5

INTERNATIONAL COMPARISONS OF NATIONAL ACCOUNTS IN ECONOMIC ANALYSIS

by Tibor Barna

I. INTRODUCTION

THE national income estimates of the mercantilist economists and their successors were put forward as part of an economic argument and as such served primarily as tools of economic analysis. In the last twenty years or so an enormous expansion, both extensive and intensive, has taken place in the production of national income estimates. The intensive expansion of the estimates, on both sides of the Atlantic, involved the creation of specialized studies and specialized students, and for this reason the connection between the preparation of estimates and their use in economic analysis became more remote. At the same time the extensive expansion spread to the economically less developed countries of the world, where statisticians often adopted criteria and techniques imported from abroad without considering their suitability in relation to native conditions.

As national income estimates became elaborated in the form of national or social accounts, the emphasis shifted heavily in favour of the formal criteria of accounting as against the economic significance of the concepts used. The presentation of estimates in the form of accounts which are in balance was a very welcome, though not a revolutionary, development. These accounts focused attention on the logical coherence of the set of definitions used, for instance the saving-investment identity, but they may have left a mistaken impression on many minds. No matter what definition one adopts for particular items, the accounts can be made to balance, provided that the definitions adopted for other items are consistent. Thus the accounts can bring no answer to age-old questions, such as the principle of valuation of farmers' own consumption, and these basic questions were pushed into the background by the novelty of the method of presenting the estimates.

In recent years attempts were made to present national accounts for different countries on a uniform basis. This was done by the adoption of international conventions – almost exclusively following the Anglo-American procedure – which laid down in the formal accounting sense the position and interrelation of the various components of national income. No attempt was made to examine whether the economic significance of a particular item was in all countries the same. There is no reason to assume that this is so; it is conceivable, for instance, that the incidence of employers' contribution to social insurance falls on workers in one country (that is, it should be regarded as a direct tax) but is shifted to consumers in another (that is, it should be regarded as an indirect tax).

Instead of concentrating attention on the uniformity of accounting procedures, one might develop such definitions of the national income and its components that the concepts adopted should be suitable for the same purposes of economic analysis and planning in different countries. As the institutional framework of different countries is not the same, the uniformity of what might be called the operational definitions will result in variations in the accounting definitions. The purpose of the present paper is to comment on some of the institutional and structural differences between countries which make international comparisons difficult.[1] The problem exists even if comment is confined to European countries between which institutional differences are less sharp than between different continents of the world.

The next section contains comments on the concept of the national income, the third section on the place of public finance items, the fourth section on structural differences in price-relatives, and the last on the use made of estimates showing the allocation of resources.

II. THE CONCEPT OF NATIONAL INCOME

At present, European countries follow at least two different definitions of the national income in spite of the unanimous recommendation of the United Nations experts. The western European countries prepare estimates on the basis of the concept which has been in use for some time in the United Kingdom and the United States. It should be pointed out, however, that important western European countries, notably France, western Germany and Italy, although they may submit estimates on an

[1] Similar qualifications apply to comparisons for any given country over long periods during which the institutional and structural framework may have changed.

internationally comparable basis, for their own purposes continue to use concepts which differ from the Anglo-American definition, mainly in the treatment of the government sector. On the other hand, in the Soviet Union and in the eastern European countries under Soviet influence, a definition of the national income has been adopted which is claimed to be based on the writings of Marx and to be fundamentally different from that adopted in western countries.

In a purely formal sense, the Anglo-American and the Soviet concepts are similar insofar as both include incomes which emerge in the process of production, but exclude incomes which arise as the national income is being redistributed between individuals. The difference between the two concepts lies in the fact that in the Soviet Union 'production' is more narrowly defined, being generally (but not completely) confined to the production of physical commodities, to the exclusion of the production of services. Historically the difference in the practice of European countries in defining the national income is of long-standing origin. Already before the First World War the national income estimates for Austria-Hungary, of which the best known are those by Feller, excluded governmental, professional, and personal services. With some variation the successor states of Austria-Hungary have largely followed this tradition and consequently the change-over to the Soviet definition was quantitatively small; it was estimated in Yugoslavia, for instance, that the adoption of the Soviet concept involved a reduction of 4 per cent only in the national income estimates as made previously.

