SOME REFLECTIONS ON ECONOMIC ACCOUNTING*

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Although this article is primarily concerned with examining and discussing problems of national income it contains, in addition, matters relating to national economic accounting in its broad sense. It also deals with theoretical points which are outside national economic accounting, such as the place of science and education in economics and in economic accounting.

The article therefore covers the following three subjects:

1. The need for introducing techniques other than orthodox methods of national accounting in underdeveloped countries.

2. The limitations of standard national income accounts in studying and appraising social conditions, welfare, and other problems.

3. How research, development and education expenditure should be reflected in economic accounting, especially in national income accounts.

1. The Need for Introducing New Techniques of National Accounting in Underdeveloped Countries.

It is well known that in all underdeveloped countries national economic accounting has started only recently, beginning with national income accounting.

National income accounting has provided an incentive for the development of statistics in these countries in a systematic way. One can therefore be optimistic that within a few years the underdeveloped countries will have a good estimate of their national income and its components. No one however expects national income accounting to be able adequately to provide all the data needed by these countries. The importance of inter-industry analyses, especially in planning, is well-known, and so is the significance of the flow-of-funds method in describing economic and monetary phenomena.

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It is evident therefore that, if these two additional techniques are developed in conjunction with national income accounting, we will have a better and more complete picture of the economy. Together they will provide us with more efficient tools for monetary analysis, planning and policy making.

The first step towards the construction of a comprehensive economic tableau for the country is the estimation of national income. At first glance it would appear that the easiest and most logical way would be to start with the national income accounts, and then to proceed at a later date with other accounts.

While many people think that the shortage of available data and the lack of qualified personnel prevent the realisation of such comprehensive accounts simutaneously, it must be borne in mind that :

(a) Statistical information will not become available unless it is demanded .

(b) The best way to obtain qualified staff is to train it on-the-job, during the process of preparing the accounts .

(c) The cost of gathering different types of information will be much higher if data are obtained separately for each given case. Thus, if we are conducting an industrial survey for national income purposes and we do not take into consideration data which will be needed for input-output analysis, or for money flow analysis, we will be obliged eventually to spend more effort to recover lost ground.

For these reasons I think that Iran and similar countries must try to build a comprehensive system of economic accounts and not try to construct, let us say, the national income account first, and then, at a later date, the other accounts. Starting work simultaneously in all directions not only will reinforce the various parts of the account, but will also pave the way for comprehensively co-ordinating the accounts, and will permit the synthesis of the different aspects of the activity of a nation in a «tableau economique».

It must be borne in mind that what has been done on input-output and monetary flow techniques, has not yet resulted in a common universally-recommended procedure and the development of standard tables.There is no doubt that any contribution by the Statistical Office of the United Nations toward the development of such standard procedure and tables will

be very effective in this field, as it has been in the case of national income estimation.

2. Limitations of Standard National Income Accounts for Social and other Studies.

The objective of economic accounting is to shed light on the different aspects of the activities of a nation and to furnish reliable data for monetary, economic and social policy-making. Tables and components of the accounts must be adapted to the needs of the milieu, and to the research requirements of the underlying economic theory. The tables, even the system itself, must obey the exigencies of prevailing conditions and be subject to necessary modifications when required. As these changes and readaptations will to some extent prevent comparative studies between different times and different economies, a possible solution would be to add auxiliary accounts when the need arises. A few illustrative cases, for which it is thought that the standard national income accounts do not adequately provide the information needs and for which auxiliary tables would be necessary are given below:

(a) As the concept of restricted market production is not used in national accounting and we have to estimate that part of national production which is not subject to money transactions, the changes in national product, and the resulting rate of economic growth, cannot be a reliable measuring rod for determining the volume of money and credit needs of the economy. This is especially true of, and causes serious problems in, countries like Iran, where a large percentage of the national product is outside the money economy, and where the rate of growth in the monetized sector is much higher. The need for additional accounts constructed upon the concept of restricted market production is therefore appreciated for countries like Iran.

