Cf. A. C. Pigou. The national dividend 'is most conveniently taken to embrace only things purchased with money income, together with the services a man obtains from inhabiting a house owned by himself', *The Economics of Welfare*, London, 1924, p. viii.

[2] The definition of the household has the same consequence, since it means that work done by the housewife, for instance, is omitted from the calculations of national income.

TABLE 1

Government Sector
(Consumption Alternative)

PRODUCTION ACCOUNT

INCOME REDISTRIBUTION ACCOUNT

Direct transfers	Direct taxes
Subsidies	Other direct transfers
Disposable income	Indirect taxes

CONSUMPTION ACCOUNT

Purchases of durable goods	Disposable income
Purchases of non-durable goods and services	
Savings	

SAVINGS-INVESTMENTS ACCOUNT

Capital transfer for investment in governmental enterprises	Savings
	Borrowing
Lending	

3. *Government authorities partly as producers*

(*a*) *Cost valuation*

It is more usual – at least, in certain questions – to consider government activity as containing a productive activity too. All the volumes in the series *Studies in Income and Wealth*, where government activity has been dealt with in the calculation of the national income, bear witness to this,[1] as does the paper read by Simon Kuznets before the previous conference of the International Association for Research in Income and Wealth in Cambridge.[2] The common division of the national product into branches of industry ('value added') is further supporting evidence for this: government activity is also one branch of industry in that division.

[1] See, for instance, G. Colm, Public Revenue and Public Expenditure in National Income, Vol. I, 1937, p. 175; Means, Currie, Nathan, *op. cit.*, Vol. II; J. Lindeman, Vol. VI, 1944, p. 2; and G. Haberler and E. E. Hagen, Taxes, Government Expenditures, and National Income, Vol. VIII, 1946, p. 3.

[2] Government Product and National Income, *Income and Wealth Series I, op. cit.*

Instead of regarding the economic process as completed, by definition, when goods and services are no longer exchanged in the markets, we might base our attitude on the following definition of the productive unit, given by Richard Ruggles:

> The definitions of production and of the factors of production have laid the basis for defining a productive unit. Any individual, firm, or government agency that creates value by combining factors of production is considered to be a productive unit.[1]

Then the productive account of the government authorities becomes interesting too. Though what is to be entered in this account is more open to discussion.

If government activity is regarded partly as a productive activity, the hunt for the bilateral quality in transactions becomes historically more interesting.

Kuznets once considered the whole of government activity as an enterprise.[2] Government authorities provided certain services, and received income as payment for these services. In this approach, therefore, the government incomes are one side of a bilateral transaction, and the financial and real parts of the transaction are equivalent in value. This is really the only method in which business activity and government activity, looked at from the productive point of view, have received a uniform treatment. I do not intend to take it up for further discussion here. But there is the question of whether there is not more in the method than many people have been inclined to think, as far as concerns one special case. This is the case where the sum of the real transactions (the national product) is to be used as a measure of welfare. In this case, if anything, it is more the value of direct taxes than the factor cost value of the public consumption which the consumer could be imagined to consider in the evaluation on his preference map.[3] The relevance of taxes is, however, probably not enough to justify the use of the method.

However, the usual method of valuing the productive results of government activity has utilized the costs of production

[1] Ruggles, *op. cit.*, p. 11.

[2] See, for instance, *National Income and its Composition, 1919–1938*, New York, 1941.

[3] We must also remember that formerly theoretical financial works often were based on this type of hypothesis. See, for example, E. Lindahl, *Die Gerechtigkeit der Besteuerung*, Lund, 1919.

(factor cost) as an aid. A parallel with the prices in a market economy is sought by conceiving of the price (the value of the real transaction) as the sum of the cost elements. The idea behind this procedure seems to be that the values of the cost elements may usually be obtained from bilateral transactions in one market or the other (the labour market, etc.).

A cost valuation of government activity is made more difficult, of course, by the lack of some cost elements comparable with those in business activity, such as interest and profit. If the cost elements only of bilateral transactions are used, a 'productive' view of government activity gives the same result in certain national accounting fields as the view whereby the government authorities are regarded as consumers only.[1] For example, the national product has the same value. A value according to costs with the aid of bilateral transactions could take the accounting form indicated in Table 2.

TABLE 2

Government Sector
(Production Alternative I)

PRODUCTION ACCOUNT

Wages	Value of production transferred to consumption account
Purchases of goods and other services	

INCOME REDISTRIBUTION ACCOUNT

Direct transfers	Direct taxes
Subsidies	Other direct transfers
Disposable income	Indirect taxes

CONSUMPTION ACCOUNT

Governmental consumption:	Disposable income
(a) Durables	
(b) Non-durables	
Savings	

SAVINGS-INVESTMENTS ACCOUNTS

Capital transfer for investment in governmental enterprises	Savings
Lending	Borrowing

[1] Those who recommend cost valuation for government production usually have 'localized' consumption of this production in the government sector, too.

