1

FUNCTIONS AND CRITERIA OF A SYSTEM OF SOCIAL ACCOUNTING

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I. THE SOCIAL ACCOUNTS AND THE CLASSIFICATION OF TRANSACTIONS

A SYSTEM of social accounting is a practical means of describing what is taking place in an economic system insofar as this can be expressed in terms of transactions between a set of accounts drawn up on the double-entry principle. If we possess such statements for a number of time periods or geographical areas there arises the problem of expressing them in terms of the prices ruling in a single period or area. In this paper however I shall concentrate on the problems of dealing with one area over one time period.

An economic system embraces three basic forms of activity which we may term production, consumption, and adding to wealth. Production may be defined as bringing into being goods and services on which members of the community or the community as a whole through its elected representatives set a valuation. Consumption may be defined as the using up and wearing out of the fruits of production and adding to wealth may be defined as the preservation of the fruits of production for consumption or for contributing to consumption later on.

A transaction, recorded in terms of money, shows the sum due from one point in the system to another point in the system. There may be some precisely defined good or service due in respect of this sum, as in the case of a purchase, or there may not, as in the case of a gift or a tax. A transaction may take place between different transactors as in the case of a purchase by a customer from a shop, or it may be internal to one transactor as in the case of the provision for depreciation by a manufacturer which will be debited to his operating statement and credited to his depreciation fund. In the former case there will normally be an objective market transaction which may in principle be recorded by each transactor. In the latter case the valuation of the transfer will not be made on any market but will have to be assessed on the basis of appropriate principles and conventions.

I have stressed the fact that a system of social accounting is a practical means of description. It therefore embodies the classification of transactions which the investigator considers useful for whatever his purposes may be. The basis of classification is not and cannot be settled by the accounting system because such a system can be set up to reflect any set of self-consistent principles that can be devised. The essential function of the accounting approach from this point of view is to ensure self-consistency in the classification of transactions, that is to make certain that the classifications adopted do not have undesired results. For example suppose we wish our classification to yield among other things the identity of saving ≡ investment for a single closed economy. Then if we treat death duties as a current receivable by the government, because it normally thinks of them in that way, we must not at the same time treat them as a capital payable by persons despite the fact that they normally think of death duties in that way. Each treatment may seem reasonable on its own ground, but the two taken together imply that saving ≡ investment + death duties, which is inconsistent with the definition we originally intended to adopt. To obtain consistency we must treat both ends of the death duty transaction either as current or as capital. Whichever we do will be consistent with our original intention, and which we do will simply determine how much saving we attribute to the government as opposed to persons.

This example, though in itself trivial, illustrates I believe the source of the difference in importance attached to the accounting approach by different investigators. Those preoccupied with such questions as whether we should treat death duties as current or capital transactions will speedily see that an accounting approach cannot help them to make up their minds. Those on the other hand who are impressed with the practical difficulties of ensuring consistency will see at once that their case is different and that the accounting approach is the answer to their problem. The objection to this rationalization is of course that the two aims do not conflict. On the contrary, a good system of classification is necessarily a consistent one. In fact consistency is not easy to achieve because the economic system is immensely complicated and the implications for other parts of it of what one is doing in classifying one small piece of it are hardly ever intuitively obvious. Of course we may, if we like, relegate the

accounting structure to an appendix as Marshall did with his mathematics but the main result of this will be to make it difficult for others to see what we are doing. It will not alter the fact that unless we are gifted with superhuman insight we shall in fact have had to make use of an accounting system in deriving in detail our system of classification if, as is necessary, it is to be a consistent one.

To those who approach problems of definition from a theoretical point of view it may seem that in the preceding paragraph I have stressed unduly the complexity of a system of transactions. It is true that we usually begin by setting up theoretical definitions of a general and abstract character, as when for example we define income as the amount which can be spent for consumption in a period without creating an expectation of being worse off at the end of the period than at the beginning of it. Such a theoretical definition avoids by its very nature any statement in terms of the empirical correlates of the object defined. Such definitions are guides to the applied worker which insofar as they are usable will eventually have to be replaced by a statement of the content of the empirical correlate adopted.

In this way the general theoretical definition comes to be replaced by a statement of the transactions in terms of which it can be demonstrated and the principles for defining these transactions. In this way our general definitions come to be replaced by subsets of elements in an interrelated system, the relationships of which must be understood if consistent definitions are to be maintained. From a still more practical point of view we have to translate even this system, which can be drawn up at the theoretical level, into terms which permit of measurement in the actual world. This again has a more and a less theoretical aspect. The former is concerned essentially with the drawing up of a system the elements of which in principle permit of measurement; the latter with drawing up a system the elements of which can be measured by methods which are in fact available to us in practice.

Thus an accounting structure provides a definite statement of the empirical correlates of the theoretical concepts we find interesting. We cannot proceed in a purely theoretical way because we cannot know until we have investigated the matter whether a given theoretical definition corresponds at all closely to the closest empirical correlate that we can set up. Equally we can-

not proceed in a purely empirical way because in many cases we have no natural and inevitable basis of classification. To proceed empirically, even if we recognize the need to record a transaction, would simply mean that we should accept the empirical correlate of someone else's theoretical definition which might be quite unsuited to our purposes and in any case would not avoid the inevitable element of theory.

II. THE SOCIAL ACCOUNTS AS A CATALOGUE OF INFORMATION NEEDED

The second main function of a social accounting system is to provide a catalogue of the information needed for economic analysis and also a means of collecting this information. While it is right to think of a system of social accounting as composed of the money measures of the transactions which enter into it, it can readily be seen that where possible a measure of quantity and a measure of price appropriate to the transaction can find a place in the system of classification. The systems of social accounting actually presented at the present time are of course in a very highly condensed form, all transactors and transactions being grouped into a comparatively small number of classes. This however is due to the imperfections of available statistical information, and also to the fact that these systems are intended to present a statement of economic structure in as concise a form as possible. The system itself may be elaborated indefinitely by increasing the number of classes of transactor and transaction until each transactor and transaction has a class to itself. The simplified versions at present produced represent the common statistical technique of the reduction of data, but they can easily be elaborated to show the precise relationship between the individual transactions of the system and the aggregates which are presented and found useful in economic analysis.

The help which a system of social accounting can give to the collection of economic information is simply that it provides a set of questionnaires appropriate to each type of transactor which can be used as the basis for a sampling survey of that type of transactor, with the knowledge that the information so obtained will fit in with similar information collected from other types of transactor. By this means we may hope to collect information on all forms of economic transaction on a consistent basis, and also, by the adoption of sampling methods, to reduce

the cost at the same time that we improve the scope of the collection. We also have a means for calculating the sampling error of the estimates that are made and of improving the reliability of these estimates by a full realization of the numerous constraints to which they are subject. Thus each account in our final system will provide one relationship between two subsets of transactions and in a complete system all but one of these will be independent. Secondly, if we can make the system articulated, that is to say arrange that any transaction appearing in one account will also appear by itself elsewhere in the system, then the sampling approach will provide two independent estimates of each element of the system, thereby permitting a further adjustment of the observations and a consequent reduction of error. Thus while it should be possible to reduce the purely sampling error of the estimates to unimportant proportions it must of course be recognized that other sources of error are likely themselves to be important; but these sources of error are equally important in the existing methods of collecting economic information and their probable effect on the sampling design would be to give a preference for the collection of certain information from one type of transactor rather than another. For example, by comparison with national totals it appears that an item such as dividends and interest may be grossly underestimated by a sampling survey of the income of recipients.[1] All that this means however is that it is probably difficult to get truthful answers on the question of the amount of income received in this form from the recipients; but equally obviously it is possible to get reliable information from the businesses which in fact pay out dividends. A sampling survey of the type I have outlined could make use of existing knowledge of the most reliable sources from which to obtain certain information.

III. THE SOCIAL ACCOUNTS AND THE PRESENTATION OF ECONOMIC INFORMATION

The final function of a system of social accounting which I shall consider is the provision of a systematic summary of economic transactions useful for teaching, analysis and policy. Experience seems to show that from a teaching point of view

[1] See, for example, *Family Spending and Saving in Wartime* (Bulletin No. 822, U.S. Department of Labor, 1945), p. 43.

there are great advantages in presenting national income and expenditure estimates and estimates of transactions generally in the form of a simple closed accounting system, because in this way the relationships of the parts to one another are immediately displayed. It is no doubt true that the principles and functions of classification normally adopted nowadays leave something to be desired from the standpoint of the welfare theorist, but this is really a separate question and the same estimates would not be better but simply less intelligible if they were not presented in an accounting form. Similar considerations apply if the question of presenting systems of transactions is considered from the point of view of economic analysis and policy. The analysis of economic change cannot get very far without a clear statement of the relationships between the different classes of transaction. This indeed is the purpose of such familiar economic identities as that income ≡ consumption + saving and that saving ≡ investment. Between these identities and the untransformed equations of the corresponding accounting system there is a many-one relationship; that is to say the equations of an accounting system are simply the formal economic identities written out in a particular way. The familiar identities which I have just mentioned correspond to an extremely simplified accounting system,[1] so that by elaborating this simple system to a realistic degree of complexity we can readily obtain the identities needed to describe an actual economic system in practical terms. Again, from the standpoint of economic policy, interest usually centres around the relationships between transactions rather than around the transactions themselves. For example, the central feature of an anti-inflation policy can be put in the form of the best means to obtain sufficient saving to finance investment without a serious rise in prices. The method of relating government budgetary policy to other factors in the national economic system presupposes that the magnitude of the problem can be gauged by relating items in the government's budget to those in the accounts of the nation as a whole.

[1] For an elaboration of this question see section VI of my article 'Social Accounting, Aggregation and Invariance' which appeared first in *Cahiers du Congrès International de Comptabilité* (1948) and has since been reprinted in French in *Économie Appliquée*, No. 1, January–March 1949, pp. 26–54.

IV. THE ADVANTAGES OF A SYSTEM OF SOCIAL ACCOUNTING

The advantages of a system of social accounting, which have already been set out briefly in an earlier work of mine[1] and in a paper by Messrs. Gilbert, Jaszi, Denison and Schwartz,[2] can now conveniently be summarized under the three different principal functions which I have described above.

1. *Classification of transactions*

(*a*) An accounting approach provides a powerful means of handling the problems of consistency in definitions when we pass from general theoretical definitions to detailed descriptions of their empirical correlates.

(*b*) An accounting approach provides a meeting-place for economic theory and practical measurement. To be successful a classification of transactions must satisfy as far as possible both theoretical and practical criteria at the same time. By means of an accounting approach the practical implications of any desired theoretical system can readily be worked out in detail.

2. *A basis for collecting economic information*

(*a*) An accounting approach indicates what information must be collected and how it must be arranged in order to realize in numerical terms any particular theoretical system capable of such realization.

(*b*) An accounting approach provides a basis for collecting economic information by means of sampling surveys of the different types of transactor. This basis offers the possibility of better coverage, increased accuracy, the estimation of sampling error and reduced cost.

(*c*) An accounting approach enables the most efficient use to be made of the information available by bringing to light the many relationships connecting elements in a system of transactions, thus providing a basis for the adjustment of the observations.

[1] See the appendix to *Measurement of National Income and the Construction of Social Accounts* (League of Nations Studies and Reports on Statistical Methods No. 7, 1947), chapter IX.

[2] See 'Objectives of National Income Measurement: a Reply to Professor Kuznets' in *The Review of Economics and Statistics*, Vol. XXX, No. 3, August 1948, pp. 179–95.

3. *The presentation of information on economic transactions*

(*a*) An accounting approach seems to provide the best means of showing the structure of an economy and in this way contributes to a better understanding of the way in which its parts are related and the way in which it works.

(*b*) From a teaching point of view experience seems to show that an accounting approach provides a better means of describing and explaining national income statistics than any other that has been suggested. It is also the best means of explaining the economic identities which have played such a large part in recent economic literature.

(*c*) In connexion with government policy an accounting approach is particularly useful in forecasting, since an attempt to forecast the elements of an interrelated system puts some restriction on each element since certain equations have to be fulfilled. Of course more restrictions can be put on the elements if anything is known about the way in which the system behaves in addition to its formal properties.

(*d*) In connexion with international comparisons a system of social accounting is helpful in showing how the economic structures of different countries are related and in providing a basis on which the statistical information for different countries can be improved in comparability.

V. ECONOMIC FUNCTIONS AND THE STRUCTURE OF ACCOUNTS

In discussing the criteria of a system of social accounting the important thing is to explain how the constituent transactions are to be defined and the principles on which they are to be classified. In this way we can show how the different transactions are related and also demonstrate the way in which the operational definitions adopted are related to the ideal definitions of theory.

In order to describe succinctly what is taking place in the economic system in terms of transactions it is first necessary to observe what functions such a system performs. The basic functions, production, consumption and adding to wealth, have already been introduced and may be used as the essential features of any system of classifying transactions. Reflection shows that no one transacting entity (or transactor) is concerned simply with one form of activity; rather each transactor is concerned

in principle with all three. Accordingly for each transactor we will set up a system of three accounts. The first account, to be called the operating account, brings together all the transactions of the transactor concerned which are connected with its production or operating activity. By setting off the costs incurred in respect of the sales of goods produced or services rendered against the proceeds of these sales we define in a way which permits of measurement the profit (or income from the productive activity) of the transactor. The second account, to be called the appropriation account, brings together all the transactions of the transactor concerned which are connected with its consumption or non-operating current activity. By setting off the expenses for current (consumption) goods and direct taxation against the operating profit and other forms of income accruing to the transactor, we define in a way which permits of measurement the saving of the transactor. The final account, to be called the resting account, indicates the sources and uses of the capital funds available to the transactor. On the incoming side this account shows the saving brought down from the appropriation account together with any operating provisions such as provision for depreciation brought down from the operating account, and also any new contributed money capital or new borrowing that may have arisen during the period. On the outgoing side there will appear total asset formation in fixed capital and inventories, together with financial items of a capital nature such as lending, security investment, the change in current net indebtedness and the net change in bank and cash balances.

It can be seen in a general way, and will be demonstrated in more detail in the following pages, that this method of arranging the transactions of any transactor accords with the three forms of economic activity mentioned above. The first account brings together all transactions connected with productive activity, and shows the gain to the transactor derived from this. The second account recognizes the fact that the transactor may receive spendable income from sources other than its own productive activity, for example, either as a gift or because of participation in the productive activity of other transactors, and it shows the way in which the total of all these elements of income is distributed between consumption expenditure, transfers to other transactors, including direct taxation payable to the state, and

the net saving of the transactor concerned. Finally, the last account shows the additions to wealth made by the transactor and the means which have been used in financing them.

It should also not be difficult to see that this arrangement accords, broadly speaking, with ordinary accounting notions. In form the operating account here corresponds to the trading account or operating section of the profit and loss account of conventional private accounting. In a similar way the appropriation account here corresponds to the non-operating section of the profit and loss account of private accounting, while the resting account here corresponds to the difference between the opening and closing balance sheets of the transactor. The difference between the economist's and the accountant's approach to these problems lies not so much in any difference in the basic structure of accounts as in the definitions adopted for some of the transactions, notably provision for depreciation and inventory valuation and adjustment, where the entries are not given objectively but have to be estimated on the basis of some principle or convention.

So far I have outlined the position for an individual transactor. Before going on to a detailed discussion of the entries in the accounts of individual transactors it is convenient to notice what will happen if we consolidate accounts of the above form over all types of transactor. If we take a very simple case of a closed economy with no government and with eternally durable capital equipment which does not need to be depreciated, we may say that the incoming side of the first type of account, that is the consolidated operating account for the whole economy, will contain only sales proceeds, arising either from the sale of consumption goods to appropriation accounts, or of capital goods to resting accounts. The outgoing side of this account will show nothing but gains or incomes arising from economic activity, since all purchases of materials and services between operating accounts will disappear on consolidation. Writing the outgoing entries on the left-hand side we have, in the usual Keynesian notation,

$$Y \equiv C + I$$

or, in words, income (or product) equals consumption plus asset formation (or investment). With the same simplifications we can say that the second or appropriation account will contain on the

outgoing side purchases of consumption goods and saving, and on the incoming side income received from economic activity. Any gifts or transfers between different transactors will have disappeared on consolidation. Thus, in the Keynesian notation, we may write for the second account

$$C+S\equiv Y$$

Again for the third or resting account we shall have on the outgoing side asset formation (or investment) and on the incoming side saving. Any lending or borrowing, whether long term or short term, and in whatever form, from one transactor to another, will cancel out on consolidation, and so we may write

$$I\equiv S$$

Since the system I have described is a closed one, only two of the three accounting identities are independent and it will be seen that the three equations above represent the three forms in which the two basic independent Keynesian equations can be written. In other words the Keynesian equations when written down in a certain order represent the relationships between transactions occurring on each of the three forms of account which I have distinguished. Accordingly it would seem, in the simple case at any rate, that whether we look at the matter from the standpoint of the individual transactor or the economy as a whole, whether we look at it from the standpoint of the economist or the accountant, the simple structure of three accounts for each transactor does in fact represent the structure which is adopted in practice. What remains to be discussed reduces either to the principles of defining the entries or to the amount of detail which is to be retained in presenting the system of transactions. Let us consider the last and the more simple problem first.