It has been shown by students of economic thought that the definition of national income by Marx was taken over from Adam Smith. Although Smith's ideas may now be considered out of date, insofar as he did not regard as productive what are now called the tertiary industries, the definition of national income used by him was the one most suitable for his analysis. That analysis was concerned with the rising capitalist society of the period and for this reason the concept of national income adopted embraced the area of economic activity which was organized along capitalist principles, and left out sectors of the economy not so organized.[1]

[1] Cf. R. L. Meek, Physiocracy and Classicism in Britain, *Economic Journal*, March 1951, p. 33.

If the national income estimates of the Soviet Union are closely examined, two conclusions seem to emerge. One is that in practice the definition has moved a long way from that prescribed by Marx, and the other is that the present practice can be consistently justified with reference to the requirements of Soviet administration, without recourse to the arguments of the classical economists. The national income of the Soviet Union includes income arising from the production and distribution of commodities, that is, income generated by agriculture, mining, manufacturing, transport, and the distributive trades. All activities which are connected with physical commodities are included: restaurants, at any rate of a certain type, are included since they distribute meals; various banking and financial institutions serving industry are also included, and to a large extent governmental agencies which are engaged in the direction of industry are included in the output of the relevant branches of industry. Further, the definition of what constitutes a physical commodity is not very strict and appears to depend on the organization of production rather than on its results. For instance, machine laundries are included because they use capital equipment and because they utilize the principle of division of labour. Lastly, because of differences in the organization of society, it so happens that a larger proportion than in western countries of professional workers, such as doctors or nurses, is attached to industry and agriculture, and their income appears to be included in the value of net output of industry. As a result of these refinements the quantitative difference between the Anglo-American and the Soviet concept is not so great as it might be supposed on purely theoretical grounds. In Poland, for example, it was officially stated that the adoption of the Soviet concept meant a reduction of about 10 per cent in the value of national income, though admittedly this proportion might be higher in economically more developed countries.

One can argue that the Soviet concept includes only items the maximum production of which is the aim of Soviet society. In that case the concepts used by different societies are not reconcilable and all international comparisons may seem pointless. Alternatively, one can examine the operational significance instead of the abstract concept of national income. Since the size of, and changes in, the national income are a guide for policy-makers, the concept of national income ought to include activities which are within the area of interest of policy-makers, and not activities outside that area. In a country which is economically mature, as for instance the United Kingdom, the distribution of resources is relatively in equilibrium in the sense that under the existing distribution of incomes returns to factors of production in agriculture, manufacturing, and personal services, are approximately equal. This is not necessarily the case of a country which is not fully industrialized, as manpower could be better distributed if more capital were available. In such a country the policy-maker would be interested only in the production and distribution of commodities for which capital is required, and would assume that the supply of personal services could look after itself. His viewpoint is very much the same as that of Adam Smith: he is interested in the area of capitalistic production, that is, branches of the economy which require capital, and not so much in the redistribution of the national income between consumers, as defined by him. The size of the national income depends on objective factors, such as the state of technology and the rate of investment, whilst the redistribution of incomes depends on the behaviour of consumers. If consumers decide, for instance, to spend a higher proportion of their income on personal services, with a given amount of commodity production the national income of the Soviet Union would remain unchanged, but that of the United Kingdom would increase. The major difference in the economic structure of these countries is that in one instance certain branches of the economy operate practically without any capital, and in the other industrialization has pervaded the economy to such an extent that even personal services are using capital equipment, or at any rate those engaged in personal services could find alternative occupation in other branches of the economy.

A very important omission from the national income estimates of most countries is the value of housewives' services, in spite of the fact that this makes the concept less useful as a measure of economic welfare. The reason for excluding housewives' services, apart from the difficulties in measuring their value, is that the policy-maker is not interested in the distribution of family income between members of the family. In the seventeenth century, when domestic servants were regarded as part of the family, the estimates of Gregory King excluded the income of domestic servants, and this exclusion can be justified by very similar reasoning. One might even be interested in the welfare of the working classes only, in which case it is of secondary importance to know how incomes are redistributed between the other classes. This criterion is likely to supply the answer to the problem of the late Lord Stamp whether the national income should be increased when the famous opera singer has an operation and the famous surgeon who performs it then goes more often to the opera.[1]

To put the matter in more general terms, it is sometimes possible to divide the economy into several sectors in such a way that the interdependence between the sectors is only along one or two channels. In that case it is possible to concentrate attention on the major part of the economy in which one is interested and assume that transactions within the sectors excluded have no significant influence on that part of the economy. Thus in a partly capitalistic and partly pre-capitalistic society, transactions within the pre-capitalistic and consuming sectors have no influence on the capitalistic sector, on the assumption that likely changes in the distribution of incomes can have only a negligible effect on the structure of capitalistic production. Similarly, housewives' services can be excluded on the assumption that likely changes in the distribution of incomes within the family have no significant influence on the pattern of production. Thus what is included in, and what is excluded from, the national income is not arbitrarily decided, but is conditioned by the structure of the economy and the pattern of society, which may vary from place to place and from time to time. An evident illustration is the fact that most national income estimates exclude illegal earnings, but what is legal and what is illegal is not the same in all countries and at all times.