It is apparent from Tables 1 and 2 that the difference between the consumption and production approaches is rather small, at least so far as the treatment has progressed.[1] But valuation according to factor cost can be taken further. If less weight is given to bilateralness and more to parallels with the cost elements of enterprises, it is possible to impute transactions. For example, it is possible to introduce an item for the wear and tear of capital, and the like, after the fashion of firms. We will return to this in Table 3.

(*b*) *Other valuation norms*

We can consider a third way of valuing the result of government activity, besides the consumption approach or the valuation according to costs. This approach uses a direct valuation of government services, to a certain extent with norms arbitrarily chosen. This valuation might be associated with some suitable norm. It occurs in the national accounts in the households sector, when the farmers' personal consumption of their own products is assessed at a corresponding market price, or when the yield from a person's own home is assessed at the same amount as the rent paid for an equivalent rented place. In these examples from the household sector an attempt has been made to reflect the real transaction in a financial one which is taken from a parallel in the market economy. Such a parallel is, however, very difficult to obtain for a great deal of government activity. It is possible that such a parallel might be found for hospitals and some sorts of schools.

But it is possible to dissociate this valuation entirely from the market economy, and to imagine a valuation on a political basis, or one proved suitable for some practical purpose. Political valuation of a real transaction occurs, for instance, in Sweden in the so-called agricultural calculation. This is a survey of the incomes and expenditures within agriculture, and is used in fixing the prices of agricultural products. The political valuation is mainly connected with the imputation of a wage for the farmers.[2] This wage is of importance in fixing agricultural prices on the basis of a certain parity between costs and incomes.

Such an independent valuation according to prices fixed in some way or other, if applied to national accounts, would lead

[1] The difference is mainly in the generation of incomes. In Table 2 there is an entry for the generation of incomes (wages) which does not appear in Table 1.

[2] Certainly such a political valuation may be based on several different criteria, e.g. parallelism between wages for farmers and wages for agriculture workers.

to a production account like that of enterprises with a profit or loss balance to be transferred to the income redistribution account. If market prices are not stipulated as the only approved prices for the analysis of results, and prices determined in some other way are accepted also for the enterprise sector, the difficulties in assessing the value of government services disappear as a *special* problem. In accounts based on 'shadow' prices and intended for use in the analysis of results, the enterprise sector and the government sector are on equal footing.

4. The general character of accounts

Let us first try to summarize. If an attempt is made to put the analysis of results on a theoretical basis of preference maps for welfare measurements or on substitution curves[1] for production factors for productivity measurements, it is difficult to fit government activity into the scheme. There is no pricing for government services. One possibility is to regard the government activity as merely concerned with consumption. But there are many weaknesses in this procedure.

If this rather fragile basis for the analysis of results is rejected, there remain two alternatives. One is to abandon the analysis of results as founded on the national accounts, the other to seek new cases for valuation. It seems somewhat unsatisfactory to base this valuation only on a 'belief' that some sort of market prices or cost prices are applicable as soon as they are determined from market parallels.

If it is considered desirable to use the national accounts for the analysis of results, it seems appropriate to consider government activity also as productive, since so much happens to the economic process in the government sector. This activity is not altogether the same as in the case of a household, where the work of the housewife is usually disregarded. To a great extent the government activity is carried on for the benefit of other sectors. That has created the problem of 'intermediate consumption', to which we shall return later.[2]

[1] See J. R. Hicks, The Valuation of the Social Income, *op. cit.*

[2] The problem of whether the national product is to include activity facilitating the production of other goods or not is not considered here. It has been frequently discussed in all sorts of connections, for example, at the previous conference of the International Association for Research in Income and Wealth. It seems to be no objection against this calculation if the same sort of calculation is used for insurance and banking. In all cases we are entering the field of arbitrary imputations.

Whatever valuation is chosen, some general features regarding the handling of accounts in the government sector seem to be possible. It seems appropriate to build up the value by cost elements. It is part of the nature of the matter that a valuation for the analysis of results ought to have a reasonable cost counterpart. In drawing up such national accounts there is no need to avoid entering imputed transactions, as long as these can be valued in a way which is reasonable from the viewpoint of practical use.

The government sector of the accounts might usually appear as indicated in Table 3 when it is to be used for the analysis of results.[1] The items entered there might be used to various extents and at various valuations. In the form in which it is presented in Table 3, the sector contains first of all a production account. The value of government services is entered here on one side, and on the other side various cost elements. These may include the yield of real capital, the cost of repairs and maintenance, and the depreciation of real capital used for the production of services.

The income redistribution account contains, as always, only unilateral transactions. All unilateral transactions such as taxes, interest and the like are entered here. This account records all the transactions associated with the third essential function of the government authorities in the social economy, namely, that of income redistribution; the other two being its functions as producer and consumer.

Three different kinds of government consumption have been included in Table 3: one kind furthering business activity ('intermediate'), another individual consumption (household activity), and a third collective consumption. The first two are government consumption which implies services rendered to certain definite entities, while collective consumption includes the provision of such services as military forces. Alternatively, the latter might be divided up according to Kuznets' rules.[2]

This general approach (Table 3) implies that 'consumption' of the services produced by the government is localized to the government sector. In principle, there is nothing to prevent the

[1] These are the basic accounts and items. Certainly some accounts may be consolidated in the national accounts with other sectors if it is reasonable for some purpose.