VI. THE AMOUNT OF DETAIL TO BE RETAINED IN AN ACCOUNTING SYSTEM

This question has two aspects. First, what different transactors are we going to recognize as distinct, and how are we going to group them: second, what subdivision if any are we going to recognize in the transactions between any two accounts of any of the transactors? In classifying transactors we shall obviously want to keep enterprises, households and government

administrative agencies separate, and indeed we may want a good deal of subdivision in each of these main sectors. From a theoretical point of view however it would appear convenient for some purposes to set up a sector for each type of service which is rendered in the economic system, and for which accordingly there is a centre of economic decision. On this basis we should think of the set of accounts for enterprises, households and government administration as being concerned essentially with business services or decisions, household services or decisions and government services or decisions, and to these we should have to add further sectors for labour services or decisions and lending services or decisions. These last two services may be restricted without loss of generality to those rendered to the economy under investigation, since labour and lending services rendered abroad may be consolidated in the account for the rest of the world.

As matters stand today these last two sectors, home labour and lending services, have very little independent existence and are always thought of as consolidated elsewhere. For example, the operating account of labour service is normally thought of as consolidated with the operating account of enterprises; the appropriation account of labour service is thought of as consolidated with the appropriation account of the households in which the labourers live; and the resting account of labour service is not set up because it is assumed that there is no expenditure involved in producing and maintaining labour services. These simplifications however are largely a matter of convenience which dictates that there are no costs in obtaining the earnings of labour, so that the whole of these earnings can be regarded as spendable income, and that there is no capital expenditure which has for its object the provision and maintenance of the capacity of individuals and the community at large to provide labour services.

Thus we end up with five sectors: enterprises, households, government, labour, and lending, with the proviso that the last two may not be of much importance and indeed would essentially be dummies if introduced into contemporary statistical presentations. Within each sector we may desire to make a subdivision on an industrial or regional basis and also, if we think of enterprises as including the enterprises of public authorities, to distinguish in this sector at any rate between private and

public authority enterprise. In the case of households however we may wish to make a classification on the basis of the size of household income. The principle problems involved in making these more detailed classifications depend on the way in which we allocate transactors to industries, to regions and to size groups. The first of these questions at any rate is the subject of an extensive literature, and I do not propose to discuss these problems here.

This brings us to the second aspect of our problem, namely what subdivision shall we need of the transactions themselves? A certain amount of classification will be achieved in that payables from account A to account B will be kept separate from payables from account B to account A, and of course from all payables involving any other account. More however is needed. For example, households buy a great variety of goods and services from retail shops, and if we are to obtain a breakdown of these purchases we must subdivide them by product and not simply lump them together. Again, the government may make a number of different kinds of payment to the operating account of a business. It may on the one hand purchase the products of the business while at the same time giving the business a subsidy. Despite the fact that both these transactions appear as payables from account A to account B in our system we should certainly wish to keep them distinct.

The most important difference between transactions rests on whether they are unilateral, i.e. with no specific economic return, as in the case of a gift or a tax, or bilateral, in the sense that there is such a return, as in the case of a purchase of a good or a service, or of an asset or financial claim. Bilateral transactions can obviously be subdivided into a large number of classes until the final point is reached in which every specific good or service transferred from one transactor to another is recognized as a separate consideration. Unilateral transactions, on the other hand, do not seem in general to require much further subdivision, since the main distinctions which arise are already reflected in the transactions between different pairs of accounts. This is not always the case however and we may wish, for example, to distinguish between different kinds of operating provision made by an enterprise, e.g. provision for depreciation and provision for bad debts, or between different types of taxes payable by an enterprise or an individual.

VII. THE PRINCIPLES OF DEFINING THE ENTRIES IN AN ACCOUNTING SYSTEM

I propose now to return to the more difficult of the two problems mentioned above, namely the principles of defining the entries in the accounting system. The items which we choose to reckon as incomings and outgoings on the production or operating account of any transactor, and the way in which we define these entries, will determine the gain or income from its productive activity. Also, once this gain or profit has been defined, the incomings and outgoings which we show in the consumption or appropriation account, and the way in which they are defined, will determine the saving of the transactor. The treatment of items of these two kinds will entail certain corresponding entries in the resting account which will ensure consistency there.

It might seem at first sight that we could adopt a purely formal approach to questions of this kind. For example, we might say that all goods bought by enterprises and charged to their operating accounts were intermediate goods which would cancel out on consolidation of all operating accounts, while all purchases of goods by households should be classed as final goods and that the latter and only the latter would enter into the national consumption. In fact, however, such a procedure is not entirely satisfactory because there are goods normally purchased by enterprises which are of direct benefit to consumers, while there are also goods conventionally bought by consumers which are solely intended to assist them in their work. Examples of the first kind of good are the coal supplied free to miners and charged to the operating account of the mining company, and clothing supplied to workpeople where it is of such a kind that it can be regarded as a substitute for ordinary clothing and is not of a kind needed in addition to ordinary clothing for the performance of particular tasks. In both these cases it is normally recognized that the employee in fact receives a certain amount of income in kind and an attempt is made to treat the matter as though his actual wage was larger than his money wage by the imputed value of the coal or clothing, while his actual consumption expenditure was larger than his money expenditure by the same sums. The converse case arises where in certain trades it is customary for an employee to provide his own working tools and equipment out of his wages. In this case

we have items such as tools appearing in the consumer's budget which really have no place there, and we attempt to recognize this position by transferring the cost of the tools to the operating account of enterprises employing workmen who provide their own tools and deducting the cost of the tools from the money wages which are paid to them. In this way a readjustment of incomings and outgoings is made between the household account of the workmen and the operating account of their employers, the object of which is to re-define production expenditure and consumption expenditure in a way which more nearly reflects the real position.

If we are not able to devise a purely formal treatment of such items as these, but feel the need to modify the entries which we find in actual accounts we must devise a different approach which will provide us with a guide to the principles on which the modifications are to be made. In the present instance our object is to define the gain from productive activity of an enterprise and its employees taken together. We may do this by going back to the fundamental idea that the income of a transactor (or of several transactors consolidated together) is the maximum value which it can consume during a period and still expect to be as well off at the end of the period as it was at the beginning. On this basis it can be seen that the coal provided free to employees is not a cost of production of the business and its employees taken together and their combined gain must therefore be calculated without deducting the value of this coal as an expense. On the other hand it is equally clear that the tools provided by the employee out of his wage are a cost of the combined productive activity of the business and its employees, and therefore they must be deducted as a business cost in arriving at the combined income of both. An ideal definition of the kind just mentioned provides us with a guide to the meaning we should like to give to income. Our task then is to approximate to this meaning in our actual statistical work.

Having reached a solution along these lines we may devise an accounting structure which will give us a formal distinction of the kind we sought to apply in the first instance. This indeed was the purpose of the suggestion made above that we should set up a system of three accounts, not only for enterprises, households and government administration, but also for labour and lending services as well. By doing this we can credit to the

operating account of labour services the costs to enterprises clearly attributable to the employment of labour, which in the example we are considering will consist of money wages plus the value of coal and clothing received free by the workmen. This effectively is the selling value of the labour services. From this selling value, in order to reach the income or gain of the workmen, it is necessary to deduct any costs which they have incurred, which in the present example would be the value of any tools and equipment which they have to buy out of their wages. The net figure is their income which is available for spending and can be transferred to the appropriation account of labour services.

By setting up the accounts in this way we may be able to see more clearly what we are trying to do and what is involved in attempting to apply in practice the ideal definition of income given above. In many cases however we shall meet with problems to which it seems hardly possible to devise a solution and for which therefore we shall have to fall back on a conventional treatment. A case in point is the cost of the journey to work. The universal practice is to treat this as consumption expenditure if it is paid for by the employee, but as a business cost if for some special reason – e.g. because its premises have had suddenly to be moved as a result of air raids – a business incurs the expense of providing for a time a free transport system for its employees. The difficulty here is to decide what part, if any, of the employee's cost of going to work is an expense which should be debited against his earnings and what part represents spending out of the gain from his work. No means of making this allocation has been devised, and in practice it is assumed that no part of the cost of the journey to work is a business expense. If it were agreed that any allocation of this kind should be made to business expenses it is clear that we should be bound at the same time to reconsider a host of items which are generally considered to be items of final expenditure, and that we should speedily be driven far away from ordinary conceptions of income and consumption. Problems of this kind may however be important if attempts are made to compare communities with very different institutional arrangements – for example, if one wishes to compare the economic position of India or China with that of Britain or the United States of America.

Just as we find it necessary to attach a meaning to gain from

productive activity in order to determine the entries to be shown in the operating account, so we need to attach a meaning to saving to determine the entries to appear in the appropriation account. Saving is usually defined as the excess of income over current outlay. Income has already been defined as the amount which can be spent for consumption in a period without creating the expectation that the transactor will be worse off at the end of the period than he was at the beginning of it, and will include any net sums available for spending in this way transferred from other transactors. It will not include all transfers from other transactors since some of these may not be available for spending in the period.

There remains the problem of defining current expenditure. This will include direct taxes levied on income and other income transfers made by the transactor, together with all consumption expenditure. By consumption expenditure we should like to mean the value of goods and services used up and worn out by the transactor during the period, and we should like to draw a distinction between current and capital expenditure. Only current expenditure, that is to say expenditure the benefit of which is taken up in the period of account, would then be debited against income to yield a figure of saving, and this saving, together with any net borrowing and capital transfers received by the transactor, would finance its net additions to fixed assets and inventories.

In practice this distinction between current and capital expenditure on goods and services is not made along these theoretical lines. What is done in fact is to treat expenditure on land and buildings by final consumers as capital expenditure and to regard the purchase of all other goods and services used for consumption purposes as current expenditure in spite of the fact that many of them have considerable durability. The reason for this is the practical one, that it is not easy to assess a depreciation provision in respect of consumers' durable goods. We should remember however that from a theoretical point of view asset formation is underestimated and consumption overestimated at times when the purchase of durable consumers' goods is increasing.

VIII. THE PRODUCTION (OR OPERATING) ACCOUNT

Let us consider the entries in a production (or operating) account in the light of the theoretical definition of income (or gain) given above. First let us suppose there is no state and consequently no taxes, subsidies or other such transfers. It is a principle of accounting, which I think we all accept, that no income can accrue to an enterprise from current operations, except on the sale of the goods or services which it is its business to produce. On the incoming side of the account we may therefore enter any proceeds from sale or from services rendered. These will not be recorded on a cash basis but will show the sums due to be received (or receivable) under these headings. On the other side of the account we shall show all the costs attributable to the production of the goods sold. These costs will include the value of materials and services purchased from other transactors, and operating provisions set aside by the concern in respect for example of depreciation or bad debts. If we consider the operating account of an enterprise as a consolidation of the operating accounts of the proprietors, together with those who work in the enterprise and lend it money, then all wages, salaries and interest due to be paid will appear as part of the gain; otherwise, if the account relates to the proprietors alone, the wages, salaries and interest will have to be deducted as costs. The former treatment is of course only permissible if the wages, salaries and interest can be assumed to be earned without cost.

There is one further adjustment that has to be made. All the materials purchased and resources expended in processing them may not be matched by sales in the period of account. If more materials are purchased than are used and if more goods are produced than are sold, then the inventory of both materials and finished goods will rise over the accounting period. Any change, up or down, in the inventory over the period will call for an inventory adjustment which, if inventories have risen, we may treat as an addition to selling value or a subtraction from costs incurred. In a world of stable prices the change in the value of inventories (positive or negative) would have to be added to sales proceeds or deducted from costs in order to put the two sides of the account on the same basis.

We have seen above that some adjustment is frequently needed to the figure for wages if it is to represent the gain from labour

services. Apart from such matters the main difficulties encountered in giving effect to the theoretical definition of income arise in the case of the two internal transactions, provisions and inventory adjustment. These problems will now be briefly considered.

Provision for depreciation is probably by far the most important internal provision. From the standpoint of private accounting, the provision to be made each year over the expected life of the asset is calculated on a basis which will yield an accumulation equal to the original cost of the asset at the end of the asset's expected life. Such a calculation based on original cost is intended to preserve the original capital contribution of the proprietors insofar as it is devoted to the purchase of fixed assets. From the standpoint of our theoretical definition of income however such a treatment would not necessarily be adequate under a regime of changing prices, since if income earning power is to be preserved it is essential to ensure that any increased cost of replacing assets shall be provided for. Hence the suggestion has been made by many economists that depreciation provisions should be based on replacement cost. Such provisions might in practice go further than was needed, as would be the case insofar as the depreciation fund was put into investments which themselves rose in value. It is not easy to devise a perfect formula for the calculation of the provision for depreciation implied in the theoretical definition of income; but there seems little doubt that it is possible to get nearer to this concept than does the conventional calculation based on original cost.

The difficulty in making inventory adjustments is again largely a consequence of the instability of prices. The most common accounting treatment requires that inventories be valued at cost or market price, whichever is lower, with the consequence that the inventory adjustment reflects not only the value of the quantitative change in inventories but also an element of price change. To avoid this it is necessary that opening and closing inventories be measured in terms of the same prices, and it has been suggested that the price level to be adopted should be the mean of opening and closing costs. There are however advantages in putting both opening and closing inventories on to a last-cost basis, thereby reflecting the position as it appears in terms of the values at the end of the accounting period.

The excess of the incomings over the outgoings just described

represents the gain from the productive activity of the period and can all be distributed to those participating in the enterprise and spent for consumption purposes without harm to the productive facilities of the enterprise. This description of the entries in the production account is not yet complete however because no account has been taken of the fiscal activities of the state which in most countries are of considerable importance. I refer in particular to the appropriate treatment of taxation, direct and indirect, and subsidies.

The main problem raised by transfers to and from the state is that of deciding which of these transfers should be debited against or credited to the production account. As far as taxation is concerned one answer to this problem is to adopt the usual business convention that those taxes which are assessed on goods and services produced or sold should be debited against the production account, while those taxes assessed on income should be treated as a debit to the appropriation account, since they are not a cost of production, but simply a charge on income, including income from sources other than the production of the transactor concerned when the whole income of the transactor has been ascertained and assessed.

We may approach the question of subsidies in a similar way. We treat as indirect taxes those taxes which add to the cost of the saleable product, and we may define subsidies as sums payable by public authorities with the object of meeting part of the costs of production and assessed either on output or sales or on the input of some important material. Just as indirect taxes tend to raise the prices of the goods on which they are levied, so subsidies will tend to reduce the prices of the goods on which they are granted, since they provide a means of meeting part of the costs of production which do not therefore have to be recovered in the selling price. Thus subsidies may be regarded as negative indirect taxes.

In this sense it will be obvious that not all unilateral payments by government to business enterprises are to be included under the heading of subsidies. Many such payments will be in the nature of relief and should be credited to the appropriation account since their object is not to meet a cost of production but to prevent the producer from starving. This treatment may also be appropriate in the case of government transfers to meet, after the event, such losses as have occurred in a previous period,

since in this case the producer may in effect receive not a grant to meet certain costs but an out-and-out supplement to his income.