In spite of the qualifications made in this section, it would appear that national income comparisons between European countries should be possible, since the quantitative deviation between the different concepts adopted is not very large. It would be a pity, however, if countries even less industrialized than those in eastern Europe, such as Greece, Portugal or Turkey, were persuaded to adopt the concepts used in the western countries, since incomes generated by a number of activities are not only almost impossible to measure there with

[1] It is, however, a condition of the problem that both surgeons and operas should have excess capacity.

any degree of accuracy, but, as argued above, it would be also unnecessary to do so.

III. PUBLIC FINANCE ITEMS

As governments publish detailed accounts of their own financial transactions, it may appear easy to fit public finance items into standardized patterns, taking the description of the various items as the guide for classification. Yet the validity of a formalistic approach to national accounting appears more questionable in the field of public finance than elsewhere. Here the impact of institutional differences is sufficiently important to lead to a reconsideration of many of the national practices of the United Kingdom or the United States before adopting them as the standard for other countries; in particular, it cannot be assumed without investigation that the economic significance of items described by the same name is the same in all countries.

With the extension of government activity into industry, the separation of the government sector from the rest of the economy became more difficult. So long as only the post office was in state ownership, it could be argued whether it was a public service or an industry: with coal-mining, transport or iron and steel in public ownership it is evident that governmental activities as such ought to be separated from the public sector of industry. In certain countries, as in the United Kingdom, industries in public and private ownership can be neatly separated, but elsewhere ownership is too complex to make this possible. In Italy and Spain, for instance, the government has a financial interest in industry through special institutions, and here the share of the public sector in industry, or in capital formation, can be obtained on a number of alternative definitions. In the Soviet Union and eastern European countries, on the other hand, public ownership of industry is so extensive that it is problematical whether any meaning can be attached to concepts to which one is accustomed in western countries, such as the differentiation of turnover taxes from industrial profits.

Similarly, the extension of public expenditure for social purposes has given rise to problems, the answer to which does not appear to be the same in all countries. In particular, what is regarded as transfer expenditure or subsidy, as distinct from government purchases of goods and services, cannot be uniquely defined but must depend on current social opinion regarding these expenditures. Only on this basis is it possible to explain, for instance, the British practice of regarding the pensions of regular soldiers as part of the national income, and the pensions of war-time conscripts as transfer income. Also, in France the government aid to the Paris Opera and similar institutions is regarded as subsidy, but in Britain government expenditure on the British Museum and other institutions is taken as part of government expenditure on goods and services. It is possible that these differences are simply due to arbitrary decisions having been made in the past as regards the classification of items, but they are more likely to be attributable to the underlying institutional differences in the two countries in the field of administration. The most important differences are of more recent origin, due to the development of social security systems. The legal position of these systems varies from country to country: at one extreme they may have the nature of insurance proper and at the other they may be completely integrated in the system of public finance. For instance, social insurance funds may or may not be set aside, and even if they are set aside they may or may not be regarded as independent from other assets of the government. It would not be wrong to suggest that the various accounting practices adopted in different countries are influenced by the institutional framework of social security systems.

The most conspicuous deficiency of the accounting approach concerns the classification of taxes. Since the earliest days economists paid great attention to analysing the incidence of taxation, but current work on national income estimates almost completely ignores this. The major distinction between direct and indirect taxes, for example, is based entirely on formal criteria, and no investigation is made whether direct and indirect taxes are in fact borne by those who were assumed to pay them. Insofar as the validity of this assumption cannot be supported, there is not much point in making a statistical distinction between the two categories of taxes. If one examines the relationship of wages to national income it is not possible to arrive at valid conclusions without having made a correct distinction between direct and indirect taxes. The incidence of employers' contribution to social insurance, for instance, may be on the worker in one country, on profits in another, and on prices in general in a third. Reasoning based on first principles is of little help and the particular conditions of each country ought to be separately investigated. It would not be wrong to suppose that the scale of these contributions itself has a bearing on the issue. In France and Italy, these contributions are high in relation to wages because almost the whole of social security is financed in this way and it is likely that these contributions, at any rate partly, are analogous to wages. In Britain, on the other hand, where these contributions are relatively low and at a flat rate, it is more likely that they are paid out of profits or passed on to consumers by way of higher prices.