[2] Simon Kuznets, Government Product and National Income, *Income and Wealth Series I, op. cit.*

transfer of these services to other sectors by means of suitably imputed transactions.[1]

TABLE 3

Government Sector
(Production Alternative II)

PRODUCTION ACCOUNT

Wages	Value of investment production
Yield of real capital	Value of consumption production
Purchases of goods and other services	
Cost of repairs and maintenance	
Depreciation	
Surplus	

INCOME REDISTRIBUTION ACCOUNT

Direct transfers	Transfer of surplus from production account
Subsidies	Yield of real capital
Disposable income	Direct taxes
	Other direct transfers
	Indirect taxes

CONSUMPTION ACCOUNT

Governmental consumption:	Disposable income
(a) Intermediate	
(b) Final individual	
(c) Final collective	
Savings	

SAVINGS-INVESTMENTS ACCOUNT

Capital transfer for investment in governmental enterprises	Savings
	Depreciation
Gross investment	Cost of repairs and maintenance
Lending	Borrowing

[1] There have been at least two practical attempts to carry the productive process beyond the government sector. One is the earlier U.S. method of allowing business taxes, and the like, to stand for payments for government service. This would mean that these taxes would be entered in the production account of the government sector. (This method persists in many countries in the treatment of fees, see Section F) The second method is implicit in the calculations of the German national income between the wars, with its 'fehlende Steuern'. The national income in Germany was calculated from the income side. Business incomes were entered after their tax payments had been deducted. So far it was in agreement with the old U.S. practice. But then there was an independent calculation of the value of those services which actually benefited household and enterprises respectively. If the enterprises received services to a lower value (arbitrarily and separately calculated) than the taxes they paid, an amount called 'fehlende Steuern' was added. The amount of taxes paid by enterprises and already deducted could be interpreted as payments for private household consumption (see *Bank Archiv*, 1942, p. 278 *et seq.*).

Such a treatment of government consumption and its localization to the 'final' consuming sectors could make use of the same method as Stone used for banks and insurance companies. However, it seems that there are some advantages to be gained by treating the accounts of bank and insurance activity by the same method as the government activity (Table 3), instead of vice versa. It would involve less strange imputed items. It would result in items for bank consumption and insurance consumption in the national product breakdown.[1]

5. *Some implications for the calculation of the national product*

Finally some comment may be offered regarding the aggregates resulting from the use of various types of national accounts as presented above. Certainly, the manner in which the government sector is constructed is important, for instance in the calculation of the national product.[2] It may create difficulties in comparisons between different countries.

In the first place, the location of the boundary line between government activity in the enterprise sector and government activity proper leads to differences in the size of the national product, when this is measured at market price. The relation between government consumption and subsidies is changed when there is a change in the proportion of government activity, not entirely profitable, included in the enterprise sector. The more such activity is recorded in the business sector, the greater the amount of subsidies, and the less the amount of government consumption and thus of national product at market price.

Secondly, the size of the national product is affected by the valuation of government activity. In a valuation from the cost side, for instance, the number of imputed items involved in the valuation is important. The value of government consumption can be obtained by adding the yield on administrative buildings (rent) to the cost elements obtained from realized transactions (wages, etc.). The size of the gross national product can be increased by recording government investments with those by enterprises. Then they are entered 'twice' in the gross national

[1] See *Ekonomisk Tidskrift, 1950*: 2.

[2] Of course, certain national accounts, if sufficiently differentiated, may be used for the presentation of a national product calculated from some other definition than the one which follows mechanically from the accounts. The possibility of varying the latter indicates the possibility of varying the concept of national product, however.

product, so to speak, in contrast to the case where real capital were regarded as durable consumption goods. (See Section V.)

The size of the national product can also be changed by valuing wages from military service in various ways. Nowadays, in some cases, food is included as an item of wages; in other cases, clothes too. It is also possible that there could be a further adjustment towards civilian 'use-values'.

V. THE ANALYSIS OF CHANGES

1. *Some general remarks*

We have now considered national accounts at some length from the point of view of using them in the analysis of results. That was done partly because the analysis of results constitutes the most important purpose in practice, and partly because the larger difficulties of incorporating government activity in the accounts arise in connection with that purpose.

The other purpose to be treated is the comprehensive concept 'analysis of changes'. The concept is used here because it is easy to handle and is a suitable pendant to analysis of results. I will assume, however, that the concept is used in a rather restricted sense, having approximately the meaning of business cycle analysis.

National accounts which are to serve this purpose must give statistical material for economic theories that are formulated to explain economic fluctuations from the short-term point of view. As there are many such economic theories, it is not possible to give any unique solution of how national accounts should be constructed in order that they may be used for analysis of changes.

I will not choose any particular economic theory by way of example. Instead, I will mention some typical ingredients of different theories of economic fluctuations. The relation between savings and investments is usually an important constituent. The correlation of various magnitudes in a causal chain may be another important one. Thus, a theory may assume a correlation in time so that expenditure on investments is directly determinable from the profits of the previous period (sequence analysis). A theory may also be linked with conditions of equilibrium

(without time-lags) that may be calculated with the aid of various propensities such as the propensity to save.