In addition to these government grants, which may be regarded as payable into the appropriation account of enterprises, there may be sums paid into the operating account which nevertheless should perhaps not be regarded as subsidies. An example of this is a payment to a producer aimed not at enabling him to reduce his selling price but at enabling him to compete in circumstances where the price is determined by lower-cost competitors. An example of such a payment is the British beet sugar subsidy, the object of which is not to reduce the price of sugar to the British consumer, but to enable the higher-cost British beet sugar producers to stay in business in competition with lower-cost cane sugar competitors abroad. This type of payment is perhaps best treated as a straightforward purchase of goods and services.

As soon as one examines the question of taxes, subsidies and other government grants to business one very soon finds that in practice the position is extremely complicated and that a number of borderline cases arise. These difficulties have led some investigators to wish to get rid of the distinction between direct and indirect taxes and between subsidies and other transfers on the ground that any such distinction must of necessity be arbitrary. I do not agree with this view because I think that the distinction between costs of production and other outgoings can be made in practice in a fairly satisfactory way, and because I think that from the standpoint of economic analysis there are decided advantages in making it. If for example we treat all taxes as appropriation account transfers, then our conception of net product will be made up of all gains to producers arising from their productive effort, plus indirect taxes (minus subsidies). This concept of net product will yield an industrial classification which is very misleading for some purposes since it will give very little idea of the value of resources taken up in each industry, even under normal conditions, when the profit element may be taken as a good indicator of the contribution of enterprise and risk-bearing. The distortion will be particularly great in countries such as the United Kingdom in which indirect taxation is particularly heavy on a comparatively small range of products. We get a much better idea of the proportion of re-

sources devoted to the production of drink and tobacco if we treat indirect taxes and subsidies as distinct from direct taxes and other transfers from government to business, and debit and credit them to the operating accounts of the industries taxed or subsidized. The same argument can be raised if we are interested in the proportion of national resources devoted to any particular purpose such as personal consumption or goods and services used in waging war.

It is natural to discuss this account in terms of business enterprises but reflection will show that an exactly similar account may be set up for each sector of the economy. For example, in the case of households the gross proceeds accruing to the operating account will be derived entirely from an imputed sale to the household in question, covering all the goods and services used to maintain the household. On the outgoing side there will be purchases from business, labour and lending services, and there will also be a depreciation provision in respect of any fixed capital (e.g. an owned house) used by the family, and indirect taxes (e.g. rates on a house occupied by the owner). In such an account there is a place for an operating surplus reflecting the elements of gain from household operations (e.g. the net imputed rent of a house occupied by the owner, and the work of housewives and other members of the family), although in almost all countries this operating surplus is set at zero, households being treated as non-profit-making entities and operating activity connected with the owner occupation of dwellings being included in the operating account of enterprises.

A household may borrow either for the purpose of acquiring an asset or in order to meet current expenditure. In the first case the outgoing side of the household operating account will show a certain cost in respect of the interest on the loan, while in the second the interest due may be charged against the household appropriation account. Since it is usually agreed that interest on consumption loans should not appear in the national income, and since the income from the loan will already appear in the operating surplus of lending services, it is necessary that the imputed sale from the appropriation account of households should be so calculated as to yield a component of the surplus on the operating account equal to the negative of the interest paid on consumption loans. This is exactly parallel to the treatment frequently adopted, e.g. in the British national income White Paper,

of showing the interest on consumption loans by public collective providers as a negative income from property.

The operating account for public collective providers is similar to the one just described for households. It brings together all the costs incurred in the provision of government administrative services, to give an imputed loss equal to the interest on consumption loans raised by public collective providers. The main source of revenue for this account is a transfer from the appropriation account of public collective providers, but in addition to this there will normally be fees and similar sums due from other sectors of the economy, e.g. special payments made by parents under the public education system.

The government is regarded here as the final buyer of all its administrative services, and no attempt is made to distinguish between services organized for the benefit of business and services to final consumers. As a consequence it is likely to happen that certain intermediate services will be included in the total of goods and services bought by public collective providers, but the inclusion of these services in the total of final expenditure will not lead to an overestimate of that total, since their value will be excluded from one of its other components. For example the cost of police services used in controlling traffic will in part be incurred for the benefit of the road transport industry. Under competitive conditions however the road transport industry will not be able to include an allowance for these free services in the price of its product, so that from the social point of view this product will be underestimated by the value of the policemen's services. As a consequence of including these services in final expenditure by public collective providers the omission will be made good though the distribution of final expenditure between its different components will not be correct. The fact that some of the services of which public collective providers are the final buyers are really intermediate in character does not call for any special adjustment in the accounts of public collective providers except in two circumstances. The first of these arises if we wish to reallocate the total value of final expenditure between its different components, so as to obtain, in terms of the above example, the full cost of transporting goods by road, together with the cost of those services organized by public collective providers which benefit final consumers direct. The second arises if we wish to obtain a measure of the real national product

from the final expenditure point of view. In this case we must recognize that much of the time of policemen is given up to assisting the road transport industry and that, to the extent that this is so, we do not want an indicator for policemen's services, but instead require to add their weight to the indicator for road transport services.

It is sometimes thought that a view need be taken as to whether the community really wants the services organized by public collective providers. The example usually given in this connexion is the activity of the central government in preparing and waging war. From the present point of view these services are on exactly the same footing as any other services for which there is an effective demand. For some purposes however it may be desirable to exclude items of this kind in order to see what has been the movement in a more restricted collection of goods and services available for consumption. Such exclusions are mainly interesting in attempts to compare real income. An attempt may be made to rationalize them in terms of the present accounting structure by saying that at certain times the cost of waging war is a part of the cost of producing ordinary consumer goods and that this part is chargeable to the operating accounts of the enterprises producing ordinary consumer goods and is financed by a subsidy from public collective providers. In this way expenditures on the different items involved in waging war would disappear from the ordinary table of final expenditure and their place would be taken by subsidies. As a consequence only ordinary consumers' goods (if any agreement can be reached on the meaning of this term) would appear in final expenditure, but their weight would be increased by subsidies, to be allocated between them on some arbitrary principle, equal to the costs involved in waging war. Only the ordinary consumers' goods would have indicators in the final expenditure table, so that changes in final consumption would be determined solely by their movement and not by the movement in goods and services bought in the process of waging war.

The operating account for labour service shows gross proceeds from the sale of labour made up of cash wages and allowances, the value of income in kind and the value of indirect taxes levied on wages, e.g. employers' contributions to national insurance funds. These employers' contributions then appear as an outgoing on the other side of the labour service operating

account and in fact, in the conventional treatment, are one of the few costs involved in the provision of labour services, another example being the expenditure on tools and equipment paid out of wages. The excess of gross proceeds from selling labour services over the costs involved yields the operating surplus of this part of the economy and is equal to the conventional figure of wages and salaries. By putting the matter in this way we are provided with a convenient account to which to debit any other costs which it may be thought are involved in the provision of labour services. If for example it was thought that part of the cost of the daily journey to work was a cost brought about by the provision of labour services, then the outgoing side of this account would be the appropriate place to put it.

An exactly similar situation arises with lending services, except that it is assumed that the interest received by this group of transactors is obtained without cost, so that the whole of the gross revenue of this operating account can be regarded as the surplus available for spending by the lenders. This account must not be confused with the operating account of banks or other financial intermediaries, but is additional to them. A convenient way to treat these special types of enterprise has already been discussed at length by D. B. Yntema[1] and myself.[2]

It is convenient at this point to consider what operating surplus will emerge if the various accounts are consolidated. If all the accounts except foreign labour and lending services (always included with the rest of the world) are consolidated, the operating surplus derived from the system of accounts I have been describing will be the one conventionally adopted. If the operating surplus of the (home) lending service is termed interest and if the operating surpluses of enterprises, households and public collective providers are termed profits, then the former will include interest on consumption loans while the latter will be reduced by the amount of this interest. If those entries in the operating account of the home lending service which relate to households or public collective providers are consolidated with the operating accounts of households or public collective pro-

[1] See 'National Income Originating in Financial Intermediaries' by D. B. Yntema in *Studies in Income and Wealth*, Vol. 10 (1947), pp. 23–50.

[2] See appendix to *Measurement of National Income and the Construction of Social Accounts* (League of Nations Studies and Reports on Statistical Methods No. 7, 1947), especially pp. 40–41 and 87–90.

viders, then the income generated (apart from interest on loans not for consumption purposes, e.g. mortgage interest) will be zero so far as profits and interest are concerned. The reason is that the operating surplus in the home lending service account will offset the operating losses in the accounts of households or public collective providers. If, again, those entries in the home labour and lending services operating accounts which relate to households and public collective providers are consolidated with the operating accounts of households and public collective providers, then the total income arising on the consolidated account will consist only of wages and salaries paid direct to household and government employees, plus such elements of profit as the surplus on the operation of owner-occupied dwellings, plus interest on loans used to acquire assets and not simply for consumption purposes. Thus the accounting system described here is readily put into the conventional form and reflects the fact that households and public collective providers are normally treated as non-profit-making bodies, in the sense that when their operating accounts are consolidated with the corresponding accounts of those who assist in their activity no income from property emerges apart from the interest on loans used to acquire assets, and the imputed income on such activities as the operation of owner-occupied dwellings.

IX. THE CONSUMPTION (OR APPROPRIATION) ACCOUNT

The consumption (or appropriation) account brings together all those incomings and outgoings which are neither costs nor benefits connected with the productive activity of the transactor (apart of course from the operating surplus) nor are related to a past or future period of account. On the incoming side there appears first of all the operating surplus of the transactor brought down from the operating account, together with all other current incomings such as dividends and interest due and realized capital gains treated as income. The outgoings side of the account shows the distribution of the total of these incomings between different uses. In the case of enterprises it shows the distribution between entrepreneurial withdrawals, dividends (before taxation), direct taxes and the residual item or saving of the transactor. This saving may represent an addition to free reserves or it may simply be a temporary saving such as the

addition to a taxation reserve which is expected to be spent in the following period. In the case of households and public collective providers this account also shows on the outgoing side the sums due in respect of consumption expenditures. In the numerical example described below, the bulk of this expenditure takes the form of an imputed purchase from the operating account of the same transactor, but expenditure on the products of other sectors may also be debited directly to this account. For example, it would be reasonable to debit tourist expenditure abroad direct to the appropriation account of households and not to regard it as part of the cost of maintaining the household services, and the same is true of other consumption expenditures made by individuals within the family, e.g. for meals and drinks away from home, which do not form part of the expense of maintaining household operations. In the case of public collective providers on the other hand it would be more appropriate to treat expenditure abroad as an element in operating costs since this expenditure would in all cases be incurred in the rendering of government services.

The item shown as consumption expenditure should reflect the value of goods used up and worn out for current purposes in the period of account. In fact, however, because of the conventions normally adopted both here and in the purchases of goods and services in the operating accounts of households and public collective providers, consumption expenditure will reflect the purchase of goods for consumption purposes and will take no account either of the possibility of an inventory change in this sector or of the fact that many goods which are included in fact have a life which extends well beyond the period of account. Thus a more perfect system of accounting would recognize the fact that many consumers' durable goods are not consumption goods at all, but are really elements of fixed asset formation and as such should be charged to the resting account. By current convention the only durable consumers' goods regarded in this way are houses, domestic buildings and land, and the principal reason for this exclusive treatment is the difficulty in assessing an appropriate provision for depreciation on the stock of other consumers' durable goods such as motor cars, refrigerators and the like. A more perfect system of accounts would also make allowance for the possibility of an inventory change on the operating accounts of households and public col-

lective providers since it is obvious that the goods purchased by these accounts may not all be transferred to consumption uses in the period of account. Again, the principal reason for the current convention is that information is almost never available about the changes in the stocks held by households and public collective providers, so that the goods bought are regarded as used up in the same accounting period. In the case of households at any rate it seems probable that in fact stock changes are generally small and that this omission is far less important than the failure to treat durable household goods as capital expenditure.

The direct taxes payable out of this type of account and receivable into the corresponding account of public collective providers are direct taxes levied on income, such as profits and excess profits taxes, income tax and surtax. Direct taxes levied on capital, such as capital levies, special contributions and death duties, are treated in the system described here as payable out of and receivable into resting accounts. The only effect of this treatment as compared with the more usual one of treating taxes levied on capital as payable from and receivable into appropriation accounts is that the saving of the private sector is increased by the amount of these taxes while the saving of public collective providers is correspondingly diminished. The treatment suggested here will tend to give a smoother series for private saving. As far as recurrent taxes levied on capital, such as death duties, are concerned, this is perhaps not of much importance. In the case of special contributions and other capital levies, it is perhaps desirable to adopt a definition of private saving which does not fluctuate violently from one year to the next as a consequence of such taxes being levied.

In the case of public collective providers the appropriation account will receive all proceeds from taxation and will be debited with subsidies and all other current transfers such as state pensions, whether contributory or not, and unemployment and health benefits.

The appropriation accounts of both labour and lending services receive the surplus from the operating accounts and distribute this to those providing the services in the form of wages, salaries or interest.

X. THE ADDING TO WEALTH (OR RESTING) ACCOUNT

This account brings together all capital transactions and may be regarded, looking at the matter from the standpoint of business accounting, as an account in which costs, the benefit from which extends over several periods of account, rest until they are finally written off out of revenue. On the incoming side saving is brought down from the appropriation account and internal provisions for depreciation, bad debts, etc. from the operating account. To these may be added various other forms of capital incomings, such as sums received by the private sector of the economy in respect of war damage claims and post-war tax refunds, and the proceeds of direct taxes levied on capital in the case of public collective providers.

On the outgoings side of the account there will appear total fixed asset formation, including net purchases of existing assets, together with the change in inventories brought down from the operating account. Various capital transfers such as post-war tax refunds which appear on the incoming side of this account in the case of the private sector will of course appear on the outgoing side in the case of public collective providers. The remaining items appearing in this account are of a financial nature and may be conveniently entered on the outgoing side. They comprise all forms of net lending, net change in the purchase of securities, the change in current net indebtedness, and the net change in bank and cash balances.

Reviewing the items in this type of account we can see that they are simply those which normally appear on a balance sheet, although the basis of valuation will in some cases be different, but are shown here as the flow taking place between two balance sheet dates.

XI. A NUMERICAL EXAMPLE BASED ON THE BRITISH OFFICIAL ESTIMATES FOR 1948: THE FIRST FORM OF ACCOUNTS AND THEIR CONSOLIDATION

The way in which the foregoing ideas work out in practice can best be seen from a numerical example. The following statement, which relates to the United Kingdom in 1948, is set out in two ways: first with separate sectors for labour service, home lending service and foreign lending service, and second (in section XIII below) with the appropriate entries in the accounts of these

sectors consolidated with those in the accounts of enterprises, households and public collective providers or, in the case of the foreign lending service, with the account of the rest of the world. The first is helpful as a reminder that we may in principle set costs against the proceeds of selling labour or lending services just as we do against the proceeds of selling the services of enterprises, and if we did we should of course change the definition of the national income. This method of setting out the accounts also has the advantage that, as in ordinary accounts, the purchases of labour and lending services are debited against operating accounts so that the balance on the operating account is the gain or profit accruing to the proprietors. The second method is helpful in that it brings together in each case all factors of production which are contributing to the output of a given actual economic entity. On this method the operating surplus of each sector is equal to its net product at factor cost, the product concept most useful from the standpoint of an industrial classification of total product. Two methods of presenting the system have also been used. The first consists in setting out the transactions in a series of accounts on lines similar to those adopted in ordinary business accounting and in the British national income White Papers.[1] The second form of presentation uses the system of double columns for each account and shows different types of transaction in different rows across the page. An advantage of this sytem is that by adding additional columns for each sector to take balances on the different accounts it is possible to show the individual transactions and the national aggregates together. The former is more convenient in presenting estimates for a series of years while the latter is more convenient in presenting the estimates for a single year.

In the following accounts brackets have been put round all items which cannot be obtained in their entirety from Cmd. 7649. The following section explains the relationship of the items given here to those in Cmd. 7649 and indicates briefly the steps that have been taken to ensure that the estimates of items not shown in the White Paper are nevertheless consistent with it.

[1] The examples which follow are based on the figures given in *National Income and Expenditure of the United Kingdom, 1946 to 1948* (Cmd. 7649, April 1949).

