

SOME ASPECTS OF THE REVISION OF THE SYSTEM OF NATIONAL ACCOUNTS IN VENEZUELA

BY LOURDES URDANETA*

*Banco Central de Venezuela,
Universidad Central de Venezuela, and
Universidad Católica Andrés Bello*

Venezuela was one of the first of the developing countries to adopt the new United Nations System of National Accounts. The article describes the reasons for its adoption, the procedures used, methods and sources, and the administrative problems encountered.

INTRODUCTION

This paper was written for a regional meeting of IARIW, as a contribution to the current discussion on the application of the new United Nations System of National Accounts¹ to the conditions of developing countries. While describing the situation in one country, Venezuela, it recognizes that problems of administration and the flow of information will naturally vary from one country to another.

Causes Leading to the Revision

In Venezuela, several heterogenous causes led to the introduction of the new system of national accounts. In the first place, the methods being used in the transformation of basic data into the aggregates which constitute the accounts and tables of the accounting system needed revision, due to the appearance of new statistical sources that had not existed when the old procedures were established. These new sources made possible the incorporation of additional information or closer approximation of the phenomenon being measured. In other words, it was a major necessity to revise the methodology due to changes occurring in the statistical scene, although this, of course, did not necessarily imply a new accounting system.

In the second place, although work on national accounts in Venezuela began at the initiative of economists in the Central Bank, along with academic interests and external encouragement, the beginning of economic planning in the country led to demands for statistical information that went beyond the data contained in the old system. In such circumstances work had to be done on the accounts and supporting tables of the old system, and also on many additional tables related to separate sectors and to financial transactions. At the same time interest in econometric models grew. A simulation model was constructed for the Venezuelan economy comprising major aggregates, and the Central Bank started work on a monetary model. Monetary analysis was expanded to greater detail and

*The views expressed in this paper are those of the author and not necessarily of any institution or organization.

¹United Nations, *A System of National Accounts*, Series F, No. 2, Rev. 3, New York, 1968.

correlated more intensely with actual phenomena. This tendency may be clearly observed in the annual publication of the Central Bank. The same orientation prevails in the analysis of public finance and economic and financial relations with the rest of the world. Another group pressing for more data and more detailed accounts was the private sector of the economy. As bigger units replaced the numerous small enterprises, market research became fashionable and necessary and with it came the demand for sector accounts.

Finally, it became inevitable to change the base year, 1957, used in the previous system, for it was already too far away and changes since then had become quite considerable. However, in order to change the base, decisions had to be made as to the selection of items to be included in the new price-indexes, and as to whether to apply single deflation or to adopt in certain cases methods of double deflation. For the purpose of deciding these problems, there was a need for the construction of time series on production and inputs of different sectors.

Thus, a major effort in reorganizing and streamlining the existing technical procedures and the introduction of new procedures became necessary even if one had in mind only the restricted purpose, but the situation seemed propitious to adopt simultaneously the new type of presentation in the form of the revised system of national accounts. This would require a greater effort, but there were two distinct advantages.

In the first place, adoption of the revised system would permit all new information to appear within the system, which was expressly designed to enhance the coherence of all kinds of information and of all economic units. Until recently, the information from private or public entities, except for big corporations, did not include products or activities of secondary importance to the enterprise and often contained ambiguities between production and sales; moreover, the reference period used for actual transactions frequently did not coincide with the one used for financial information.

In the second place, a task which sooner or later should be done would thus be initiated. In such circumstances, the additional effort seemed to be a systematization of much of the work that was being done by the National Accounts Department for its different clients.

While the aspects just referred to were favorable to the introduction of a new system, at the same time many others worked in the opposite direction.

First, for those who were opposed to changes of any kind, the revision meant not only that a broader area would be covered but also the appearance of some new concepts and the substitution of new figures for old ones, since the sources, classifications and estimates would be simultaneously revised. In many of these aspects, considerable investment had been made: books and studies containing figures which now would be replaced by new ones; teams of professionals in the social sciences who had invested time and effort in mastering terms and concepts, which now would be replaced; professors who would have to alter considerably their teaching material and, what is still more important, the press and the public at large would have to absorb new expressions.