The hypothesis that the economic subject (an individual or a firm) acts in economic matters somewhat rationally, or at least consistently, is behind this search for relationships in many theories about short-time fluctuations. The reactions of the subject which in turn lead to certain definite economic actions are the basis for these theories. The theories thus imply the knowledge of the 'calculation models' or behaviour patterns of the various economic subjects. It is often supposed that these may be discovered and formulated from the subject's economic transactions. The national accounts may serve as a source of information about these economic transactions.

The activity of the government is often regarded as an 'external' factor in theories of the business cycle. It is not so easy to give the activities of the government a place in statistical 'calculation models' as it is to establish behaviour patterns for private activity. The interpretation of government activity cannot be incorporated in a behaviouristic scheme in any simple way. The private economy and the way it functions is therefore often used as the foundation, and its actions are considered to be interpretable by means of a theoretical model. The activities of the government are then often considered to influence the private economy in a measurable way.

The interdependence of different subjects, which is the main interest of the analysis of changes, should be illustrated by financial (realized) transactions in the first place. Imputed transactions may also be justified for the interpretation if the various subjects estimate them with approximately the value given statistically by the imputation. This is very difficult to determine. Therefore the imputation of transactions to be included in the national accounts for use in analysis of changes is rather restricted.

One imputed transaction is often included in the national accounts, namely, the depreciation of capital. The difference between the analysis of results and the analysis of changes appears quite clearly here. Certain depreciations calculated from a general economic point of view ought to be given in national accounts to be used for the analysis of results. From the viewpoint of the analysis of changes, it seems reasonable to use the amounts of depreciation changes given by the firms themselves.

These represent parameters in the plans and the economic action of the firms. They might differ very much from the depreciation items adequate for the analysis of results. Of course, it is probable that even the firms have many different ideas about the valuation of the imputed transaction of depreciation: one for the purpose of taxation, one for the shareholders, and one for internal use.

In national accounts constructed for use in analysis of changes it may also sometimes be a delicate operation to achieve an over-all balance. Perhaps it may even be doubted whether it is worthwhile to do so. Take as an example the writing off of bad debts. It is not likely that this transaction is dealt with in the same way by creditor and debtor. Nor is it certain that a particular transaction between two subjects is entered in similar types of account.

2. *Savings and investments*

Since the war, national accounts, or perhaps more exactly, national income statistics, have found an important analytical use in *ex ante* calculations of the inflationary pressure. This type of analysis of changes may try to estimate the excess demand for a future period. In Sweden, at any rate, this calculation is based upon a national account, 'the balance of resources'. In this, supply (gross national product and imports) and demand (gross investment, consumption and exports) are registered. Plans and forecasts concerning supply and demand are compared, assuming that prices remain unaltered, in order to estimate the inconsistency in plans *ex ante*.

Even though the reasoning about the excess demand is in terms of the total supply and total demand within the society, it could quite well be connected to the balance between savings and investment expenditures, considered in financial terms. This balance belongs to the typical ingredients in analysis of changes mentioned before.

To a certain extent, the private entities and government authorities play different rôles in the reality behind the statistical accounts of savings and investments. Hicks has expressed this from the expenditure side in the following way:

> For *at bottom* what the national income accounts have to show is the way in which an effective demand, sufficient (and no more than sufficient) to purchase the national output, is being secured. In the

> case of private demand, the distinction between consumption and investment expenditure is all-important, because they correspond to different sources, the one chiefly arising from the private accounts of individuals, the other from the business accounts of firms. But in the case of government demand the distinction is much less important, for both 'consumption' and 'investment' expenditure come from the same source. The line between them is inevitably an arbitrary line. Useful and intelligible accounts could be constructed with the line drawn in several different places.[1]

It is therefore the balancing of the budget and the excess or deficit in the total government budget, with its influence on the relation between savings and investments, which seems to be of particular significance for the analysis of changes. This balancing should appear in the national accounts if they are to serve the purpose we are considering.

3. *The general character of accounts*

When the national accounts are being used to analyse economic changes, attention is focused within the government sector on those accounts where the economic process can be registered with the help of the bilateral, realized transactions. The production account of the government sector is therefore not particularly useful. It would hardly serve the purpose to include any transactions in that account. But the income redistribution account is important. That will show how the government distributes income between various individuals, and this obviously affects their reactions and economic behaviour. It would be useful to see how the savings-investments balance in its private economic aspect is affected by the redistribution of incomes. However, it appears to be quite difficult to do this. There are no pure items which may be said to be directly related to savings at the next stage, etc. Perhaps it is possible to go a stage further. Contributions to unemployed and sick people will go principally to consumption at the next stage and so on.