TRANSACTIONS IN THE BRITISH ECONOMY IN 1948

(FIRST FORM)
(£ million)

Business Enterprises

(1) OPERATING ACCOUNT

1. Purchases from:			6. Sales to operating accounts:		
(a) Public collective providers (fees)	(65a)	(80)	(a) Households	(33a)	(7,563)
(b) Labour service	(97a)	5,209	(b) Public collective providers	(61a)	(825)
(c) Home lending service	(105a)	(97)	7. Sales to resting accounts:		
(d) Rest of the world	(126a)	1,938	(a) Enterprises	(23)	(1,486)
2. Depreciation provision	(28)	(681)	(b) Households	(53)	(75)
3. Indirect taxes	(73a)	(1,926)	(c) Public collective providers	(82)	429
4. Operating surplus	(18)	(3,203)	8. Sales to the rest of the world	(119)	2,109
			9. Value of the change in inventories	(24)	132
			10. Subsidies	(69)	515
5. Total payable		(13,134)	11. Total receivable		(13,134)

(2) APPROPRIATION ACCOUNT

12. Dividends to:			18. Operating surplus	(4)	(3,203)
(a) Rest of the world	(128)	(62)	19. Interest from foreign lending service	(115a)	(32)
(b) Households	(48)	(658)	20. Dividends from rest of the world	(122a)	(84)
(c) Public collective providers	(77)	(5)	21. Interest from home lending service	(107b)	(160)
13. Transfers to public collective providers by public authority enterprises	(78)	(44)			
14. Entrepreneurial withdrawals by:					
(a) Households	(49)	(1,645)			
(b) Public collective providers	(79)	(5)			
15. Direct taxes on income	(80a)	505			
16. Saving	(29)	555			
17. Total payable		(3,479)	22. Total receivable		(3,479)

(3) RESTING ACCOUNT

23. Fixed asset formation	(7a)	(1,486)	28. Depreciation provision	(2)	(681)
24. Value of the change in inventories	(9)	132	29. Saving	(16)	555
25. Compensation to doctors and dentists	(84)	−3	30. War damage claims	(85a)	(115)
26. Lending and debt reduction:			31. Excess profits tax post-war refunds	(86)	15
(a) Households	(55a)	(−177)			
(b) Public collective providers	(87a)	(−175)			
(c) Rest of the world	(124a)	(103)			
27. Total payable		(1,366)	32. Total receivable		(1,366)

Households and Non-profit-making Bodies

(4) OPERATING ACCOUNT

33. Purchases from:			38. Sales to appropriation account	(40a)	7,907
(a) Enterprises	(6a)	(7,563)			
(b) Public collective providers (fees)	(65b)	(30)			
(c) Labour service	(97b)	78			
(d) Home lending service	(105b)	(35)			
34. Depreciation provision	(57)	(34)			
35. Indirect taxes	(73b)	(88)			
36. Operating surplus	(44)	(79)			
37. Total payable		7,907	39. Total receivable		7,907

(5) APPROPRIATION ACCOUNT

40. Purchases from:			44. Operating surplus	(36)	(79)
(a) Operating account	(38)	7,907	45. Interest from foreign lending service	(115b)	(20)
(b) Rest of the world	(126b)	97	46. Dividends from rest of the world	(122b)	(16)
41. Direct taxes on income	(80b)	1,278	47. Interest from home lending service	107c)	(440)
42. Saving	(58)	310	48. Dividends from enterprises	(12b)	(658)
			49. Entrepreneurial withdrawals	(14a)	(1,645)
			50. Wages and salaries	(99)	(6,071)
			51. Transfers from public collective providers	(70)	663
43. Total payable		9,592	52. Total receivable		9,592

(6) RESTING ACCOUNT

53. Fixed asset formation	(7b)	(75)	57. Depreciation provision	(34)	(34)
54. Direct taxes on capital	(92)	214	58. Saving	(42)	310
55. Lending and debt reduction:			59. War damage claims	(85b)	(35)
(a) Enterprises	(26a)	(177)			
(b) Public collective providers	(87b)	(−87)			
56. Total payable		(379)	60. Total receivable		(379)

Public Collective Providers

(7) OPERATING ACCOUNT

61. Purchases from:			65. Fees from:		
(a) Enterprises	(6b)	(825)	(a) Enterprises	(1a)	(80)
(b) Labour service	(97c)	935	(b) Households	(33b)	(30)
(c) Home lending service	(105c)	45	66. Sales to appropriation account	(68a)	1,421
(d) Rest of the world	(126c)	154			
62. Depreciation provision	(89)	110			
63. Operating surplus	(74)	−538			
64. Total payable		(1,531)	67. Total receivable		(1,531)

(8) APPROPRIATION ACCOUNT

68. Purchases from:			73. Indirect taxes from:		
(a) Operating account	(66)	1,421	(a) Enterprises	(3)	(1,926)
(b) Home lending service	(105d)	538	(b) Households	(35)	(88)
69. Subsidies	(10)	515	(c) Labour service	(94)	151
70. Transfers to households	(51)	663	74. Operating surplus	(63)	−538
71. Saving	(90)	392	75. Interest from foreign lending service	(115c)	(10)
			76. Interest from home lending service	(107d)	(55)
			77. Dividends from enterprises	(12c)	(5)
			78. Transfers to public collective providers from public enterprises	(13)	(44)
			79. Entrepreneurial withdrawals	(14b)	(5)
			80. Direct taxes on income from:		
			(a) Enterprises	(15)	505
			(b) Households	(41)	1,278
72. Total payable		3,529	81. Total receivable		3,529

(9) RESTING ACCOUNT

82. Fixed asset formation	(7c)	429	89. Depreciation provision	(62)	110
83. Net purchase of existing assets	(121)	−45	90. Saving	(71)	392
84. Compensation to doctors and dentists	(25)	3	91. Gifts under the Economic Recovery Programme	(123)	(125)
85. War damage claims to:			92. Direct taxes on capital	(54)	214
(a) Enterprises	(30)	(115)			
(b) Households	(59)	(35)			
86. Excess profits tax post-war refunds	(31)	15			
87. Lending and debt reduction:					
(a) Enterprises	(26b)	(175)			
(b) Households	(55b)	(87)			
(c) Rest of the world	(124b)	27			
88. Total payable		(841)	93. Total receivable		(841)

Labour Service

(10) OPERATING ACCOUNT

94. Employers' contributions to national insurance	(73c)	151	97. Sales to operating accounts:		
95. Operating surplus	(101)	6,071	(a) Enterprises	(1b)	5,209
			(b) Households	(33c)	78
			(c) Public collective providers	(61b)	935
96. Total payable		6,222	98. Total receivable		6,222

(11) APPROPRIATION ACCOUNT

99. Wages and salaries	(50)	6,071	101. Operating surplus	(95)	6,071
100. Total payable		6,071	102. Total receivable		6,071

(12) RESTING ACCOUNT

(In this example there are no entries in this account)

Home Lending Service

(13) OPERATING ACCOUNT

103. Operating surplus	(109)	(715)	105. Revenue from loans to:		
			(a) Enterprises	(1c)	(97)
			(b) Households	(33d)	(35)
			(c) Public collective providers' operating account	(61c)	45
			(d) Public collective providers' appropriation account	(68b)	538
104. Total payable		(715)	106. Total receivable		(715)

(14) APPROPRIATION ACCOUNT

107. Interest to:			109. Operating surplus	(103)	(715)
(a) Rest of the world	(127)	(60)			
(b) Enterprises	(21)	(160)			
(c) Households	(47)	(440)			
(d) Public collective providers	(76)	(55)			
108. Total payable		(715)	110. Total receivable		(715)

(15) RESTING ACCOUNT

(In this example there are no entries in this account)

Foreign Lending Service

(16) OPERATING ACCOUNT

111. Operating surplus	(117)	(62)	113. Revenue from loans to rest of the world	(120)	(62)
112. Total payable		(62)	114. Total receivable		(62)

(17) APPROPRIATION ACCOUNT

115. Interest to:			117. Operating surplus	(111)	(62)
(a) Enterprises	(19)	(32)			
(b) Households	(45)	(20)			
(c) Public collective providers	(75)	(10)			
116. Total payable		(62)	118. Total receivable		(62)

(18) RESTING ACCOUNT

(In this example there are no entries in this account)

Rest of the World

(19) CONSOLIDATED ACCOUNT

119. Purchases from United Kingdom enterprises	(8)	2,109	126. Sales to United Kingdom:		
120. Interest to United Kingdom	(113)	(62)	(a) Enterprises	(1d)	1,938
121. Net purchase of existing assets from United Kingdom	(83)	45	(b) Households	(40b)	97
122. Dividends to United Kingdom:			(c) Public collective providers	(61d)	154
(a) Enterprises	(20)	(84)	127. Interest from United Kingdom	(107a)	(60)
(b) Households	(46)	(16)	128. Dividends from United Kingdom	(12a)	(62)
123. Gifts to United Kingdom under Economic Recovery Programme	(91)	(125)			
124. Lending and debt reduction:					
(a) British enterprises	(26c)	(−103)			
(b) British public collective providers	(87c)	(−27)			
125. Total payable		2,311	129. Total receivable		2,311

The foregoing accounts are set out in the first of the two diagrams at the end of this report. In that version a set of consolidated accounts is given for enterprises, households, public collective providers, labour service and home lending service. These consolidated accounts are given in the conventional form below.

(20) CONSOLIDATED OPERATING ACCOUNT
(excluding Foreign Lending Service)

130.	Purchases from rest of the world by:			135.	Sales to rest of the world	2,109
	(a) Enterprises	1,938		136.	Sales to resting accounts	1,990
	(b) Public collective providers	154		137.	Sales to appropriation accounts by:	
			2,092		(a) Households	7,907
131.	Depreciation provision by:				(b) Public collective providers	1,421
	(a) Enterprises	(681)			(c) Home lending service	538
	(b) Households	(34)				9,866
	(c) Public collective providers	110		138.	Value of the change in inventories	132
			825	139.	Subsidies	515
132.	Indirect taxes (including employers' contributions to national insurance) by:					
	(a) Enterprises	(1,926)				
	(b) Households	(88)				
	(c) Labour service	151				
			2,165			
133.	Operating surplus of:					
	(a) Enterprises	(3,203)				
	(b) Households	(79)				
	(c) Public collective providers	−538				
	(d) Labour service	6,071				
	(e) Home lending service	(715)				
			9,530			
134.	Total payable		14,612	140.	Total receivable	14,612

(21) CONSOLIDATED APPROPRIATION ACCOUNT
(excluding Foreign Lending Service)

141. Purchases from operating account by:			148. Indirect taxes		2,165
(a) Households	7,907		149. Operating surpluses		9,530
(b) Public collective providers	1,959		150. Interest from foreign lending service to:		
		9,866	(a) Enterprises	(32)	
142. Purchases from rest of the world (by households)		97	(b) Households	(20)	
143. Subsidies		515	(c) Public collective providers	(10)	
144. Interest to rest of the world		(60)			(62)
145. Dividends to rest of the world		(62)	151. Dividends from rest of the world to:		
146. Saving by:			(a) Enterprises	(84)	
(a) Enterprises	555		(b) Households	(16)	
(b) Households	310				(100)
(c) Public collective providers	392				
		1,257			
147. Total payable		11,857	152. Total receivable		11,857

(22) CONSOLIDATED RESTING ACCOUNT
(excluding Foreign Lending Service)

153. Fixed asset formation by:			158. Depreciation provisions	825
(a) Enterprises	(1,486)		159. Saving	1,257
(b) Households	(75)		160. Gifts under the Economic Recovery Programme	(125)
(c) Public collective providers	429			
		1,990		
154. Net purchase of existing assets		−45		
155. Value of the change in inventories		132		
156. Lending to rest of the world by:				
(a) Enterprises		(103)		
(b) Public collective providers		(27)		
157. Total payable		(2,207)	161. Total receivable	(2,207)

XII. NOTES ON THE DERIVATION OF THE FIGURES

The following notes show the relationship between the items in the above system of accounts and the estimates given in *National Income and Expenditure of the United Kingdom*, 1946 *to* 1948 (H.M.S.O., April 1949, Cmd. 7649). In certain fields, notably the treatment of interest and dividends, of owner-occupied dwellings and of lending and debt reduction a considerable amount of additional estimation has been needed, though most of this disappears on consolidation. Estimates which cannot be derived from the White Paper are shown in brackets and it must be emphasized that these additional entries have been guessed or estimated very roughly. I have chosen a real example because I think this is more interesting and instructive than a constructed one, but the system given here is only an example and does not pretend to accuracy in the estimates not available in the White Paper.

The individual items have been derived as follows. The references are to the White Paper tables and entries. Thus 14(7.a) means item 7.a of table 14 of Cmd. 7649.

1.a. Estimated. A sum corresponding to this item together with 33.b below is netted off the estimate of public authority expenditure on goods and services as given in Cmd. 7649.

1.b. 14(7.a)+25(2)−17(30.a+30.c).

1.c. Guessed. Apart from the debt interest of public collective providers interest is not distinguished from profit in Cmd. 7649. The estimate shown here is intended to represent interest on borrowed money and does not include imputed interest on money capital supplied by the proprietors or accruing from business saving ploughed back into the enterprise in which it arises. Quite apart from this point it must be recognized that, while the legal distinction between interest and profit is fairly clear, the economic distinction may not be.

1.d. 14(4).

2. This item and the next could be derived from Cmd. 7649, and the explanation of certain other items given here would be simpler, were it not for the fact that the operation of owner-occupied dwellings is here treated as part

of household operations. The following entries have been assumed for the operating account of owner-occupied dwellings which is included in the operating account for households.

(£ million)

1. Home lending service (mortgage interest)	35	6. Imputed rent	236
2. Depreciation provision (repairs out of this provision are charged to resting account)	34		
3. Indirect taxes (rates)	88		
4. Operating surplus	79		
5. Total payable	236	7. Total receivable	236

The depreciation provision charged to enterprises (681) plus the similar item in the above table (34) add to 715, the figure shown in 14(6).

3. This item is derived thus:

	£m.
Indirect taxes (including employers' contributions) paid by enterprises, 14(5)	2,142
less Employers' contributions, 25(2)−17(30.a+30.c)	−128
less Rates on owner-occupied dwellings	−88
	1,926

4. This item is derived thus:

	£m.
Payments by enterprises to factors of production other than labour, 14(7.b to e)	3,564
less Interest (1.c above)	−80
less Mortgage interest on owner-occupied dwellings	−35
less Operating surplus on owner-occupied dwellings	−79
less Part of increase in inventories due entirely to price increases (Cmd. 7649, p. 17)	−150
	3,220

The last item mentioned represents one of the two differences between the concept of profit, and therefore of national income, adopted here and that adopted in the White Paper. On the latter basis the change in the value of inventories will contribute to profit and the national income. On the basis used here the operating account is credited with a smaller sum intended to represent the value of the physical change in inventories, thus ensuring that profits and the national income are not affected by the mere fact that opening inventories are valued differently from closing inventories.

6.a. 14(1.a) *less* estimated gross rents of owner-occupied dwellings *less* fees estimated to have been paid by households to public collective providers.

6.b. 14(1.b) *plus* all fees estimated to have been paid to public collective providers.

7.a. This item is derived thus:

	£m.
Fixed asset formation, 2(3.a)	1,990
less Fixed asset formation of public collective providers, 18(46.b)	—429
less Fixed asset formation of owner-occupiers of dwellings	—75
	1,486

7.b. See last item above.

7.c. 18(46.b).

8. 14(1.d)+2(3.d) *less* £45 million. The addition of the second item ensures that as far as possible British exports are valued on a receivable basis and that British companies operating abroad are treated as a part of the rest of the world. See Cmd. 7649, p. 17. The final deduction, £45 million, is in respect of purchases of buildings and equipment by the Government of India under the Agreement of July 1948. In Cmd. 7649 this item is treated as a reduction in British inventories and as an export by enterprises. Here it is treated as a purchase of existing assets by the rest of the world from public collective providers.

9. 2(3.b+3.c) *less* £150 million (see note to item 4 above) in respect of that part of the increase in the value of inventories due entirely to price increases and *plus* £45 million for the reason indicated in the preceding note.

10. 14(2).

12. The assumptions made in allocating rent, interest and dividends are complicated and highly uncertain. The following table shows at the head of each column the type of payable and the sector debited, and at the side of each row the sector credited.