Besides, there were those who pointed out that if an extension had to be made, it should go much further than the one contemplated by the United Nations to including subjects like regional accounting for sub-regions of the country,

specific presentation of terms of trade, introduction of socio-economic information like unemployment, under-employment, social indicators, income distribution and the revision of concepts referring to environment and natural resources.²

The importance of such proposals is recognized by almost everyone, but it is also quite clear both that in order to be able to measure them adequately a coherent theoretical framework is needed, and that up to the present we lack the necessary statistical information.

Extension of Revision

In such circumstances, where some were resisting all kinds of changes while others wanted to carry them much further than initially contemplated, it was felt that efforts had to be made in all these fields, but in the first stage they should be concentrated in carrying out the main features of the new SNA. Up to now, the following accounts and tables have been prepared: Series of Accounts for the Nation; Commodity Accounts for six specific groups of products and one for the remainder (obtained largely as a residual item); series of Accounts for Other Goods and Services; Production Accounts for Industries by the one-digit classification of ISIC and two digit classifications for Mining and Manufacturing; Production Accounts for Producers of Services of Public Administration and Private Non-Profit Services to Households and Domestic Services of Households; and Income and Outlay and Capital Finance Accounts for the main five institutional sectors proposed by the United Nations. In general, almost all the items required were obtained, with the exception of casualty insurance premiums and claims and non-funded employee welfare benefits except for Public Administration.

One of the accounts that was prepared in response more to recommendations of the UN than to pressure of domestic demand was the one referring to Private Non-Profit Services to Households; the total amount corresponding to that account—somewhat above Bs. 300 million—is rather small when compared with others of the same group and approximately equal to Domestic Services. The construction of that account was due more to the belief that if it were so highly recommended by authorities such as the UN there must be something of much importance to it, even if we were at the moment unable to see its significance. The fact is that initially we had no idea what the magnitude of that item would be. Such ignorance obliged us to carry out extended work, due, among other reasons, to the extreme dispersion and small size of the units corresponding to it. As a result, we obtained information of certain social interest, but of rather minor importance within the total aggregate. Looking back, we do not regret having made the effort, as it has given us a familiarization with the actual importance and characteristics of this sector. Nevertheless, once the initial information had been obtained we tried to match the effort and the use of resources to the actual economic importance of the phenomenon being studied, using it as a reference and moving it from year to

²From the point of view of the most recent development and specific interest of Venezuela it is quite clear that the emphasis given to the last mentioned subjects has been insufficient. This probably reflects the unsatisfactory state of social accounting in reference to these problems on a world-wide scale.

year by means of very simple and cheap indicators. Of course, there is a trend of thought which forecasts a more than proportional growth of this sector. So, we are following the procedures described, at the same time being alert that no significant increase in that sector escapes our attention.

As far as the special accounts for developing countries are concerned we have followed a strict interpretation of the recommendations of the UN, but we expect that in this field our future works and publications will be more detailed since they correspond to basic problems of the national economy. In this sense, it is quite true that underdeveloped economies (where there is usually also an underdevelopment of statistics) are nevertheless in need of more detailed statistics in certain areas than those needed in developed economies. Up to now, no special effort has been dedicated to the accounts by regions, though their importance, more social than economic, is continuously growing. We have worked on accounts for the Key Sector of the Economy (Petroleum) and for the Public Sector, and series now exist for the years beginning in 1968.

Methods and Sources

It is important to point out that the decision to work with the revised system meant that it was considered a useful orientation for the development of the country's economic and social accounts, and this, of course, depends, in the first place, on the particular requirements of the national economic realities. Thus, the total number of accounts and tables to be prepared could be more than those required for the annual information of the United Nations and in international comparison. But once the adoption of the new system had been decided, several preliminary tasks had to be accomplished. One that required immediate attention was the need to explain the new system in detail to the group of technicians who would be in charge of implementing it—and also to the producers of the basic statistics, whose results would be used in compiling the accounts. This took much more time than what had been thought at the beginning, since the main document published by the United Nations, "A System of National Accounts," Series F, No. 2, Rev. 3, is not easy to read and understand.