The income redistribution account will contain roughly the same items for the analysis of changes as it did for the analysis of results – except the transfers from the production accounts (see Table 3). The two last accounts, on the other hand, will be somewhat different. As has already been shown, it is not decisively important in this case whether the government authorities

[1] J. R. Hicks, *The Problem of Budgetary Reform*, Oxford, 1948, p. 57.

make expenditure in purchasing consumption goods or investment goods, just as it is not so important in the household sector either.[1]

The balance of the consumption accounts is savings. The uses of these savings will appear in items which it is essential to distinguish. This can be done in the account for savings and investments. Some of the savings are used for investment in government enterprises. Even if these are managed like private firms so that income is expected to cover outlay, the investments are often determined by a central authority. In the savings-investments account, it is therefore important to distinguish amounts which are invested in government enterprises. What is left over may be called net government debt reduction, or increase of debt when it is a negative item, and constitutes the balance of the total government budget.

National accounts suitable for the analysis of changes might have much the same form as in Table 1. In other words, much the same type of national accounts is required as when the government authorities are regarded as pure consumers in an analysis of results.

So far as the most appropriate rendering of the accounts (in our case especially the government accounts) is concerned, different purposes for national accounts, thus, do not necessarily conflict in all details. The presentation is, of course, to a certain extent similar and furthermore certain compromises are possible. It seems to be the valuation of real transactions which is the main cause of differences.

We have considered two types of national accounts above. The problem becomes much more complicated, of course, if other purposes are introduced into the picture as, for instance, making figures available for 'international taxation' (contributions to the UNO and the like), for national budgeting, etc.

VI. SPECIAL TRANSACTIONS

The treatment of national accounts for the two purposes has hitherto been carried out only with the help of the ordinary total transactions. The distinctions have therefore probably not appeared as particularly important. However, we will now try

[1] That is not to say that it is entirely lacking in interest either from the viewpoint of the analysis of changes or from other viewpoints. Special entries in the consumption account for expenditure for 'durable' and for 'non-durable' goods and services are therefore desirable.

to illustrate the approach which has been used above by dealing with some traditionally troublesome items in the government sector.

1. *Subsidies*

It may be appropriate to distinguish two types of subsidies: for consumption, and for investment. The latter also serve to keep down the prices of consumption goods, but only indirectly and from the long-term point of view. Consumption subsidies are the most usual in practice.

The treatment of consumption subsidies in national accounts is often linked to the treatment of indirect taxation, and even more so in the case of national income statistics. 'Indirect taxes minus subsidies' has become a familiar item in national income statistics. This constitutes the difference between the 'market price' and 'factor cost' concepts in the realm of national aggregates.

When it has been a question of dealing with the item indirect taxes minus subsidies in the calculation of the national product and income, many interpretations have been put forward. The argument has usually revolved around indirect taxes. Corresponding reasoning (but in the opposite direction) seems to have been often tacitly applied to subsidies as well. Certainly subsidies and indirect taxes have common properties. In their effect on the level of prices they are clearly opposites. That is, however, not to say that an attempt to interpret the place of indirect taxes in national income statistics will always conversely apply to subsidies.

A subsidizing of consumption implies broadly that the government authorities pay a part of the production cost – usually via the enterprise sector – so that the consumption expenditure of the household sector is kept down. There can be different motives for subsidizing consumption. It may be considered desirable to give relief to the consumer or to the producer, for instance in agriculture. In both cases, subsidies affect the prices of certain goods.[1]

[1] The so-called 'intermediate' government consumption is also a sort of subsidizing, but it is applied by having the government perform productive activity which the firms do not then need to carry out. There are, however, many points of reference between intermediate government consumption and subsidies, and it is worth noting that it has not, as far as I know, been proposed to regard subsidies as a government consumption, although this would fit in with the usual treatment of fees.

The analysis of results, as mentioned before, aims at comparing various aggregates of real transactions which must first be valued. The real transactions – the selling of goods, for instance – are valued at a certain price. It is possible to use the market price or the factor cost, the latter being regarded in this case as a market price minus indirect tax plus subsidy. So far as the analysis of results is concerned, some consequences arising from the use of either of these valuations are worth mentioning.

If a real transaction to be entered in a production account of the enterprise sector is valued at market price, the indirect taxes should come into the enterprise's income redistribution account. The indirect tax transaction is not part of a bilateral transaction.[1] Neither is a subsidy an equivalent of a real transaction. The sale is already valued at market price, and the subsidy should therefore be included in the enterprise's income redistribution account.

On the other hand, if the various real transactions are valued at factor cost, certain technical difficulties occur in balancing the accounts. Such valuation would be best suited by a system with 'fourfold' book-keeping. In this case, the indirect taxes could be appropriately transferred from the household sector to the government sector as a redistribution of income, perhaps most suitably via the income redistribution account of the enterprise sector.[2] The treatment of the indirect tax and the subsidy in this case is a problem which would require a closer inspection of the 'fourfold' book-keeping. This would take us too far.

In the government sector, subsidies present no major difficulties of book-keeping. Subsidies, like indirect taxes, are entered in the income redistribution account. There are only two theoretically conceivable ways of registering subsidies and indirect taxes in other accounts. Indirect taxes might be entered in the production account if they were regarded as payment for government services. Subsidies might be entered in the consumption account if they were incorporated in government consumption. However, it seems that neither of these methods is to be recommended – certainly not the first.

[1] The payment of these taxes may, of course, be said to be covered by the balance of the production account.