To mention a more general problem, in the United Kingdom or the United States national accounting, as all accounting, is based on accruals of credits and liabilities, and not on actual cash receipts and payments. This method particularly affects the financial relationship between the public and the private sector. The procedure adopted in these countries assumes the existence of adequate monetary institutions which look after the short-run finance of the government. In countries which have no such institutions, partly because they are not sufficiently developed and partly because they are constantly on the verge of inflation, the distinction between cash transactions on the one hand, and accruals of credits and liabilities on the other hand, is not very useful. The timing of government expenditure and lags in tax receipts in these countries have an immediate impact on the economy. The best-known example is Italy, where customarily contractors do not get paid immediately by the government but have to have recourse to their own financial resources. In assessing the importance of government expenditure one must decide whether to take into account the value of cash payments to the contractor or the value of the contract granted to him, and this decision must obviously depend on whether the pattern of financial institutions existing is such as to exclude the possibility of further repercussions on the economy. In Britain the repayment of public debt is not considered as part of national income analysis as it is assumed that the investor will hold one piece of paper instead of another, with no consequence on consumption or investment. In France, however, repayment of public debt may have the same inflationary consequences as government current expenditure and, in fact, attempts are made to finance such repayments out of taxation.

IV. THE STRUCTURE OF PRICES

Apart from the problems of definition, difficulties arise when inter-country comparisons of national income are made, because the structure of prices varies from country to country. Of course, without differences in price relatives no difficulties of comparison would arise, since it is the existence of these differences which gives rise to the index number problem. Some of these differences in price relatives are due to differences in local conditions, such as the fact that in Italy rice is cheap relatively to wheat, and in England wheat relatively to rice. But, apart from that, one can find structural differences in prices which make the interpretation of the results of any international comparison somewhat doubtful. By structural differences in prices it is understood that the system of prices is connected in some way with the stage of economic development of the country, or with the pattern of institutions, and for this reason the difficulties which are discussed here are relevant when comparisons are made between countries at different stages of development or following different institutional patterns.

An attempt was made, for example, to evaluate the national income of European countries in terms of dollars for a number of years.[1] For the sake of simplicity it is sufficient to consider two sectors only, that producing commodities and that producing services. It was evident that the rates of exchange applicable to the two sectors were not the same and the gap between them was correlated with the degree of industrialization insofar as the price of services was relatively cheap in the poorer non-industrial countries. As a result of this fact, when the national income was converted into dollars that of the poorer countries appeared to be unduly high in relation, for instance, to capital formation also expressed in dollars. As an alternative procedure the division of national income between commodity and service production was estimated for each country in terms of its own currency and the relevant proportions were applied to increase the estimated dollar value of commodity production to make an allowance for the production of services; this is identical to assuming that the same rate of exchange is applicable to both commodity and service production. Another difficulty with the use of total national income

[1] *Economic Survey of Europe in 1948*, U.N. Economic Commission for Europe, Geneva, 1949.

in terms of dollars was that the figures from year to year moved differently from individual countries' own estimates of their real income, since the two series are based respectively on dollar prices and national prices. Altogether it appeared that for certain practical purposes the dollar value of commodity production was a more meaningful concept than that of total national income.

In general terms it is possible to find two major causes for the difficulties discussed here. One is due to structural differences in productivity and incomes, and the other to government interference with the price system.

The international exchange of goods is expected to bring about certain uniformity in price relatives, subject to the qualifying influence of transport costs or monopolistic practices, but this uniformity applies only to commodities which are transportable and there is no reason to assume that a similar uniformity will cover the rest of the economy. Differences in price relatives for consumption and investment goods may be due to the fact that the distributive margins, which are much larger for consumption than for investment goods, differ from one country to another. The cost of building may also greatly differ from the cost of manufactured goods, since productivity in the building industry is not necessarily correlated with productivity in manufacturing. These differences are further reinforced by a tendency for wages in the building industry to be low in countries where agricultural wages are also relatively low. The quantitatively most important differentials, however, exist between the prices of physical commodities and those of services. Since wages tend to be equal in different branches of the economy, as industrial productivity increases the price of manufactured goods falls relatively to services, and consequently countries at different stages of industrial development would show systematic divergences between the prices of commodities and services. This argument applies primarily to pure services only, insofar as such services exist, such as doctors' or teachers' services. Whereas productivity in manufacturing industry varies greatly from country to country, there is no reason to assume that significant differences would exist in the 'productivity' of doctors or teachers.[1]