There was also a different kind of problem: more or less simultaneously with the change of the system, and possibly in part because of it, there were changes in the classification of economic activities (ISIC). Much effort had to be employed in reclassifications, due to the fact that statistical questionnaires are pre-codified for use in computers, and also some of the offices collecting basic statistics had not yet changed over to the new classification.

Another task to be accomplished related to estimation methods. After studying the methodological requirements of the new system, the group of technicians assigned to prepare the estimates submitted proposals on the methodology to be employed: they compared methods that had been formerly used and proposed what was needed in light of the new requirements. For the aggregates not previously estimated, new methods had to be found. Individual proposals had to be reconciled with each other: sometimes it was observed that complex and costly procedures were proposed for rather marginal sectors and an equilibrium had to be established between the amount of effort and the

significance of the phenomenon being estimated. Sample surveys were used to measure the importance of such sectors as small enterprises, professionals, street vendors and others for which there were no registers and whose activities refer mainly to services. A considerably greater effort was made in the case of single proprietor trade units. To cover such activities, a survey of eight cities was first undertaken. Later this was extended to cover about forty cities that represent approximately 65 percent of the total.

It is to be noted that in these cases, as in others of similar characteristics, the policy followed was to avoid, by all means, overestimation of the dubious item and to work with figures that were clearly underestimates. In such cases, the policy is to exert pressure on the corresponding statistical agencies to include the dubious areas in their work projects.

When comparing the available sources of information with the minimum requirements of the new system, three separate categories were established: first, the data needed to prepare the estimate of one single year, second, the data necessary to continue the estimates in the future, and third, the data necessary to obtain retrospective series.

The requirements of the first and second case were similar; in many cases the methodology used for the initial year could be followed in identical form in future years. In others, where the methodology leaned heavily on a census or on an extended survey that cannot be repeated yearly, additional techniques of estimation had to be produced. Moreover, when the estimates cover a period of several years, the necessity arises of having estimates at constant prices, which involve a completely new set of problems. Increasing inflationary pressures made such work more urgent.

Finally, the third group relating to estimates for past years, although considered of importance, was left to be done later on and work on that will begin soon. The importance of such estimates is due to the fact that as long as they are not available there will exist a precarious situation in the sense that the figures from 1968 on, which is the year where the new estimates begin, will not be comparable with the previously estimated series for 1950 to 1968, based on the classifications and concepts of the old SNA.

The methodological problems of making estimates for past years differ from those for current years. One has to work with many simplifying assumptions because it is almost impossible to collect new information for years prior to 1968. Instead of reformulating independently each item in the accounts and tables of the new system, we shall try to compile series for certain indicators along with the new series.

The methodology corresponding to the first group of problems (derivation of estimates for a single year) was the most urgent one and therefore a list of sources of information to be developed was established: surveys of industrial production, trade (including data on cost structure and classification of sales by destination, in the case of imports), private services, very specific questionnaires for ministerial departments and public enterprises, computerized questionnaires for financial institutions, and in addition a program for the use of information contained in income tax files. Each of these sources presented separate problems which had to be solved simultaneously. The new results had to be compared with those

obtained previously using the traditional channels and more than once had to be revised, and occasionally the whole process had to be repeated.

With surveys, usually, the main difficulty was the coverage: if it did not cover the whole territory but *a priori* selected areas, there was always the problem of appropriate weighting. It was decided that the weights should be estimated in a preliminary way, and then fixed definitely only after national surveys were carried out in collaboration with other institutions.

The agricultural statistics supplied by the Ministry of Agriculture changed very little, except for the inclusion of agricultural services, for which, although there were no alterations in the figures, the method of treatment changed substantially. As far as mining is concerned—with the exception of oil and iron ore—the treatment was similar to that for services, but due to its small importance, its underestimation does not have much weight in the aggregate.