(b) Regarding separate regional accounts, it seems of some interest to note that the use of political (administrative) bounderies, although of great importance, is not adequate. Each country has to define regional accounts in the light of its own conditions and needs. In a country like Lybia, for instance, the sea border regions, which are far more developed than other regions, ought to be studied separately from the rest of the country, which is largely desert and has entirely different characteristics. In Iran as in many

similar countries, owing to the special conditions of life and work and the type of land ownership, one of the most significant regional classifications is between urban and rural areas. The Central Bank has been able to study living conditions in this way because it conducted sample surveys of family expenditure in 1959 which gave good information about urban areas; similar surveys for rural areas is now underway.

The main purpose of existing national income accounting, based on the functional system and derived from Keynesian theory, is the study of the general equilibrium of the economy through «aggregate» factors. This is a comprehensive and useful summary of the whole economy. But «aggregate income» tells us very little, for example, about the distribution of income within the various social groups. It is generally recognized that the mal-distribution of income is one of the major problems of underdeveloped countries. The elements of the standard tables, despite all the details given in their breakdown, do not provide us with a social description of the country, or with the kinds of distributions among various known groups. It is not insisted that we change the standard tables to provide such social information, but a plea is made that all our resources should not be put into developing aggregate data alone. It is possible to arrive at the national aggregate through procedures that also give us information about the inter-relationship of income, savings, production, etc., within the various social groups, such as farmers, manual and non-manual workers, government and non-government employees, land-lords, businessmen, self-employed workers and employers. The group must be defined by taking into consideration the nature of its economic activity, its social behaviour and its economic reactions. [1]

3. How Research, Development and Educational Expenditure Should be Reflected in Economic Accounting.

Economic accounting must change and adapt itself to improvements in economic theory. One of the main aspirations of economists in the third

1. The efforts of SEEF (Service des Études Économiques et Financieres) in France have been useful in attempting to solve this problem.

See: «Principes d'établissement d'une comptabilité et d'un tableau économique» Paris, 1952 and «Tableau économique de l'anée 1951» supplement No: 98 99 Statistiques et Études Financiéres 1957.

decade of this century was to find remedies for depressions and to create full employment equilibrium. Keynesian economics solved the theoretical difficulties of this problem and the national income accounts reflecting the concepts suggested by the Keynesian School provided the means for policy-making in this respect. In the years following World War II the emphasis has been on the problem of economic growth and development. This new objective led economic theory along a new path with somewhat different characteristics, especially in the increased role of capital formation requiring a longer time period of analysis.

Owing to this fact revisions in some of the concepts used in national accounts were inevitable. Up to the present time the necessary changes have not been made for certain reasons. One main reason is that advances in the economics of growth have not yet resulted in a comprehensive general theory.

One of the most important fields in which the efforts of the economists of our generation should be directed is the study of the role of science and techniques in economic growth.

Only in the last few years have attempts been made in this respect and economists have adequately emphasised the place of technical know-how and human knowledge in economic discipline. They have tried to treat educational expenses as investment. Work in this field comprises the theoretical approach of Professor Theodore W. Schultz of Chicago University[2], the studies of Gary S. Baker and Solomon Fabricant of National Bureau of Economic Research[3] and the French economist Jean Fourastié[4], the statistical works of Paul C. Glick and Herman P. Miller of the U.S. Bureau of the Census, on the relation of education to income capacity[5] ; and

2. «Investment in Men—An Economist's View», the Social Service Review, June 1959, University of Chicago Press.

3. «The Study of Economic Growth» (Solomon Fabricant and others) N.B.E.R. and «Basic Facts on Productivity Change» N.B.E.R.