[2] In Aukrust's terminology: via the account for current financial transactions. See O. Aukrust, *Review of Economic Studies*, *op. cit.*

The treatment of subsidies in the analysis of changes is somewhat different. The real transactions behind the financial transactions do not need to be given such close scrutiny. If the subsidy is related to the sales, the firms would presumably enter the subsidy in their production account. Assuming a consistent behaviour pattern behind the economic decisions, the subsidy ought to be entered in the same account of the national accounts. If the subsidy is applied in some other way, for example as some form of more indirect supplement to incomes, it might be included in the income redistribution account.

So far as the analysis of changes is concerned, subsidies ought to be entered in the government income redistribution account. Therefore the treatment of this item may not be the same in both sectors. From the viewpoint of one sector, enterprises, it may be a transaction to be included in the production account, while from the viewpoint of the other, government, it may be an item for the income redistribution account. This is a procedure of national accounting often used at the present time. If such accounts are to be consolidated to get a national income or national product, what is really obtained is the current national product at current market price, plus subsidies. The latter item is avoided in practice because the subsidies are drawn from both sides – implicitly at any rate – and the item 'indirect taxes minus subsidies' is obtained on the debit side of the consolidated production account.[1]

Let us now consider capital subsidies. When the government authorities subsidize a certain investment in the enterprise sector, a 'period problem' is introduced the economic consequences of which are difficult to estimate. Suppose an entrepreneur is going to install a machine which costs 20,000 crowns. Suppose also that prices during the whole of the period of depreciation remain unchanged, as does the utilization of capacity, that wear and tear is evenly distributed over the whole period, and that the entrepreneur is able to extend the depreciation of the machine over 40 years at 500 crowns a year. These 500 crowns are thus a measure of the real wear and tear valued at market price. This depreciation is a cost to be covered by the price of the consumption good which is produced with the help of the machine.

[1] However, for use in analysis of changes it is not necessary to get the concepts suitable for the analysis of results through consolidating.

Let us now suppose that the government subsidizes the capital good with 2,000 crowns. This has two effects. First, the entrepreneur gets the machine for 18,000 crowns instead of 20,000. It is problematical how the price should be recorded in the national accounts. If the subsidy goes to the producer of the machine, the price will probably be recorded as 18,000. If it goes to the purchaser of the machine, the price recorded will probably be 20,000 crowns – at least, if the seller's statistical material is used. However, let us assume that the subsidy goes to the producer of the machine. Second, it is necessary to depreciate the machine annually at the rate of 450 crowns only instead of 500. There is thus 50 crowns less of depreciation to be covered by the price of the consumption good.

So far as the national accounts are concerned, this means that the results of a capital subsidy must be considered in connection not only with the cost of producing and investing capital goods but also with the price of the consumption goods. Of course it might be possible to calculate such a subsidy item formally and to divide it up over the periods of some supposed lifetime. So far as the national product at factor cost is concerned, this imputed consumption subsidy would balance a depreciation subsidy. The net product thus remains unchanged.

The arbitrariness is thus considerable and the accounting rather complicated. The latter should be accomplished via transfers between the income redistribution and the savings-investments accounts in the enterprise sector.

It is also possible to regard capital subsidies as the mirror image of the expenditure on consumption capital, and to introduce it as a consumption subsidy in the year in which the construction of capital takes place. That part of the capital would then be written off at once as a subsidy.[1]

In our national accounts, capital subsidies in the government sector could be entered either in the income redistribution account or the savings-investments account.[2] If it is desirable from the point of view of the analysis of results to consider it as a single subsidy for future consumption, it might be appropriate to enter it in the income redistribution account, but otherwise in the capital account.

[1] In Sweden, capital subsidies, only small items, have been included among the other subsidies in the national accounts.

[2] Indirect taxation on investments provides a similar problem.

2. *Fees*

Fees may in many respects be regarded as the opposite pole to subsidies: subsidies may be considered as government payments in connection with certain goods and services produced in the enterprise sector and consumed in the private sector; fees may be regarded as a private payment in connection with certain services produced – and from a book-keeping point of view consumed – by the government authorities.

The fee is paid to the government authorities in return for a service, but it does not cover the costs for the service in question. In other words, the household or the firm pays part of the government expenditure on consumption. Of course, the reasoning could be reversed and the remainder of the costs not covered by the fees might be described as a subsidy from the government. If this latter reasoning is used, the activity ought by definition to be included in the enterprise sector of our national accounts.

Fees may, from the national accounting point of view, be considered in at least one of the following four ways:

(1) The fee may be entered as an expenditure on goods and services with the corresponding sales entered as an item in the government production account, or balanced against government purchases. The rest of the government expenditure on these services would then be treated as government consumption.

(2) The fee may be regarded as an indirect tax on government (not directly collective) consumption and it then raises the value of the government consumption by the amount of the fee.

(3) The fee may be regarded as a direct redistribution of income, in exactly the same way as direct taxation. This is especially appropriate when the fee is accompanied by an obligation on the consumer; for example, such school attendance that is not entirely free of charge.