(£ million)

		E			H		PCP	RW		
		R	I	D	R	I	I	I	D	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
E	(1)	80	15	—	0	35	10	32	84	356
H	(2)	266	40	658	79	0	400	20	16	1,479
PCP	(3)	5	22	5	0	0	33	10	0	75
RW	(4)	0	20	62	0	0	40	—	—	122
Total	(5)	351	97	725	79	35	583	62	100	2,032

Apart from the row and column of totals this table contains $4 \times 8 = 32$ entries. Of these the three marked '—' are irrelevant, thus reducing the effective total to 29, while eight may plausibly be assumed to be zero, thus further reducing the total to 21. The White Paper provides seven independent equations connecting the items in the table which further reduce the degrees of freedom of the table to 14. If we denote the item in the i^{th} row and j^{th} column of the table by a_{ij} then we may take the equations

(1) From 14(7.c)

$$\sum_i a_{i1} + \sum_i a_{i4} = 430$$

(2) From 15(10)

$$a_{11} + a_{16} + a_{17} + a_{18} = 306$$

(3) From 15(13.a+13.b) *plus* £17 million local authority trading service interest

$$a_{22} + a_{23} + a_{32} + a_{33} + a_{42} + a_{43} = 807$$

(4) From 16(19)

$$\sum_j a_{2j} = 1{,}479$$

(5) From 15(12) and 17(31.a)

$$\sum_j a_{3j} = 75$$

(6) From 17(31.b) *less* £17 million local authority trading service interest

$$\sum_i a_{i6} = 583$$

(7) From 19(50)

$$\sum_j a_{4j} = 122$$

The White Paper also provides an eighth equation:

(8) From 19(53)

$$\sum_i a_{i7} + \sum_i a_{i8} = 162$$

but this is not independent since it is known that total payables are equal to total receivables.

The fourteen items which have been roughly estimated are a_{11}, a_{12}, a_{15}, a_{17}, a_{22}, a_{24}, a_{27}, a_{28}, a_{31}, a_{32}, a_{33}, a_{37}, a_{42} and a_{46}. Many of these items probably are fairly small as has been assumed here. In others however the margin of error may be considerable. On this basis the remaining seven items, mostly rather large, are determined by the constraints.

13. 15(12).

14.a. 14(7.b)+a_{21}.

14.b. a_{31}.

15. 15(14.a).

16. 15(14.b+15.a+15.b) *less* £150 million in respect of inventory adjustment. See note to item 4 above.

19. See note to item 12.

20. See note to item 12.

21. See note to item 12.

25. The negative of 23(36). The compensation paid to doctors and dentists in respect of the goodwill of their practices is treated as the purchase of an existing intangible asset

by public collective providers and as a negative purchase by enterprises, which include individuals and partnerships engaged in professional practice.

26. Not very much is known about lending and borrowing beyond the net lending (including debt reduction) of each sector and some details of the position of public collective providers. The following table shows the guesses made. Lending appears in the columns and borrowing in the rows yielding an anti-symmetric matrix.

(£ million)

		E (1)	H (2)	PCP (3)	RW (4)	Total (5)
E	(1)	0	177	175	−103	249
H	(2)	−177	0	87	0	−90
PCP	(3)	−175	−87	0	−27	−289
RW	(4)	103	0	27	0	130
Total	(5)	−249	90	289	−130	0

In this table there are six elements to be estimated. Given the assumptions already made about owner-occupiers, the division of war damage claims met between enterprises, households and public collective providers (see note to item 30 below), and an estimate of £125 million for gifts (as opposed to loans) under the Economic Recovery Programme, the marginal totals are known, as residuals in the resting accounts, yielding three independent constraints and leaving three degrees of freedom in the table.

The first step in filling in the table is to estimate the entries for public collective providers. This has been done by first rearranging, with the aid of *United Kingdom Balance of Payments, 1946 to 1948 (No. 2)* (H.M.S.O., March 1949, Cmd. 7648), the figures given in table 30 of Cmd. 7649 adding figures for local authorities and national insurance funds and subtracting figures for public enterprises.

The negative of item 30(29) of Cmd. 7649, representing net lending and debt repayment by the central government, may in part be allocated to sectors as follows:

	£ million	Entries in Cmd. 7649	Entries in Cmd. 7648
1. Repayment of Canadian government interest-free loan	16	−30(16)	IV(9) *less* £1 million
2. Repayment of R.F.C. loan.	8	−30(17)	
3. Fall in sterling liabilities	211		−IV(17)
4. *less* Drawings on U.S. and Canadian government lines of credit	−87	−30(18)	−V (columns 3 and 4)
5. *less* South African gold loan	−80	−30(19)	−V (column 7)
6. *less* Net drawings on I.M.F.	−9	−30(20)	−V (column 5)+IV.8
7. *less* Loan under E.R.P.	−32	Part of −30(21+23)	Part of −V (column 8)
8. Net lending and debt reduction to the rest of the world (total, items 1–7)	27		
9. Advances to the National Coal Board	31	−30(26)	
10. Advances under the Cotton (Centralised Buying) Act	46	−30(27)	
11. Advances under the Overseas Resources Development Act	18	−30(28)	
12. Lending to publicly controlled enterprises, etc. (total, items 9–11)	95		
13. Net lending and debt reduction to Local Authorities	243	−30(25)	
14. Net lending and debt reduction to National Insurance Funds	−115	−30(10)	
15. Other net lending and debt reduction	310		
16. Total net lending and debt reduction by the central government (total, items 8 and 12–15)	560		
17. *less* Gift under E.R.P.	−125	Part of −30(21+23)	Part of −V (column 8)
18. Total as shown in Cmd. 7649	435	−30(29)	

Net lending and debt reduction by the central government other than to the rest of the world, publicly controlled enterprises, etc., local authorities and national insurance funds is thus shown to be about £310 million. To this must be added net lending, other than to the central government, by local authorities and national insurance funds, and from it must be deducted net lending, which can be calculated as the excess of capital

receivables over asset formation, by government trading services. The calculation is as follows:

	£ million		Entries in Cmd. 7649
1. Other net lending and debt reduction by:			
a. Central government	310		
b. Local authorities	22		− 30(25) − 27(13) + £11 million in respect of war damage claims met in respect of assets held by local authority rate fund services not shown in Cmd. 7649
c. National insurance funds	−10		
		322	
2. *plus* Gross fixed asset formation by government trading services:			
a. Central government	26		24(44.a)
b. *Local authorities*	28		27(15.a)
		54	
3. *less* Depreciation provision on above		−24	−{24(41)+27(12) −17(35)}
4. *less* Saving by public enterprises, including additions to tax reserve		—	−15(15.b)−part of 15(14.b)
5. *plus* Increase in central government inventories		27	24(45)
6. *less* Sales of surplus stores other than buildings and equipment sold to the Government of India		−212	24(46)+£45 million
7. Other net lending and debt reduction by public collective providers		167	

The entries in the first table of this note, denoted by b_{ij}, have been filled in as follows. The item $b_{43} = -b_{34}$ appears as item 8 in the second table. Item b_{24} is assumed to be zero, thus enabling b_{14} to be derived by using one of the constraints. The sum $b_{13}+b_{23}$ is equal to the sum of item 12 (£95 million) in the second table and item 7 (£167 million) in the third table. To obtain b_{13} we must take the £95 million of advances by the central government to public enterprises and add an amount, x say, to represent other net lending and debt reduction by public

collective providers to enterprises. Since no information is available about x it has been put arbitrarily at £80 million, thus yielding $b_{13} = -b_{31} = £175$ million, and hence $b_{12} = -b_{21} = £177$ million.

The entries in the tables should be clear from the references except perhaps for item 4 in the third table, representing the saving of public enterprises including additions to tax reserve. This table will only balance if the total incomings into the resting account of public enterprises are estimated in a consistent way. In Cmd. 7649 no information is given about the share of public enterprises in additions to tax reserves, excess profits tax refunds and war damage claims. It is assumed here that their share in these items is £5 million in the case of the first and nil in the second and third.

30. 23(34) *less* £35 million assumed to be payable to households and *less* £11 million assumed to be payable to public collective providers (local authority rate fund services).

31. 23(35).

33.a. 16(22.c) *less* the amount (£236 million) assumed to be the gross rental, including rates, imputed to the owner-occupiers of dwellings, and *less* a further amount (£30 million: see the next item) assumed to be payable as fees by households to public collective providers.

33.b. Estimated.

33.c. 16(22.a+22.b).

33.d. Mortgage interest. See note to item 2.

34. See note to item 2.

35. See note to item 2.

36. See note to item 2.

38. 16(22.a+22.b+22.c).

40.b. 16(23).

41. 16(24.a).

42. 16(24.b+25+26). In this system direct taxes on capital have been charged to the resting account.

45. See note to item 12.

46. See note to item 12.
47. See note to item 12.
48. See note to item 12.
50. 16(17.a+17.b+17.c).
51. 16(20).
54. 16(24.b).
55. See note to item 26.
59. See note to item 30.
61.b. 17(34+36).
61.c. Local authority debt interest incurred in respect of capital expenditure on rate fund services. This represents a reversion to the treatment of previous White Papers and is adopted here because the loans in respect of which this interest is paid are certainly not consumption loans but are to finance capital expenditure. No doubt a part of the national debt is in the same position but it is not known how much, nor might it be possible to answer this question since, unlike local authorities, the central government does not distinguish between current and capital expenditure and does not finance one out of taxes and income from property and the other from loans. Thus there seems little chance of subdividing the national debt between consumption and other loans, and the interest on it has therefore to be put in one class or the other. It will be seen that this problem is peculiar to interest payable by non-profit-making bodies since in the case of enterprises the total income generated is independent of the amount of interest paid.
61.d. 17(33.b).
62. 17(35).
63. 17(31.b)+£45 million. See note to item 61.c. This item ensures that no income from property is generated in the economy as a whole in respect of the interest payable by public collective providers on their consumption loans.
66. 17(33+34+35+36) *plus* £45 million *less* £555 million here charged directly to the appropriation account. See notes to items 61.c and 63.

68.b. The negative of 17(31.b) *less* £45 million. This item represents the interest payable by public collective providers on their loans.

71. 17(38.b+39−29).

73.c. 25(2).

75. See note to item 12.

76. See note to item 12.

79. Represents net rents accruing to public collective providers. See note to item 12.

82. 18(46.b).

87. See note to item 26.

107.a. See note to item 12.

113. See note to item 12.

XIII. THE SECOND FORM OF ACCOUNTS

In this section the sectors used in the first form of accounts have been reduced in number by consolidating the entries in the accounts for labour and home lending services with those in one or other of the remaining sectors. For example the entries in the labour service accounts relating to the employees are consolidated with the entries in the set of accounts for enterprises themselves. The only effects of this consolidation are to add the figure for the employers' contributions to national insurance in respect of the employees of enterprises to the estimates of indirect taxes paid by enterprises, and to increase the operating surplus of enterprises by the net gain to their employees. In this version the sector enterprises relates to those providing labour and lending services to enterprises as well as to the proprietors.

The consolidated accounts for this version are the same as those given at the end of section XI and accordingly are not reproduced again. This form of accounts is set out in the second of the two diagrams at the end of this paper.

TRANSACTIONS IN THE BRITISH ECONOMY IN 1948

(SECOND FORM)

(£ million)

Business Enterprises

(1) OPERATING ACCOUNT

1. Purchases from:			6. Sales to operating accounts of:		
(a) Public collective providers	(71a)	(80)	(a) Households	(37a)	(7,563)
(b) Rest of the world	(110a)	1,938	(b) Public collective providers	(66a)	(825)
2. Depreciation provision	(32)	(681)	7. Sales to resting accounts of:		
3. Indirect taxes (including employers' contributions to national insurance)	(82a)	(2,054)	(a) Enterprises	(27)	(1,406)
4. Operating surplus	(22)	(8,381)	(b) Households	(58)	(75)
			(c) Public collective providers	(91)	429
			8. Sales to rest of the world	(103)	2,109
			9. Value of the change in inventories	(29)	132
			10. Subsidies	(75)	515
5. Total payable		(13,134)	11. Total receivable		(13,134)

(2) APPROPRIATION ACCOUNT

12. Interest to rest of world	(111a)	(20)	22. Operating surplus	(4)	(8,381)
13. Dividends to rest of the world	(112)	(62)	23. Interest from rest of the world	(105a)	(32)
14. Interest to:			24. Dividends from rest of the world	(106a)	(84)
(a) Households	(52a)	(40)	25. Interest from:		
(b) Public collective providers	(85)	(22)	(a) Households	(45)	(35)
15. Dividends to:			(b) Public collective providers	(77a)	(110)
(a) Households	(53)	(658)			
(b) Public collective providers	(86)	(5)			
16. Transfers to public collective providers by public authority enterprises	(87)	(44)			
17. Entrepreneurial withdrawals by:					
(a) Households	(54)	(1,645)			
(b) Public collective providers	(88)	(5)			
18. Wages and salaries	(55a)	5,081			
19. Direct taxes on income	(89a)	505			
20. Saving	(33)	555			
21. Total payable		(8,642)	26. Total receivable		(8,642)

(3) RESTING ACCOUNT

27. Fixed asset formation	(7a)	(1,486)	32. Depreciation provision	(2)	(681)
28. Compensation to doctors and dentists (net purchases of existing assets)	(93)	—3	33. Saving	(20)	555
29. Value of the change in inventories	(9)	132	34. War damage claims	(94)	(115)
30. Lending and debt reduction:			35. Excess profits tax post-war refunds	(95)	15
(a) Households	(60a)	(—177)			
(b) Public collective providers	(96a)	(—175)			
(c) Rest of the world	(108a)	(103)			
31. Total payable		(1,366)	36. Total receivable		(1,366)

Households and Non-profit-making Bodies

(4) OPERATING ACCOUNT

37. Purchases from:			42. Sales to appropriation account	(44a)	7,907
(a) Enterprises	(6a)	(7,563)			
(b) Public collective providers	(71b)	(30)			
38. Depreciation provision	(62)	(34)			
39. Indirect taxes (including employers' contributions to national insurance)	(82b)	(92)			
40. Operating surplus	(49)	(188)			
41. Total payable		7,907	43. Total receivable		7,907

(5) APPROPRIATION ACCOUNT

44. Purchases from:			49. Operating surplus	(40)	(188)
(a) Operating account	(42)	7,907	50. Interest from rest of the world	(105b)	(20)
(b) Rest of the world	(110b)	97	51. Dividends from rest of the world	(106b)	(16)
45. Interest to enterprises	(25a)	(35)	52. Interest from:		
46. Direct taxes on income	(89b)	1,278	(a) Enterprises	(14a)	(40)
47. Saving	(63)	310	(b) Public collective providers	(77b)	(400)
			53. Dividends from enterprises	(15a)	(658)
			54. *Entrepreneurial* withdrawals	(17a)	(1,645)
			55. Wages and salaries from:		
			(a) Enterprises	(18)	5,081
			(b) Public collective providers	(78)	916
			56. Transfers from public collective providers	(79)	663
48. Total payable		(9,627)	57. Total receivable		(9,627)

(6) RESTING ACCOUNT

58. Fixed asset formation	(7b)	(75)	62. Depreciation provision	(38)	(34)
59. Direct taxes on capital	(101)	214	63. Saving	(47)	310
60. Lending and debt reduction:			64. War damage claims	(94b)	(35)
(a) Enterprises	(30a)	(177)			
(b) Public collective providers	(96b)	(−87)			
61. Total payable		(379)	65. Total receivable		(379)

Public Collective Providers

(7) OPERATING ACCOUNT

66. Purchases from:			71. Fees from:		
(a) Enterprises	(6b)	(825)	(a) Enterprises	(1a)	(80)
(b) Rest of the world	(110c)	(154)	(b) Households	(37b)	(30)
67. Depreciation provision	(98)	100	72. Sales to appropriation account	(74)	1,959
68. Indirect taxes (including employers' contributions to national insurance)	(82c)	19			
69. Operating surplus	(83)	961			
70. Total payable		(2,069)	73. Total receivable		(2,069)