4. «Progrés technique, progrés économique, progrés scientifiques—Grand espoir de XX éme siécle» and «The Causes of wealth» The Free Press of Geencoe, Illinois, 1960 (First edition in French 1951)

5. «Educational Level and Potential Income», American Sociological Review, June 1956.

the valuable research of Dr. Friedrich Edding of Kiel University [6]

As a result of the above-mentioned studies, there is now a tendency to depart from considering educational expenditures as consumption expenditure

Although not very misleading in short-term analyses especially in the Keynesian equilibrium model, the former treatment of education as consumption expenditure can be a great source of misunderstanding in long-run studies of economic growth. In the Keynesian static analysis the important element is the aggregate of consumption expenditures plus capital formation and it does not matter significantly if a part of capital formation, such as investment in education, is included in consumption expenditure [7]. In the study of economic growth as the decisive factor is the relative importance of capital formation, this sort of treatment can have grave consequenences; for example, it will prevent us from having a clear idea of the capital-output ratio and we will not be able to forecast correctly changes in the economy. On the practical side educational expenditure if treated as consumption, may lead to an under-emphasis by the planning agencies, of the importance of, and need for, allocating resources to education and the training of technicians. Similarly efforts to attract technicians and adapt new techniques from abroad may be neglected; the loss resulting from large-scale emigration of technicians may not be adequately evaluated; and the allocation of credit facilities to educational institutions, may be withheld, as is true in Iran today.

In this connection it is necessary to note that the most important obstacle to development in underdeveloped countries is the lack of technicians and skilled workers. The need for emphasizing the investment aspect of training and education is therefore of especial importance for us.

This new approach to the treatment of education will have a profound influence in national income accounting. Some of the resulting requirements are:

6. «Internationale Tendenzen in der Entwicekiung des Ausgoben fur Schulen und Hochschulen» (International Trends in Educational Expenditure), Kiel University, 1958.

7. A similar case, important in the Keynesian model, is the similarity of treatment of machines-in-stock and machines-in-place.

(a) Expenditure for education must be considered as investment in intangible capital, and not as consumption expenditure.

(b) A part of wages and salaries which relate to technique and know-how must be treated as interest received.

(c) To personal saving must be added the equivalent of personal expenditure for education (actual or imputed).

(d) Reduced salaries and wages paid to part-time trainees and apprentices must be adjusted for the imputed value of the training received.

(e) A similar income must be assumed for full-time students on some basis depending on time spent in school.

(f) An estimate must be made for the amortization of this human capital.

In this connection it is interesting to note the results of a survey conducted by Harvard University. This survey found that the correlation between the profits of corporations and the level of the formal school education of their managers was negative. This would suggest that education must be conceived of in its broad aspects and that all forms of knowledge should be considered and not merely formal education as applied in the survey, even though there are no accepted techniques for assessing the extent of informal knowledge acquired outside the campus.

There is no doubt that expenditure for education is not of the same nature as consumption expenditure and that the income accruing to technicians is not the same as labour income. But to separate this income from wages and classify it with the remuneration of capital is a new mistake that will cause new difficulties and will become a new source of error. It seems to me that technical knowledge and science must be considered as an independent factor of production and progress [8] although it has some similarity with the capital factor and both are affected under the influence of the rate of interest. Nevertheless they differ in many ways:

(a) Depreciation and capital amortization in the case of tangible capital is entirely different from depreciation in the case of human knowledge;

8. This view has been published by the author in September 1959 in an article in Persian entitled «Technique and Knowledge, the Fourth Factor of production» Kanoune Egtessad Tehran.

for example, equipment depreciates when it is used and does not depreciate (or depreciates less) when it is not used. Human knowledge increases when it is used and it depreciates when it is not used (for a long time).

(b) The substance of tangible capital is inert material; the basis of technical knowledge and education is the human mind with all its unlimited potentialities.

(c) Tangible capital formation has purely economic motives but education and learning can have other motives, like the sheer intellectual desire to understand the world and its forces.

(d) The growth and spread of technical knowledge and the increase in the number of technicians seems completely different from the growth of the so-called non-human capital. The propagation of knowledge through daily conversation, contacts, meetings and conferences is of a nature that cannot be found in the case of tangible capital.

(e) The law of diminishing returns does not seem applicable to knowledge and technique.

If this view is accepted, necessary adjustments must be made towards including technique and knowledge as an independent factor of production in national income accounts. As such this factor must be given an especial place in the input-output analysis.

Such a treatment of human knowledge as a form of capital, will no doubt involve tremendous difficulties from conceptual and statistical points of view. Nevertheless, such difficulties should not keep us from the recognition of these realities which might entail significant results in economic studies.