(4) Fees may be considered as some sort of subsidy from the private sector to the government, and be balanced against subsidies in the other direction.

If we consider the analysis of results, the first way is not so suitable since it suggests that the real service transaction occurs in two places, once as a consumption service in the household sector (or half-finished in the enterprise sector), and again as the

same thing in the government sector; and this cleavage is somewhat incomprehensible from a strictly real point of view.[1] This method seems to be entirely financial.

The second method does not seem to have any realistic basis, only a formal one.

The third, the one which has hitherto been used in Sweden, does not seem to be altogether satisfactory either. But the weakness in this method seems to be of the same type as in the case of direct taxes.[2]

If we were to pass on the services produced by the government to the household and enterprise sectors by a process of allocation similar to that used by Stone for banks and insurance companies, it might be possible to solve the problem of fees in the same imputed way as the problem of bank incomes, lumping fees together with imputed fees.

Thus it is not easy to deal with fees in national accounts drawn up with the analysis of results in mind. This is particularly true of the fees paid by firms.

For the analysis of changes it seems to be suitable to enter fees in the production account of enterprises and in the income redistribution account of the government authorities. For the enterprise fees are a cost of production. In the household sector fees are best regarded as expenditure on consumption.

It is the analysis of changes aspect which has in practice often influenced the treatment of fees in the preparation of national income statistics. Generally, fees have been balanced against government consumption in the calculation of the national product.[3]

[1] Using ordinary symbols it implies the possibility of dividing pq for the service in question into $p_1q_1+p_2q_2$. This is evidently impossible.

[2] This will appear from the following example. The government takes over a number of branches of production at the half-finished stage, and defrays their cost, for instance, one-third with fees and two-thirds with taxes on the enterprises. The private enterprises then get a bigger profit in their production account, since both fees and taxes are dealt with as redistribution of income. Obviously this reasoning is one aspect of the old 'intermediate services problem'. The problem will always have two conflicting sides. It is in some respects rather artificial to show a larger profit for the arms in this way (and a larger national product) when they actually pay for the service in question. There is not such a close connection between some taxes and some special expenditures, when you are looking at the statistics *ex post*.

[3] In passing it will not be out of place to mention once again the inconsistency with reference to the simultaneous treatment of subsidies. If a transaction associated with fees is split up in a rather peculiar way, so that it is entered in the accounts in two places, as fee for a good or service and as a remainder of government consumption, consistency would demand the equivalent procedure for subsidized activity. Subsidies would then become government consumption.

The treatment of subsidies and fees in national accounts designed for the analysis of results is a good illustration of the valuation problem which occurs in connection with government activity, where it is no longer possible to use market pricing. Especially when fees are considered in an accounting system to be used for analysis of results, the problem is in certain respects insoluble within the usual accounting and valuation framework. However, it is a consolation that in practice the amounts involved are probably rather small.

3. *Entering government capital in the accounts*

From a practical statistical point of view, the biggest differences from one country to another are likely to occur in the treatment of government capital, as far as the government sector in the national accounts is concerned. Variations here might lead to relatively important variations in the national product, especially in the gross national product.

We have already seen that it may be desirable in the case of the analysis of results to account for government capital by calculations comparable to those used in an ordinary firm – although government capital is not involved in production for sale. The capital in question usually consists of administrative and social buildings, including schools and hospitals, military constructions and heavy material, and roads.

If this capital were to be treated as it is in the enterprise sector, each year a *gross* yield would be calculated for the capital, and the amount of this would be entered in the government consumption. This yield would need to cover the costs of depreciation, and moreover there ought to be a net service value or rent generated by the capital.

The simplest way of accounting for government capital would be to regard the value of the depreciation as equal to the gross yield or the service of the capital and to depreciate each capital good entirely in the year of investment. This implies, for example, that the building of a road would be included in the national product as an investment, but written off as immediately depreciated, whereupon the depreciation is added to government consumption as a cost.[1]

This method may have two important consequences:

[1] If government investment and thus depreciation should fluctuate much from year to year, a more smooth depreciation series certainly ought to be calculated.

(*a*) The gross national product would be increased by the amount of the investment expenditure, compared with the case where such expenditure is directly considered as consumption[1] (durable consumers' goods).[2] Net national product, of course, remains unchanged either way.

(*b*) The balance on the government consumption account might be identical with the surplus on the current budget; this is the case in Sweden.

The treatment of capital in the government sector is a problem primarily when the national accounts are used to analyse results. To solve it, there must be some theory or generally accepted rule for valuation. As mentioned in a former section, for the analysis of changes not so much attention need be paid to this problem. Imputations are not useful in this case.

A special problem regarding the manner of accounting for capital may arise when there is a transfer of real capital from the government sector to the enterprise sector. It occurs in the government sector if the capital has previously been 'written off' as totally depreciated and has thus been statistically regarded as government consumption, in the form of total immediate depreciation. Logically in such a case the government consumption ought to be decreased by the value of the capital when it is put into the enterprise sector. The sale of real capital thus might be recorded under investment as a minus item by the seller and as a plus item by the buyer; and to offset the former depreciation it might appear as a deduction from the consumption of the seller, i.e. the government authorities.