(8) APPROPRIATION ACCOUNT

74.	Purchases from operating account	(72)	1,959		
75.	Subsidies to enterprises	(10)	515		
76.	Interest to rest of the world	(111b)	(40)		
77.	Interest to:				
	(a) Enterprises	(25b)	(110)		
	(b) Households	(52b)	(400)		
78.	Wages and salaries	(55b)	916		
79.	Transfers to households	(56)	663		
80.	Saving	(99)	392		
				82. Indirect taxes from:	
				(a) Enterprises	(3) (2,054)
				(b) Households	(39) (92)
				(c) Public collective providers	(68) 19
				83. Operating surplus	(69) 961
				84. Interest from rest of the world	(105c) (10)
				85. Interest from enterprises	(14b) (22)
				86. Dividends from enterprises	(15b) (5)
				87. Transfers to public collective providers from public enterprises	(16) (44)
				88. Entrepreneurial withdrawals	(17b) (5)
				89. Direct taxes on income from:	
				(a) Enterprises	(19) 505
				(b) Households	(46) 1,278
81.	Total payable		(4,995)	90. Total receivable	(4,995)

(9) RESTING ACCOUNT

91.	Fixed asset formation	(7c)	429		
92.	Net purchase of existing assets	(104)	—45		
93.	Compensation to doctors and dentists	(28)	3		
94.	War damage claims by:				
	(a) Enterprises	(34)	(115)		
	(b) Households	(64)	(35)		
95.	Excess profits tax post-war refunds	(35)	15		
96.	Lending and debt reduction:				
	(a) Enterprises	(30b)	(175)		
	(b) Households	(60b)	(87)		
	(c) Rest of the world	(108b)	27		
				98. Depreciation provision	(67) 110
				99. Saving	(80) 392
				100. Gifts from rest of the world under E.R.P.	(107) (125)
				101. Direct taxes on capital	(59) 214
97.	Total payable		(841)	102. Total receivable	(841)

Rest of the World

(10) CONSOLIDATED ACCOUNT

103. Purchases from United Kingdom enterprises	(8)	2,109	110. Sales to United Kingdom: (a) Enterprises	(1b)	1,938
104. Net purchase of existing assets from United Kingdom	(92)	45	(b) Households	(44b)	97
105. Interest to United Kingdom:			(c) Public collective providers	(66b)	154
(a) Enterprises	(23)	(32)	111. Interest from United Kingdom:		
(b) Households	(50)	(20)	(a) Enterprises	(12)	(20)
(c) Public collective providers	(84)	(10)	(b) Public collective providers	(76)	(40)
106. Dividends to United Kingdom:			112. Dividends from United Kingdom	(13)	(62)
(a) Enterprises	(24)	(84)			
(b) Households	(51)	(16)			
107. Gifts to United Kingdom under the Economic Recovery Programme	(100)	(125)			
108. Lending and debt reduction:					
(a) British enterprises	(30c)	(−103)			
(b) British public collective providers	(96c)	−27			
109. Total payable		2,311	113. Total receivable		2,311

XIV. A DISCUSSION OF THE EXAMPLE: THE SECTORS USED

In the example, set out in its two forms in sections XI and XIII, I have tried to summarize the transactions in the British economy during 1948 in accordance with the principles developed in the earlier sections of this paper. My object now is to discuss the extent to which these principles are reflected in the actual case I have chosen, but before doing this I shall indicate the coverage of the different sectors.

Enterprises are here thought of as the centre of business decisions in which a number of factors of production are brought together and organized with the object of producing goods and services for sale. Thus a landlord who owns a dwelling which he lets is treated as an enterprise, while the activity of the owner-occupier of a dwelling is recorded as part of the operating activity of the household sector. Public and private business undertakings of all kinds are included in the enterprise sector. Private

enterprises may take the form of companies, partnerships, sole traders or individuals engaged in professional practice, while public enterprises are composed of public corporations and the trading services of government departments and local authorities.

The principal feature of households and the non-profit-making bodies which are grouped with them is that their products are not intended for sale. It is true that their operating account may show a surplus, as in the case of the net rent of owner-occupied dwellings, but any such profit arises not in general from an actual sale but from an imputation designed in certain well-defined spheres to put the accounts of those who do things for themselves on to a comparable footing with those who buy or hire them from other people.

In the public sphere, public collective providers correspond to households and other non-profit-making bodies in the private sphere. They comprise all forms of government administration, whether central or local, which are excluded from the category of enterprises. Their function is to organize for, but not normally to sell to, the community those common services which cannot conveniently and economically be provided by households and other associations of individuals.

Labour and lending services are introduced here mainly for expository purposes and are consolidated away in the second form of accounts. The first comprises those who work in the capacity of employees, and the second comprises all who lend money whether for production or consumption purposes. It is necessary in deriving the geographical product to divide these sectors into home and foreign, the former branch providing the services for the economy under investigation and the latter providing them for the rest of the world. The entries in the foreign labour and lending service accounts may be consolidated with those in the account for the rest of the world without any loss of information. In Cmd. 7649 all British labour is assumed to be employed in the British economy so that there is no foreign labour service in this example.

The rest of the world comprises all those transactors not deemed to be within the economy under investigation but, being in consolidated form, contains of course only transactions in which that economy is involved.

XV. THE OPERATING ACCOUNTS

On the incoming side of the operating account for enterprises there are three items, sales of goods and services, the value of the change in inventories, and subsidies. The first of these does not call for much discussion, except that it may be noted that all imports in the ordinary sense of the term are routed through the operating account of enterprises, with the consequence that their value appears in this item, except insofar as a part of this value is included in the value of the change in inventories. In the great majority of cases this will be the correct treatment, since generally speaking British imports will be brought into the country by a business enterprise and then sold to some sector of the British economy. An exception will however occur insofar as capital goods, such as ships and machinery, are imported directly from abroad by the firm that is going to use them. Such imports would be more naturally treated in my scheme as a debit directly against the resting account of enterprises, with a reduction in the value of imports debited to the operating account of enterprises, in the sales proceeds of enterprises and in the corresponding purchases debited to the resting account of enterprises.

The estimate for the value of the change in inventories is necessarily rough, but in principle it provides the kind of information required. The figure given is comparatively small, largely because it contains a considerable negative component representing the sales of surplus stores by the central government. This item however reappears as a debit in the resting account of enterprises, and an attempt is made in the discussion of the resting accounts given below[1] to disentangle the resting account entries for private enterprises from those for public enterprises including trading services.

Details of the last of the three items, subsidies, are given in Table 28 of Cmd. 7649. There are no doubt some marginal items, but on the whole the estimate is I think in accord with the definition of subsidies adopted in the theoretical discussion. It will be noted that a very large item making up the bulk of the total represents trading losses of the Ministry of Food. In general however I think it is true to say that these trading losses arise as a consequence of the differential in the fixed buying and

[1] See page 65.

selling prices for food products, so that the magnitude of the subsidy per unit of sales at any one time is fixed in advance. The finance of these trading losses does not really represent the undertaking of an unspecified liability by the central government, but one which is fixed per unit of sales. This form of subsidy closely corresponds to indirect taxation levied on output or sales, the rate of tax per unit being given in advance, but the total revenue from the tax being determined by the amount of trade done.

On the outgoing side of this account there are seven items, some of which call for further discussion. The sums payable in respect of lending services represent the amounts due in respect of the purchases of these services, and no attempt is made to calculate the total capital employed, apply an appropriate rate of interest to this sum and then move a portion of profit corresponding to the imputed interest on capital provided by the proprietors into the item for the purchase of lending services. The same is true with respect to labour services in the case of unincorporated enterprise. The figure for the purchase of labour services does not include any sum transferred from profit in respect of the value of the labour undertaken by the proprietors of such enterprises.

The next item which calls for comment is the entry for depreciation provision. On this two points must be made. First the provisions are not on a replacement cost basis, being derived in the main from income tax allowances. In the second place, allowances for repairs have been included in the case of buildings and highways, with the consequence that this kind of repair is debited to resting accounts as an element of gross asset formation. It would no doubt be better to treat these repairs as direct operating debits as in the case of repairs to machinery and plant, but I have not in fact made this adjustment in the figures given.

The entry for indirect taxes is made up of local rates together with a long list of taxes levied by the central government which are set out in some detail in Table 23 of Cmd. 7649. It may be noted that I have followed the White Paper in treating the surplus shown in the Post Office commercial accounts as an indirect tax and not as an item of government income from property.

The operating surplus in the first arrangement of the system represents the gain from productive activity accruing to the pro-

prietors. In the second arrangement it represents the total income accruing either to the proprietors or to those in the labour and lending services who are co-operating with them in production.

The operating account for households contains only one credit item, sales to the household appropriation account. This means that the whole of the goods and services bought by households, apart from the comparatively small item of tourist expenditure abroad, is taken to represent the cost and profit of conducting household operations. In point of fact however it might be thought desirable to treat a number of goods and services bought by individuals as appropriation account debits in the same way that tourist expenditure has been treated here, and regard a somewhat more restricted set of purchases to be concerned with conducting household operations. Examples of items which might better be treated in this way are expenditure on food and drink consumed outside the home, and entertainments of all kinds. The effect of this would be to emphasize the difference between the household and the individual spending units. To the extent that more goods and services are regarded as purchased by the appropriation account of households directly from enterprises, so the operating credit and the main appropriation account debit for households would be reduced, and so would the operating debit in the household sector relating to purchases from enterprises. The whole rearrangement would not affect the national income or the main totals, but would perhaps reflect more accurately the different kinds of activity within the household.

Most of the remaining debits in the operating account of households relate to the question of owner-occupied houses, which are treated as a part of the cost of conducting household operations, and have been removed from the enterprise sector where they appear in Cmd. 7649. Purchases from the home lending service represent mortgage interest assumed to enable individual households to acquire new or existing houses. No figure appears in this example for interest payable in respect of consumption loans raised by households.

The operating account for public collective providers is drawn up on the same principles as the one for households. In this account there are brought together all the costs relating to the operation of government administrative services, the main pur-

chaser of these services being the appropriation account of public collective providers themselves except for a small amount of sales to enterprises and households against fees and the like. This accords with the usual treatment whereby it is recognized that the government is, in the case of all its administrative services, a final buyer raising the money required by means of taxation and borrowing but not in any meaningful sense selling its output of administrative services to enterprises and households except for the very small revenue from fees and the like mentioned above.

It may be thought that any branch of government activity in receipt of fees and the like should be treated as a public enterprise and not included among public collective providers. This however is not the case, since in many branches of government activity, e.g. public education, a contribution may be required of certain users either on account of their means or to help towards the costs of some special service. Clearly it would be most inconvenient to have to treat public education, when predominantly it is not charged for, as a public enterprise. As a result of not doing this however the necessity arises of recognizing fees payable to public authorities.

It will be convenient to start the discussion of the entries in this account by studying those on the debit side. The first of these represents purchases from British enterprises and is larger than the figure given in Cmd. 7649 by the estimated revenue from fees paid by enterprises and households which have been netted off the figure given there. The second entry represents the cost of labour services and represents the wages and salaries due to employees of public collective providers together with the employers' national insurance contributions in respect of these employees.

The third entry represents the interest due to the home lending service in respect of the debt incurred by local authority rate fund services. In the note to item 12, table 4, of Cmd. 7649, this interest is estimated at £40–50 million, and a figure of £45 million has therefore been adopted for 1948. The remaining £555 million of national debt interest comprises £17 million of interest payable by local authority trading services which is debited to the operating account of enterprises and £538 million which has been treated as a debit not in this account but in the appropriation account of public collective providers, to emphasize the fact

that it is regarded here, as in the White Paper, as interest on a consumption loan. The debt interest of the local authority rate fund services included in the operating account represents interest on loans raised to finance capital expenditure, and has been included as an operating charge simply because it is not interest on a consumption loan.

The fourth outgoing item from this account represents the purchase of goods and services from the rest of the world. It is treated here as a debit in the operating account because it is part of the cost of providing and maintaining British government services. The fifth entry shows the provision for maintenance of buildings, highways and bridges plus annuities under the Housing (Temporary Accommodation) Act of 1944, and local authority provision for debt repayment on rate fund service account (here taken as equivalent to depreciation provision). As has already been suggested in discussing the similar entry in the accounts of enterprises, it might be better to treat the maintenance provisions in this item as a direct purchase rather than a provision transferred to the resting account out of which the purchase is made.

The final debit entry in this account represents the operating surplus of public collective providers, and is so calculated as to ensure that if the accounts of public collective providers are consolidated with those of their lenders, no income will be generated apart from the interest payable by public collective providers on loans other than for consumption purposes, i.e. in this case the interest on loans raised by local authority rate fund services. It can readily be seen, therefore, that this item must be set equal to the negative of the interest on consumption loans by public collective providers.

The credit entry in this operating account comprises the fees paid to public collective providers by enterprises and households, which are both small items, together with the residual value of charges plus profit on this account which is paid for wholly by the appropriation account.

The operating account of labour services requires very little elaboration. On the incoming side there is shown the total sum paid for labour services by all sectors of the economy, including employers' national insurance contributions which are treated as part of the cost of labour services. On the outgoing side the same employers' contributions are shown as a cost, leaving an

amount equal to wages and salaries as the operating surplus. In treating employers' national insurance contributions as a cost in this way I have followed the treatment of Cmd. 7649. To bring the estimates in this respect into line with the definition adopted for international comparisons by the Statistical Office of the United Nations,[1] it would be necessary to treat the employers' contributions as part of the operating surplus of labour services and then deduct this item as a direct tax in the appropriation account, thus leaving the conventional figure of wages and salaries as the residual payable item in the appropriation account.

The operating account for home lending services also calls for very little comment. The sole entry on the incoming side represents revenue from loans to the different sectors of the British economy, whether these are treated as consumption loans or not. Since this revenue is regarded as a net figure there are no costs to be debited against it and consequently the whole amount is transferred to the appropriation account as an operating surplus.

If we consolidate the operating accounts so far discussed, we obtain a concise account of the operating activity of the British economy, from which we can see very clearly the items which enter into the gross geographical product at market prices, the net geographical product at market prices, and the net geographical product at factor cost. In the second form of presentation (see the diagrams at the end of this paper) these three aggregates of transactions are shown as balances on the consolidated operating account taken at different stages. The first, namely the gross geographical product at market prices, is taken when only sales proceeds, including the value of the change in inventories, and purchases of goods and services, have been brought into account. The net geographical product at market prices is obtained by adding as a further cost entry provisions for depreciation, while the net geographical product at factor cost is obtained from this by treating indirect taxation as a further outgoing entry and subsidies as a further incoming entry additional to sales proceeds. Since this series of balances can be taken for each constituent sector of the economy the contribution of each to each of the aggregates of transactions is also shown.

[1] See *National Income Statistics of Various Countries, 1938–1947* (United Nations, 1948).

So far nothing has been said about the foreign lending service. This sector is concerned solely with interest on British loans to the rest of the world and can without any loss of information be consolidated with the account for the rest of the world.

XVI. THE APPROPRIATION ACCOUNTS

The appropriation accounts bring together the various sources of income accruing to each sector of the economy, and show the way in which this income is disposed of. In the case of enterprises the first entry is the surplus transferred from the operating account, and to this we may add in the first place interest and dividends received by enterprises from the foreign lending service and the rest of the world and finally the interest received from the home lending service. On the outgoing side we have dividends to the rest of the world and to other sectors of the British economy, together with transfers of profit by public enterprises to public collective providers and entrepreneurial withdrawals by all sectors of the economy from enterprises. The latter figure includes professional earnings, farmers' profits, trading profits of other sole traders and partnerships and that part of the net income from rents which does not accrue to enterprises.

There are two further outgoing figures on this account. The first represents the direct taxes payable by companies and public enterprises excluding taxation payable on income transferred to other sectors of the economy, all of which are shown gross of direct taxation. Thus the figure shows Profits Tax, Excess Profits Tax and Income Tax paid by companies less Income Tax deducted at source when interest and dividends are paid. Although in principle the estimate represents the amount payable, the figure actually shown represents payments made since additions to tax reserves are not included here but in the figure for saving. The reason is that the estimate of the additions to tax reserves is mainly concerned not with the difference between payments and sums legally due, but between payments and those sums which would be due if assessments were made on current income. Thus the additions to tax reserves are in respect of the net anticipated liability in respect of current income, the greater part of which will only become legally payable in the following accounting period.