A continuous and serious effort has been made to improve the estimates for construction. In the case of Venezuela, this is a crucial sector in the business cycle, due to its employment capacity and to the fact that it absorbs a substantial part of government expenditures, and furthermore because it is very sensitive to general business conditions. From the statistical point of view, the main problem is that almost all data collected refers to intentions (construction permits) and it is not easy to derive from this information the work actually done. The method used employs surveys based on the construction permits register; but here, one comes up against the fact that, usually, work in progress is not reflected in any acceptable kind of accounting figures. The method finally adopted is based on the subdivision of each project into its component phases (study of soils, foundations, masonry, electrical work, plumbing, etc. . . .) and then, estimation of the cost of the different phases. Concomitantly, a similar price index for construction has been prepared.

Finally, the situation for electricity, petroleum and iron ore is a completely different one. In these categories, the number of units is relatively small and companies that are involved provide a considerable amount of detailed information. In general, as far as requests for information are concerned, the main problem is due to lack of homogeneity in financial statements. In those cases where additional data was requested which normally would not be included in routine statements, a great detail check was necessary to see if such additional data were consistent with information initially submitted, which often was not the case. This implies a considerable loss of time and therefore in order to meet the deadline one has often to provide provisional estimates.

The Income Tax Files—vital for the income and outlay and capital finance accounts—presented a number of special problems. In the first place there is the problem of confidentiality of the individual questionnaires. On the other hand, when working on a considerable number of questionnaires, there is undoubtedly a bias due to underreporting, especially for net income. Physically, the large volume of the income tax file represents much work even if it is computerized which is the only way of handling it, but this brings up all the problems inherent to computers, which, in our case, are far from being satisfactorily solved. Last, but not least, this information has a lag time of about 18 months.

To face such difficulties it was necessary to establish an active co-operation between tax authorities and the Central Bank; such co-operation produced results that seemed acceptable for many purposes, although there is a considerable time lag in presenting the final data. Comparisons between survey and tax data seem to indicate that they tend to coincide, and the differences that could be observed were mostly due to including, in one case, all the activities, and in the other, only the main activity of an enterprise.

In manufacturing, the value of production estimate is based on a national survey for 1966 (carried forward by means of a production index based on a smaller sample which is prepared by the Central Bank). The figures obtained for 1973 were checked against those of the new national survey. This comparison showed that there was a bias towards underestimation, and the figures were all correspondingly adjusted. The use of each product was determined by the nature of each item, using the commodity flow approach. Cost structures were taken from data of the Ministry of Finance. Information on mining (other than petroleum and iron ore), productive units in construction, and personal services was difficult to obtain and had to be based on improvised *ad hoc* surveys. We consider this information not very reliable, especially on costs. Value of production of minor mining activities (representing a small percentage of total mining) is calculated from export values and sometimes by means of extrapolations from the Industrial Census of 1963. No major effort was intended in this area, due to its small importance. More serious is the notorious underestimation in the area of personal services.

A great effort, possibly not proportional to its contribution to total product, has been made on land transport. In this sector, the statistical problems are due to its heterogeneous composition, where modern enterprises coexist with archaic units of production, and consequently, the sector had to be divided into several subsectors with different working hypotheses and estimation procedures. The information available referred to passenger cars, buses, school buses, trucks and lorries. Surveys were undertaken on passenger transport in cars and city buses; transportation of pupils in the Metropolitan Area; interurban transport; and one on transport enterprises, in order to establish production values and the composition of costs. In each case, the main purpose was data on income and costs.

By contrast, these problems did not arise in the rest of the sectors such as communication, electricity and financial institutions, where the number of units is rather small and the relevant information is duly centralized.

Information on real estate is based on the 1961 Population Census, which gives the stock of dwellings by quintas, houses, apartments and ranchos and, when rented, presents the distribution by the amount of rent. This benchmark information has been extrapolated by means of indexes of rent based on data from the Development Ministry. Cost structures in this sector rely on data from the Ministry of Finance and general assumptions. (The annual rent is equal to 12 percent of the building value with an average life of 50 years; in the case of ranchos annual rent was assumed to be 50 percent and average life five years.)