[1] It should be noted, however, that insofar as the application of machinery is possible one finds that in the more developed countries productivity in services is also higher, and, in fact, often prices of such services, such as laundry or the processing of photographs, are lower in the more industrialized countries where

The intervention of the government may also alter the structure of prices in a systematic manner. Restrictions on international trade generally increase the prices of consumption goods much more than the prices of investment goods. More important, taxation of commodities alters the structure of prices and such taxes invariably fall much more heavily on consumption than on investment. This consideration may be particularly important in the case of the Soviet Union and eastern European countries which rely heavily on the turnover tax as against the use of the income tax.

V. THE ALLOCATION OF RESOURCES

Lastly, the difficulties encountered in the interpretation of estimates of the allocation of resources should be mentioned. The analysis of national income centres on its allocation between consumption, both by households and by public authorities, capital formation and the balance of payments, and its purpose is to present to policy-makers alternative possibilities in order that they should be able to bring in measures to promote fuller employment or to avoid inflation. The estimates aim at measuring the excess or deficiency of claims on resources over the supply of resources, and this excess or deficiency is to be eliminated by policy measures. Such techniques were originally applied during the war and since in the United Kingdom, the United States, the Scandinavian countries and the Netherlands, and again there is no reason to assume that they are applicable to other countries where conditions may be different.

This type of national income analysis was developed under the influence of the economic doctrines of Keynes, and made particular use of the identity of saving and investment, and of the theory of the multiplier. The Keynesian system is based on certain assumptions, whether they are explicitly stated or not: it applies under conditions of general unemployment and it presupposes the existence of the financial institutions which are to be found in the United States or the United Kingdom. There is no inherent reason to assume that the same theory would apply in different surroundings and hence there is no reason to adopt the same set of statistical tools in all conditions.

such services have been mechanized. For this reason, the customary procedure of assuming that the volume of services produced is proportional to employment in service industries may contain certain dangers.

The type of analysis mentioned follows Keynesian doctrine insofar as its usefulness depends on the fact that expenditure out of a given income can be objectively determined, in the simplest case as a linear function of income; in other words, propensities to consume or to save are taken as given data which are unlikely to alter within the period considered. On the other hand, investment in fixed capital or alternatively all non-consumption expenditure, is taken as the dominant economic variable, which is determined without reference to decisions to save. It is doubtful whether these assumptions were valid in recent years in a number of European countries, as for example France and Italy. In these countries one experienced shifts in demand which could be explained by psychological factors rather than by changes in income and prices, and one also found that investment in fixed capital and also government expenditure was very much directly dependent on ways and means of financing it. One may also come to the conclusion that the dominant factor in recent economic fluctuations in these countries was not the change in investment in fixed capital but the movement in stocks. In such circumstances more attention ought to be paid to variables other than those used in the Keynesian theory and efforts ought to be made to measure more accurately movements in these variables, such as stocks.

The Keynesian system further assumes that sufficient excess capacity exists all round to make a general industrial expansion possible without encountering in some sectors of the economy sharp rises in costs and prices. In terms of national income analysis this assumption implies that it should be possible to reallocate resources between consumption and investment in financial terms without considering supply difficulties. During the war, however, resource allocation was determined mainly in terms of physical quantities and financial resources were allocated subsequently, so as to support the proposed pattern of the economy, and hence the rôle of national income analysis was much more limited. Similar limitations would apply in countries which aim at industrial development and where the obstacles to expansion are mainly physical; here achievement of monetary equilibrium comes only in the second place following physical planning. It may be argued, therefore, that under certain conditions it would be wrong to give priority to the development of national income analysis instead of to an analysis of economic trends based on a collection of statistics relating to prices and quantities, which is a much simpler method.

VI. CONCLUSION

The above discussion touched only on some problems that emerged in the practical use of national income estimates in the course of economic analysis. Their common element was that they pointed to difficulties which were attributable to national differences in the framework of institutions or in stages of economic development. To overcome these difficulties it is necessary for estimators of national income to study more closely the purposes for which these estimates are used, and also for users of these estimates to be more familiar with their exact content. It would appear that one may have to reconsider whether some of the concepts habitually used are equally applicable in all places and at all times. In particular, the economically less developed countries should proceed cautiously in introducing methods used elsewhere and should consider carefully their own individual circumstances and problems.