As has just been mentioned, the figure for saving, which is the balancing item in this account and is transferred to the resting account, includes additions to tax reserves as well as amounts placed to free reserves. It is less than the corresponding figure in Cmd. 7649 by £150 million, which represents that part of the increase in inventories which is due entirely to price increases and which has been deducted here from the operating surplus (as compared with the figures in Cmd. 7649). As a consequence there is a similar effect on the figure for saving.

The appropriation account for households covers essentially the same ground as table 16 of Cmd. 7649, which shows the revenue account of persons, the only difference being that here the entries are somewhat differently grouped and subdivided. On the income side there appears first the surplus transferred from the operating account of households, which in this example is composed entirely of the estimated surplus on the occupation of owner-occupied dwellings. Following this there are credited interest from the foreign lending service and dividends from the rest of the world. The remaining entries represent transfers from other sectors of the British economy. The first of these is interest from the home lending service and this is followed by dividends from enterprises, entrepreneurial withdrawals, wages and salaries, and transfer incomes such as social security benefits and war pensions and gratuities receivable from the appropriation account of public collective providers.

On the outgoing side the four entries cover consumers' expenditure, direct taxes levied on income, and saving. Consumers' expenditure is shown in two items, the first being the value of purchases from the operating account of households, while the second represents tourist expenditure abroad. As already mentioned, the latter is treated as a direct appropriation account debit, and if the proper distinction between individual and household spending units were to be followed, it would be reasonable to treat a number of items of consumption expenditure in the same way. The figure for direct taxes levied on income is the same as that given in Cmd. 7649, while the figure for saving represents the sum of direct taxes levied on capital, additions to tax reserves, and net saving. The second item, additions to tax reserves, is treated as an element of saving since the liability is for the most part not legally due in the period of account. Direct taxes levied on capital are included in saving

since they are regarded in this example as an outgoing from the resting account.

The appropriation account of public collective providers contains on the incoming side revenue from indirect taxes and direct taxes levied on income together with various forms of income from property and the (negative) operating surplus transferred from the operating account.

The first two entries on the outgoing side of this account represent respectively the purchase of goods and services from the operating account and the sum due to the home lending service in respect of interest on the national debt. It will be seen that the sum of these two items which represent expenditure on goods and services is equal to the corresponding figure shown in Cmd. 7649 together with interest on loans raised by the rate fund services of local authorities which, as already mentioned, are not here treated as consumption loans.. Apart therefore from this minor change of definition, the estimate given here for expenditure on goods and services is the same as that in Cmd. 7649.

The remaining entries represent subsidies payable to enterprises, transfer incomes payable to households, and the residual entry or saving of public collective providers which is transferred to their resting account. This last entry differs from the figure given in Cmd. 7649 by the addition of certain transfers to private resting accounts, which are here treated as payable out of the resting account of this sector, and by the deduction of direct taxes levied on capital which are here treated as receivable into the resting account of this sector.

Little discussion is required of the appropriation account of labour services. The only incoming item is the surplus from the operating account, and the only outgoings are wages and salaries payable to the appropriation account of households.

A similar treatment is followed in the appropriation account for the home lending service. The operating surplus equal to the revenue receivable from all forms of loan is the only incoming item, while the various outgoing items represent interest payable to the rest of the world and to the various other sectors of the British economy.

It will be noticed that in the second form of presentation in the diagrams at the end of this paper all interest and dividends due to, or receivable from, the foreign lending service or the rest

of the world have been grouped together immediately under the operating surpluses of the different sectors. By adding to the operating surplus of each sector the net income from interest and dividends due from abroad, we convert the net geographical product at factor cost into the national income, and this figure is shown as a separate line in the table. The national income could, of course, equally well be derived by taking a similar balance on the consolidated appropriation account of the different sectors.

XVII. THE RESTING ACCOUNTS

The incoming entries into the resting account for enterprises are provision for depreciation and saving, together with certain capital transfers from public collective providers, in particular war damage claims and Excess Profits Tax refunds. On the outgoing side there appear gross asset formation, the compensation paid to doctors and dentists (the entry is a negative item representing the purchase of the goodwill of doctors' and dentists' practices), the value of the change in inventories and three entries representing net lending and debt reduction by enterprises to households, public collective providers and the rest of the world.

It will be observed that a number of capital transfers appear in the resting accounts of this system, so that in any sector of the economy saving is not necessarily equal to fixed asset and inventory formation plus net lending and debt reduction. If it were thought desirable that this equality should hold for each sector, then it would be necessary for the capital transfers in this sector (war damage claims and Excess Profits Tax refunds) to be shown as an incoming into the appropriation account. I have preferred the treatment given because I think there is a useful distinction between income transfers and capital transfers. Excess Profits Tax refunds are made against evidence of capital expenditure and are not therefore available as disposable income. Also war damage claims are in many cases met by the payment of the cost of repairs and rebuilding, though in certain cases of total loss a value payment is made which is not tied to specific capital development.

Although in general very little subdivision can be made of the accounts of enterprises from the information given in Cmd. 7649, it is possible to make a rough division of the main resting

account entries for government trading services and other enterprises. This is done in the following table, which is of some interest because in 1948 the sale of surplus stores by the central government (which appear in this example in the figure for the value of the change in inventories held by enterprises) was considerable and in the opposite direction to the change in the value of inventories held by private enterprises.

Resting Accounts for Enterprises

(a) ENTERPRISES OTHER THAN GOVERNMENT TRADING SERVICES

1. Fixed asset formation	1,432	6. Depreciation provision	657
2. Compensation to doctors and dentists	−3	7. Saving	555
3. Value of the change in inventories	317	8. War damage claims	115
4. Lending and debt reduction	−404	9. Excess Profits Tax post-war refunds	15
5. Total payable	1,342	10. Total receivable	1,342

(b) GOVERNMENT TRADING SERVICES

11. Fixed asset formation	54	16. Depreciation provision	24
12. Purchase of surplus stores	−212	17. Saving	—
13. Value of the change in inventories	27		
14. Lending and debt reduction	155		
15. Total payable	24	18. Total receivable	24

The entries in this table largely follow from the figures given in the note to item 26 in section XII above.[1] It will be seen from this table that largely because of the size of the amount received from the sale of surplus stores a considerable balance available for lending and debt reduction arose on the resting account of government trading services.

The situation of private enterprises was, of course, quite different. In their case fixed asset formation and the increase in inventories were very large in comparison with the sums going into their resting account. As a consequence it was necessary for them to borrow from other sectors on a considerable scale, though it is known that by way mainly of short-term commercial credits exporters, included of course in private enterprises, were lending a considerable sum to the rest of the world. It appears

[1] See pp. 44 *et seq.*

from the above table that, when allowance is made for the credits extended by exporters, the net borrowing of private enterprises from other sectors of the British economy amounted to something of the order of £500 million.

The resting account for households presents no new problems. On the incoming side there appear depreciation provision in respect of owner-occupied houses, saving, and war damage claims received. On the outgoing side there appear capital expenditure in respect of owner-occupied houses, together with direct taxes levied on capital and net lending and debt reduction to enterprises and public collective providers. In fact it appears that the sums lent net to enterprises were considerable while a substantial amount of central government debt previously held by households was retired.

The resting account of public collective providers contains some more interesting entries. On the incoming side there appear depreciation provision in respect of fixed assets other than those held by public enterprises and trading services, saving, direct taxes levied on capital (which appear here as a credit item), and gifts received under the Economic Recovery Programme. On the outgoing side there appear first three entries making up the fixed asset formation of public collective providers. The largest one represents purchases from British enterprises in respect of new capital development and repairs and improvements met out of the depreciation provision. The second, which is negative, represents the sale of existing assets to the Government of India under the agreement of July 1948, while the third, a very small item, represents the purchase of the goodwill element in the practices of doctors and dentists. Of the remaining outgoings, two represent capital transfers, namely war damage claims and Excess Profits Tax refunds, and three represent net lending and debt reduction to enterprises, households and the rest of the world. As might be expected in view of the Chancellor's anti-inflationary fiscal policy and the gifts under the Economic Recovery Programme, the amount of net lending and debt reduction was considerable, being in the neighbourhood of £290 million.

The consolidated position is shown in the consolidated resting account. In the present example saving is not equal to net fixed asset and inventory formation plus net lending and debt reduction, even for the British economy as a whole, because gifts

under the Economic Recovery Programme have been treated as an incoming into the resting account.

XVIII. THE ACCOUNT FOR THE REST OF THE WORLD

Little need be said about the entries in this account since they are simply the loose ends arising on the accounts already discussed. On the incoming side there appear sums due in respect of goods and services imported into the United Kingdom together with interest and dividends due from the United Kingdom. On the outgoing side there appear proceeds from the sale of British exports together with the sum due in respect of assets taken over by the Government of India, interest and dividends due to the British economy, the gift under the Economic Recovery Programme and a final element of net lending and debt reduction. This final element is negative in the present example, indicating that the rest of the world was in 1948 borrowing from the United Kingdom. This of course is different from the figure shown in Cmd. 7649 and the White Paper dealing with the balance of payments (Cmd. 7648, March 1949). The reason is that the gift under the Economic Recovery Programme has been treated as a gift by the rest of the world and not as a loan, and also that an attempt has been made, using the figures given in Cmd. 7649, to put British exports on to a receivable basis, with the consequence that a figure of £125 million appears as a credit or loan by British exporters to importers in the rest of the world.

XIX. A DESCRIPTION OF AN ACCOUNTING SYSTEM IN TERMS OF THE THEORY OF SETS

This paper is largely concerned with the problems of classifying transactions and with ensuring consistency in their treatment. It has also been necessary to consider the effect of the operation of consolidation on the elements of a system of accounts. Most of the discussion has been in economic terms and much of it has been quite specific in character, dealing with actual transactions that happen to have been important in the practical example. For the benefit of those who prefer a greater generality of treatment I have tried in this section to give a brief but abstract statement of what is involved in classifying

transactions, ensuring consistency and consolidating accounts in a closed system. These remarks may be helpful in tracing the relationships between the familiar aggregates viewed as rearrangements of the entries in a very small number of consolidated accounts.

Let us suppose a closed economy in which we can identify over a given period every transaction, and let us denote this set of transactions by T. Every element of T may be regarded as a receivable and again as a payable, thus forming two partitions of T which we will denote by R and P respectively. Each element of R and of P may be classified according to three criteria in such a way that there is no element common to any two subsets of R or of P arising from these classifications, while the union of all subsets of R and of P yields T identically. The first of these criteria is the transactor involved which for any transaction may or may not be the same in R and P. The second is the form of activity in respect of which the transaction arises, which again may or may not be the same in R and P. For example the purchase of materials by one business from another arises in respect of production activity in both cases, while the purchase of new capital equipment by one business from another arises in respect of production activity from the point of view of R and in respect of adding to wealth from the point of view of P. Finally the elements of R and P may be classified according to the object of, or consideration received in respect of, the transaction. This criterion must necessarily be the same in R and P for any element in T. Thus we may denote the subsets of R by symbols of the form $R_{ia\alpha}$, where $i=1, 2, \ldots, N$ denotes the transactor, $a=1, 2, \ldots, n$ denotes the form of activity and $\alpha=1, 2, \ldots, \nu$ denotes the consideration. In a similar way we may denote the elements of P by $P_{ia\alpha}$. The elements of these subsets, that is in any case the individual like transactions, could be denoted by symbols such as $r_{ia\alpha s}$, $p_{ia\alpha s}$, where $s=1, 2, \ldots, m$, but in practice we shall hardly need so fine a classification. In practice we are likely to be interested in the milk bought by consumers from producers, and not in each individual bottle bought by consumer A from producer B.

In this notation a class of like transactions, which I shall in future refer to as a transaction, is represented by an object which belongs to both R and P and may be denoted by the symbol $R_{ia\alpha} \frown P_{jb\alpha}$ with no restrictons on the suffixes i, j, a, b

and α except perhaps that if $i=j$ we should not expect to find $a=b$.

To each element of R, P and T we may assign a measure, usually expressed in terms of money, and denote by P, Π and T the measures associated with R, P and T. Since these measures are additive we have

$$(1) \quad \sum_{i}\sum_{a}\sum_{\alpha} P_{ia\alpha} \equiv \sum_{i}\sum_{a}\sum_{\alpha} \Sigma_{ia\alpha} \Pi \equiv T$$

Since there is a one-one correspondence between the elements of R and P and the elements of P and Π we may conduct the greater part of the following argument in terms of either pair of sets.

An accounting system comprising the elements of T consists of a dual partition of all the elements of T into sets R and P, subject to a number of constraints of the form

$$(2) \quad \sum_{\alpha} P_{ia\alpha} \equiv \sum_{\alpha} \Sigma_{ia\alpha} \text{ or } P_{ia} \equiv \Pi_{ia}$$

These constraints ensure that there is for each transactor one balancing statement or account in respect of each form of activity. Since $P \equiv \Pi \equiv T$ the number of constraints is equal to the number of parts in the partition of P into subsets of the form P_{ia} less one. If each transactor takes part in each form of activity, as in general is the case, then the number of constraints is $(Nn-1)$.

The character of an accounting system will depend on the definition of the variable factors i, a and α and on the way in which they are classified. In the case of α there is clearly scope for a large number of separate classes. However much we simplify the accounting system it seems desirable that all unilateral transactions or mere transfers should be kept distinct from transactions in which a specific good in the widest sense of the term passes in the opposite direction to the monetary flow.

In the case of a, it has already been suggested that there are three basic forms of economic activity, so that a may take the values 1, 2, 3 associated respectively with production, consumption and adding to wealth. Finally, in the case of i, there is again a great deal of latitude both in the matter of definition and of classification. This will later be illustrated by an example.

By a consolidated system of accounts we normally mean a

system in which the accounts for different transactors are combined and the common elements are cancelled out. In this case the set T is reduced by the elimination of all elements contained in subsets of the form $R_{a\alpha} \frown P_{a\alpha}$ and the remainder is partitioned into a number of blocks of transactions of the form $R_{a\alpha} \frown P_{b\alpha}$ where $a \neq b$. In this notation $R_{a\alpha} = \bigsmile_i R_{ia\alpha}$.

The money measures of the elements of R and P which appear in (2) may be written in the form

$$(3) \quad P_{ia} \frown \Pi \equiv \Pi_{ia} \frown P$$

If we ignore transactions, if any, within accounts, we may write, owing to (2),

$$(4) \quad P_{ia} \frown \Pi'_{ia} \equiv \Pi_{ia} \frown P'_{ia}$$

where Π'_{ia}, P'_{ia} are the complements of Π_{ia} and P_{ia} in Π and P. A consolidation of all accounts other than the account of transactor i in respect of the form of activity a will give correspondingly

$$(5) \quad P'_{ia} \frown \Pi_{ia} \equiv \Pi'_{ia} \frown P_{ia}$$

which, of course, is identical with (4) except that the two sides of the equation are interchanged. Thus, for example, if a stands for the form of activity production, the consolidated account for production is identical with the consolidated account for everything else, except that what appears as an element of P in one will appear as an element of Π in the other and *vice versa*.

We have complete freedom to classify the factor i in any way we please. If we consolidate the sets over i so as to present the system in consolidated form we will write $P_{a\alpha}$ for $\Sigma_i P_{ia\alpha}$ and $\Pi_{a\alpha}$ for $\Sigma_i \Pi_{ia\alpha}$. In consolidated form any two accounting systems are identical provided that any elementary transaction which appears in the subset $P_{a\alpha} \frown \Pi_{b\alpha}$, $a \neq b$, in one system also appears in the same subset in the other.

This proposition can be illustrated by the treatment of death duties discussed in section I above. Let us denote the forms of activity production, consumption and adding to wealth by the numbers 1, 2, 3. In these terms it has been suggested that death duties may be treated as $P_2 \frown \Pi_2$, $P_2 \frown \Pi_3$, $P_3 \frown \Pi_3$. If the system is consolidated, the first and third methods will give

identical results but the second will give a different result.

If the consolidation is not carried out fully over the N values of i, but if instead these N values are consolidated into subsets which we will denote by I, then the condition that two accounting systems should be identical in consolidated form is that any elementary transaction which appears in the subset $P_{Ia\alpha} \frown \Pi_{Jb\alpha}$, $I \neq J$ or $a \neq b$ or both, in one system also appears in the same subset in the other. Thus if we divide N into two subsets, 1 and 2, representing private and government transactors respectively, then the two sets $P_2 \frown \Pi_2$ and $P_3 \frown \Pi_3$ in the above example become $P_{22} \frown \Pi_{12}$ and $P_{23} \frown \Pi_{13}$. Since in this case $I \neq J$ and the two subsets are not the same the accounting systems are different. In this example the difference lies in the allocation of saving to the two sectors of the economy.