4. *Military pay*

Wage payments to persons called up for military service are an item by themselves. The wages can hardly be called expendi-

[1] In the proposals for a 'simplified system' made by the National Accounts Research Unit, O.E.E.C., 1951, military investment expenditure is directly included in government consumption. There is much to be said for such a procedure: military investment is essentially different from investment in production equipment for civilian use. But in other respects usefulness is lost by doing this. Of course it depends on the purpose for which the figures of the accounts are to be used. In Sweden the figures are used among other things as a statistical aid in the regulation of investment (an administrative purpose). This regulation is intended to economize the production resources available for investment, which are scarce in proportion to the demands upon them. Every use of these factors of production must therefore be classified as investments, even use for military constructions and heavy material.

[2] If a net value of the yield on the capital is added, then both the gross national product and the net national product become higher.

ture for production factors purchased in a free market. Although the military personnel receive limited remuneration, compulsory enlistments can hardly be valued by their pay. It is problematical whether these transactions can be said to be bilateral in any sense.

As for the use of national accounts in the analysis of changes, the valuation of military service presents no special problem. Government payments to military personnel are a financial transaction and may be entered in the consumption account, since they take place in connection with the utilization of certain production factors. They might also be put in the income redistribution account. This is perhaps the best way to treat the payments when analysis of changes is concerned. They will in such a case be considered as a unilateral transaction.

For the analysis of results, military pay is extremely troublesome. It has no particular meaning from the theoretical point of view. It does not represent a price in the classical sense. It cannot be considered as a factor cost, and thus does not fit into a reasoning about substitution of production factors between different fields of use, for example, in working on the national budget. Nor has it any special meaning if the government authorities are regarded as pure consumers.

One way would be to regard military personnel in the same way as housewives in the household sector. For lack of accurate valuation, they are not included in either the production or consumption accounts. So far as I know, a parallel with housewives has not been used for solving the problem of military pay. One reason may be that we are in the military case concerned with production factors which are used in another sector than the one in which they originate.

The many possible ways in which remuneration of military personnel may be treated are evident from practical works. Sometimes only the financial remuneration is considered as a wage. Sometimes government expenditure on food for the personnel is added to the wage. And in other cases the expenditure on clothes too is regarded as part of the wage. We could go further. Expenditure on lodging accommodation may also be included. There are also variations in the treatment of financial remuneration of military personnel. Sometimes invalid pensions and family pensions, and the like, are included in 'wages'. In other cases they are not.

The usual treatment of military 'wages' in the national

accounts has important consequences for the use of the accounts in the analysis of results. It is possible to get large 'increases in productivity' in cases where the average military 'wage' is lower than the average civilian wage, when military personnel pass over to civil production, and vice versa.

Military payments are, like fees, an example of the valuation problem in connection with analysis of results. It can only be solved if some sort of 'shadow prices' are adopted for valuation of real transactions.

VII. SUMMARY AND CONCLUSIONS

1. I have tried to show the great amount of arbitrariness in the treatment of the government sector in national accounts. There is a corresponding arbitrariness in other sectors, for example, banks, insurance companies, private non-profit institutions, but it is more clearly apparent and has greater practical significance in the government sector. It may be possible to reduce the degree of arbitrariness by considering the purposes for which the national accounts are to be used.

2. The analysis of results, historically, has been the most important purpose for the construction of national accounts beginning from national income statistics. The analysis of results has almost always had a background of a market economy, and consequently the transactions have been considered bilateral. However, recent international discussion has shown the theoretical assumptions behind bilateral valuation to be deficient in many respects.

3. Government activity fits into present-day theories for the analysis of results less easily than do the majority of private activities. In evaluating the government sector there is little gain to be obtained from hunting for formal likenesses with the private sectors. But it is possible to think of a scheme for reporting the activities of the government sector on the basis of various valuations of a more general type such as are used in the enterprise sector. However, it must be given a theoretical or politically acceptable content.

4. The analysis of changes is interested in the interdependence of various entities within the social economy, and in calculation models or behaviour patterns that may explain the actions of

the private economic entities. This can be partly derived from the financial transactions in national accounts. For this purpose the government sector can be included in the accounts rather well. If the analysis of changes looks for its explanations outside this financial interdependence, the accounts lose some of their usefulness.

5. The main purpose of national accounts in their more usual form should be to describe in statistical terms the economic activity which is entirely within the markets, that is to say, to register financial transactions. For the analysis of results, other types of statistical registration ought to be found, like Leontief's 'input-output-system'.

6. It is important that statisticians who deal with national accounts give more attention than hitherto to the purpose of national accounts. This is certainly applicable to the international organizations which are trying to achieve very desirable standardization of the statistics in this field. If we do not have some criteria provided by the theoretical basis and the purpose of these accounts, they easily become a system in which technical finesse and formal qualities play a dominant rôle in design. This is particularly obvious in the government sector.

7. It is possible that certain standard alternative types of national accounts may be drawn up with reference to the purposes which are at present most important. If this is to be done, there must be agreement in each special case about the demarcation of the boundary between general government activity and government enterprise activity, and about the treatment of certain standard items.