XX. CONCLUSIONS AND ACKNOWLEDGMENTS

In this paper I have tried to lay out a form of social accounts which will be generally useful for economic analysis and policy. The system which emerges is intended to satisfy certain theoretical criteria and at the same time to be capable of practical realization. In the work of classifying and distinguishing between transactions it is quite likely that I have gone too far for some people and not far enough for others. Those who think I have gone too far might say for example that the distinction between direct and indirect taxes or between subsidies and income transfers made by the state is essentially arbitrary and so ought not to be made. I do not believe this is so. The distinction between direct and indirect taxes that can be made in practice compares favourably, I think, with the estimates available for, say, depreciation provision. The distinction cannot reasonably be rejected on the grounds of its unimportance. For if we abandon it we must either do without the concepts of net geographical product at factor cost and national income altogether, or we must change their meaning radically by defining them to exclude all taxes and include not only subsidies but also income transfers from the state. Such a procedure would be unfortunate for many purposes and in particular would diminish the value of industrial subdivisions of net product.

Those who think I have not gone far enough may wish to see a much more searching treatment of costs, e.g. on the labour

service account, a greater willingness to make imputations of activity in the case of non-profit-making bodies of all kinds and a bolder treatment of asset formation and saving by these bodies. My principal reason for not going further in these matters is that I do not know how to. I feel, for example, that I have enough data to make a reasonable distinction between direct and indirect taxes but not to estimate depreciation provision on consumers' durable goods. While this means that there are some questions which my system, in common with most systems adopted in practice, cannot answer, it is fair to point out that there are also many questions that can be answered without tackling these more difficult problems.

Apart from the substantial question of how far we go in making distinctions there is the subsidiary question of how we assign perfectly distinct items to the accounts. I have already given reasons for wishing to treat certain transactions as capital transfers. One consequence of doing this is that saving is not defined equal to asset and inventory formation plus net lending and debt reduction either for a sector or even for a whole open economy. Those who would like to retain this equality must do away with the distinction between current and capital transfers and treat all transfers as current. If this is done however income will only equal consumption plus saving if it is defined to include capital transfers and these transfers will themselves come to be included in saving. The important thing in such cases is to show the different items separately so that different investigators can arrange them according to their tastes. It is undesirable, in my view, to treat such transactions as gifts under the Economic Recovery Programme as a part of the borrowing of the recipient (as is done in Cmd. 7649) since gifts are different from borrowing even if it is hard to say whether they are current or capital transfers.

In writing this paper I have had the great advantage of talking over many of the subjects discussed with a number of friends who have been working on these problems for many years. In particular I should like to record the valuable discussions I have had with Messrs. F. S. Bray and J. E. G. Utting of the Department of Applied Economics, Mr. E. F. Jackson of the Central Statistical Office, and Messrs. O. Aukrust and J. Marczewski of the National Accounts Research Unit of the Organisation for European Economic Co-operation. I should also like to record

the mental stimulus received from my colleagues on a joint sub-committee of accountants and economists brought together by the Institute of Chartered Accountants and the National Institute of Economic and Social Research to discuss terms and concepts in common use by accountants and economists. Needless to say no one but myself is responsible for any errors or opinions that appear in this paper.

TRANSACTIONS OF THE UNITED KINGDOM 1948: FIRST FORM OF ACCOUNTS (£ MILLION)

	Enterprises: Operating account, Debit	Enterprises: Operating account, Credit	Enterprises: Appropriation account, Debit	Enterprises: Appropriation account, Credit	Enterprises: Resting account, Debit	Enterprises: Resting account, Credit	Balances: O A/C, Credit	Balances: A A/C, Credit	Households etc.: Operating account, Debit	Households etc.: Operating account, Credit	Households etc.: Appropriation account, Debit	Households etc.: Appropriation account, Credit	Households etc.: Resting account, Debit	Households etc.: Resting account, Credit	Balances: O A/C, Credit	Balances: A A/C, Credit
Products of: Enterprises		12487			1486				7563				75			
Products of: Households etc.										7907	7907					
Products of: Public collective providers	80								30							
Products of: Labour service	5209								78							
Products of: Home lending service	97								35							
Products of: Foreign lending service																
Products of: Rest of the world	1938										97					
Net purchase of existing assets																
Compensation to doctors & dentists					−3											
Value of the change in inventories		132			132											
Gross geographical product at market prices							5295								201	
Depreciation provision	681					681			34					34		
Net geographical product at market prices							4614								167	
Indirect taxes including employers' contributions to national insurance funds	1926								88							
Subsidies		515														
Net geographical product at factor cost							3203								79	
Operating surplus	3203			3203					79			79				
Interest: from foreign lending service				32								20				
Interest: to rest of the world																
Dividends: from rest of the world				84								16				
Dividends: to rest of the world			62													
National income								3257								115
Interest from home lending service				160								440				
Dividends			663									658				
Transfers from public enterprises to public collective providers			44													
Entrepreneurial withdrawals			1650									1645				
Wages & salaries												6071				
Transfer incomes from public collective providers												663				
Direct taxes on income			505								1278					
SAVING								555								310
Saving			555			555					310			310		
Gift under economic recovery programme																
War damage claims						115								35		
Excess profits tax refunds						15										
Direct taxes on capital													214			
Net lending and debt reduction: Enterprises – Households					−177								177			
Net lending and debt reduction: Enterprises – Public collective providers					−175											
Net lending and debt reduction: Enterprises – Rest of the world					103											
Net lending and debt reduction: Households – Public collective providers													−87			
Net lending and debt reduction: Public collective providers – Rest of the world																
	13134	13134	3479	3479	1366	1366			7907	7907	9592	9592	379	379		

	Public collective providers: Operating account, Debit	Public collective providers: Operating account, Credit	Public collective providers: Appropriation account, Debit	Public collective providers: Appropriation account, Credit	Public collective providers: Resting account, Debit	Public collective providers: Resting account, Credit	Balances: O A/C, Credit	Balances: A A/C, Credit	Labour service: Operating account, Debit	Labour service: Operating account, Credit	Labour service: Appropriation account, Debit	Labour service: Appropriation account, Credit	Labour service: Resting account, Debit	Labour service: Resting account, Credit	Balances: O A/C, Credit	Balances: A A/C, Credit
Products of: Enterprises	825				429											
Products of: Households etc.																
Products of: Public collective providers		1531	1421													
Products of: Labour service	935									6222						
Products of: Home lending service	45		538													
Products of: Foreign lending service																
Products of: Rest of the world	154															
Net purchase of existing assets					−45											
Compensation to doctors & dentists					3											
Value of the change in inventories																
Gross geographical product at market prices							-428								6222	
Depreciation provision	110					110										
Net geographical product at market prices							-538								6222	
Indirect taxes including employers' contributions to national insurance funds				2165					151							
Subsidies			515													
Net geographical product at factor cost							-538								6071	
Operating surplus	-538			-538					6071			6071				
Interest: from foreign lending service				10												
Interest: to rest of the world																
Dividends: from rest of the world																
Dividends: to rest of the world																
National income								-528								6071
Interest from home lending service				55												
Dividends				5												
Transfers from public enterprises to public collective providers				44												
Entrepreneurial withdrawals				5												
Wages & salaries											6071					
Transfer incomes from public collective providers			663													
Direct taxes on income				1783												
SAVING								392								—
Saving			392			392										
Gift under economic recovery programme						125										
War damage claims					150											
Excess profits tax refunds					15											
Direct taxes on capital						214										
Net lending and debt reduction: Enterprises – Households																
Net lending and debt reduction: Enterprises – Public collective providers					175											
Net lending and debt reduction: Enterprises – Rest of the world																
Net lending and debt reduction: Households – Public collective providers					87											
Net lending and debt reduction: Public collective providers – Rest of the world					27											
	1531	1531	3529	3529	841	841			6222	6222	6071	6071				

	Home lending service: Operating account, Debit	Home lending service: Operating account, Credit	Home lending service: Appropriation account, Debit	Home lending service: Appropriation account, Credit	Home lending service: Resting account, Debit	Home lending service: Resting account, Credit	Balances: O A/C, Credit	Balances: A A/C, Credit	Consolidation: Operating account, Debit	Consolidation: Operating account, Credit	Consolidation: Appropriation account, Debit	Consolidation: Appropriation account, Credit	Consolidation: Resting account, Debit	Consolidation: Resting account, Credit	Balances: O A/C, Credit	Balances: A A/C, Credit
Products of: Enterprises										4099			1990			
Products of: Households etc.										7907	7907					
Products of: Public collective providers										1421	1421					
Products of: Labour service																
Products of: Home lending service		715								538	538					
Products of: Foreign lending service																
Products of: Rest of the world									2092		97					
Net purchase of existing assets													−45			
Compensation to doctors & dentists																
Value of the change in inventories										132			132			
Gross geographical product at market prices							715								12005	
Depreciation provision									825					825		
Net geographical product at market prices							715								11180	
Indirect taxes including employers' contributions to national insurance funds									2165			2165				
Subsidies										515	515					
Net geographical product at factor cost							715								9530	
Operating surplus	715			715					9530			9530				
Interest: from foreign lending service												62				
Interest: to rest of the world			60								60					
Dividends: from rest of the world												100				
Dividends: to rest of the world											62					
National income								655								9570
Interest from home lending service			655													
Dividends																
Transfers from public enterprises to public collective providers																
Entrepreneurial withdrawals																
Wages & salaries																
Transfer incomes from public collective providers																
Direct taxes on income																
SAVING								—								1257
Saving											1257			1257		
Gift under economic recovery programme														125		
War damage claims																
Excess profits tax refunds																
Direct taxes on capital																
Net lending and debt reduction: Enterprises – Households																
Net lending and debt reduction: Enterprises – Public collective providers																
Net lending and debt reduction: Enterprises – Rest of the world													103			
Net lending and debt reduction: Households – Public collective providers																
Net lending and debt reduction: Public collective providers – Rest of the world													27			
	715	715	715	715					14612	14612	11857	11857	2207	2207		

	Foreign lending service: Operating account, Debit	Foreign lending service: Operating account, Credit	Foreign lending service: Appropriation account, Debit	Foreign lending service: Appropriation account, Credit	Foreign lending service: Resting account, Debit	Foreign lending service: Resting account, Credit	Balances: O A/C, Credit	Balances: A A/C, Credit	Rest of the world account: Debit	Rest of the world account: Credit
Products of: Enterprises									2109	
Products of: Households etc.										
Products of: Public collective providers										
Products of: Labour service										
Products of: Home lending service										
Products of: Foreign lending service		62							62	
Products of: Rest of the world										2189
Net purchase of existing assets									45	
Compensation to doctors & dentists										
Value of the change in inventories										
Gross geographical product at market prices										
Depreciation provision										
Net geographical product at market prices										
Indirect taxes including employers' contributions to national insurance funds										
Subsidies										
Net geographical product at factor cost										
Operating surplus	62			62						
Interest: from foreign lending service			62							
Interest: to rest of the world										60
Dividends: from rest of the world									100	
Dividends: to rest of the world										62
National income										
Interest from home lending service										
Dividends										
Transfers from public enterprises to public collective providers										
Entrepreneurial withdrawals										
Wages & salaries										
Transfer incomes from public collective providers										
Direct taxes on income										
SAVING										
Saving										
Gift under economic recovery programme									125	
War damage claims										
Excess profits tax refunds										
Direct taxes on capital										
Net lending and debt reduction: Enterprises – Households										
Net lending and debt reduction: Enterprises – Public collective providers										
Net lending and debt reduction: Enterprises – Rest of the world									-103	
Net lending and debt reduction: Households – Public collective providers										
Net lending and debt reduction: Public collective providers – Rest of the world									−27	
	62	62	62	62					2311	2311

TRANSACTIONS OF THE UNITED KINGDOM 1948: SECOND FORM OF ACCOUNTS (£ MILLION)

		ENTERPRISES						BALANCES		HOUSEHOLDS *ETC.*						BALANCES		PUBLIC COLLECTIVE PROVIDERS						BALANCES		CONSOLIDATION						BALANCES		REST OF THE WORLD ACCOUNT	
		OPERATING ACCOUNT		APPROPRIATION ACCOUNT		RESTING ACCOUNT		O A/C	A A/C	OPERATING ACCOUNT		APPROPRIATION ACCOUNT		RESTING ACCOUNT		O A/C	A A/C	OPERATING ACCOUNT		APPROPRIATION ACCOUNT		RESTING ACCOUNT		O A/C	A A/C	OPERATING ACCOUNT		APPROPRIATION ACCOUNT		RESTING ACCOUNT		O A/C	A A/C		
		DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	CREDIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	CREDIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	CREDIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT	CREDIT	CREDIT	DEBIT	CREDIT
PRODUCTS OF:	ENTERPRISES		12487			1486				7563				75				825				429					4099			1990				2109	
	HOUSEHOLDS *ETC.*										7907	7907															7907	7907							
	PUBLIC COLLECTIVE PROVIDERS	80								30									2069	1959							1959	1959							
	REST OF THE WORLD	1938										97						154								2092		97							2189
NET PURCHASE OF EXISTING ASSETS																						-45								-45				45	
COMPENSATION TO DOCTORS & DENTISTS						-3																3													
VALUE OF CHANGE IN INVENTORIES			132			132																					132			132					
GROSS GEOGRAPHICAL PRODUCT AT MARKET PRICES								10601								314								1090								12005			
DEPRECIATION PROVISION		681					681			34					34			110					110			825					825				
NET GEOGRAPHICAL PRODUCT AT MARKET PRICES								9920								280								980								11180			
INDIRECT TAXES INCLUDING E.C.N.I.F.		2054								92								19		2165						2165			2165						
SUBSIDIES			515																515								515	515							
NET GEOGRAPHICAL PRODUCT AT FACTOR COST								8381								188								961								9530			
OPERATING SURPLUS		8381			8381					188			188					961			961					9530			9530						
INTEREST	FROM REST OF THE WORLD				32								20								10								62					62	
	TO REST OF THE WORLD			20																40								60							60
DIVIDENDS	FROM REST OF THE WORLD				84								16																100					100	
	TO REST OF THE WORLD			62																								62							62
NATIONAL INCOME									8415								224								936							9570			
INTEREST	ENTERPRISES — HOUSEHOLDS			40	35							35	40																						
	ENTERPRISES – PUBLIC COLLECTIVE PROVIDERS			22	110															110	22														
	HOUSEHOLDS – PUBLIC COLLECTIVE PROVIDERS												400							400															
DIVIDENDS	ENTERPRISES — HOUSEHOLDS			658									658																						
	ENTERPRISES – PUBLIC COLLECTIVE PROVIDERS			5																	5														
TRANSFERS FROM P.E. TO P.C.P.				44																	44														
ENTREPRENEURIAL WITHDRAWALS				1650									1645								5														
WAGES AND SALARIES				5081									5997							916															
TRANSFERS FROM PUBLIC COLLECTIVE PROVIDERS													663							663														
DIRECT TAXES ON INCOME				505								1278									1783														
SAVING									555								310								392							1257			
SAVING				555			555					310			310					392			392				1257		1257						
GIFTS UNDER E.R.P.																						125							125				125	
WAR DAMAGE CLAIMS							115								35							150													
EXCESS PROFITS TAX REFUNDS							15															15													
DIRECT TAXES ON CAPITAL													214										214												
NET LENDING AND DEBT REDUCTION	ENTERPRISES — HOUSEHOLDS					-177							177																						
	ENTERPRISES – PUBLIC COLLECTIVE PROVIDERS					-175																175													
	ENTERPRISES – REST OF THE WORLD					103																								103				-103	
	HOUSEHOLDS – PUBLIC COLLECTIVE PROVIDERS												-87									87													
	PUBLIC COLLECTIVE PROVIDERS – REST OF THE WORLD																					27								27				-27	
		13134	13134	8642	8642	1366	1366			7907	7907	9627	9627	379	379			2069	2069	4995	4995	841	841			14612	14612	11857	11857	2207	2207			2311	2311