Estimates of capital formation in machinery and transport equipment rely on import statistics and on direct information from enterprises, complemented by an

inquiry made by the Central Bank on differences between f.o.b. and c.i.f. valuations and on trade margins. Fixed capital investment and stock variation by industries were taken from the income tax returns.

Total consumption expenditure is a residual item, and its distribution by purchaser was obtained through the commodity flow method, based on production and import data, and on an inquiry on trade margins and information as to variation of stocks taken from tax returns.

We have been unable to solve the problems related to computers, although in this field some progress has been achieved.

Administrative Aspects

Preparation of National Accounts is done by the Department of National Accounts of the Central Bank. This department obtains active co-operation from other units of the Central Bank, especially from the Department of Statistics and the Department of Economic Studies. The different tasks are proportionally distributed among these departments in such a way that the Department of Statistics supplies basic data, the Department of National Accounts builds up the accounts and other aggregates and the Department of Economic Studies uses them in their analysis.

However, this division of labor is not clear cut. Some collection of basic information, especially in financial matters, is done by the National Accounts unit, and part of its time is devoted to analyzing the results not only from the statistical and technical point of view but also as to their economic significance and to preparing socio-economic interpretations and comments. This heterogeneity of functions is thought to be, by many critics, a negative feature: by spreading over several different functions resources intended originally for constructing accounts, less can be achieved in what is considered the core and main objective of the National Accounts unit. Total co-operation is needed amongst the units in charge of the three functions: the collection of basic data, the construction of the aggregates and the analysis of data. The results should be given to everyone with due information on how they have been obtained since it can be dangerous to analyze them without proper knowledge. The division of labor would be justified because of the quantity of specialized work involved.

Due to such problems, the organization of the department has been the subject of recurring criticism and several changes have been made. In the beginning it was divided in four groups corresponding to "Production," "Income, Consumption and Capital Formation," "Flows of Funds" and "Statistics." A first change was introduced when the last named group was established as a separate Department, in charge of a wide range of statistics—not only those required by the national accounts aggregates but of all surveys and price statistics. Once the new system was established the Department of National Accounts was divided in two sub-groups, one in charge of estimates on production and capital formation on a global scale (following the flow of commodities approach and private consumption expenditures at current and constant prices), and the second in charge of the financial estimates, including current and capital transactions and estimates of capital formation by institutional sectors. Each sub-group worked with an advisor

for the specific problem to be handled and the financial division was further subdivided in two, covering current and capital transactions respectively.

This type of organization proved soon to be inadequate, due, above all, to the fact that handled in this way, basic data frequently lacked consistency. For instance, in order to be able to reconcile the operating surplus from the production accounts with savings from the income and expenditure accounts it is preferable that the actual computational work be handled by the same person. This type of organizational problem emerged especially in the case of the Consolidated Accounts for the Nation. When the new organization follows sectorial (activities) lines, all accounts of the same sector are prepared by the same unit. But at the same time much care was taken that information that would affect more than one unit would be revised and coordinated by somebody outside of these units.

Summing up, the introduction of the new system created additional work, but at the same time it enhanced the coherence of the figures and estimates that are presented.

In connection with the problem of what should be the internal organization of a social accounts division, the question arose to what institution it should belong. The usual candidates are the Statistical Bureau, the Planning Office or some institution like the Central Bank.

In Venezuela, like many other Latin-American countries, social accounts are prepared at the Central Bank. Some countries prefer to have them in the Planning Office. In the latter case, the accounts emphasize real transactions and all those necessary for planning purposes and especially the input-output tables. Where they are prepared at the Central Banks, the monetary aspects are stressed and the flow of funds is well developed. Planning Offices usually make a more intensive use of social accounts than Central Banks. But this can also be held against the social accounts unit being an integral part of the Planning Office. At present, in many Latin-American countries and also in Venezuela, there is an opinion current in favor of transferring the social accounts to the Statistical Office. If this could be done, a greater communication between basic statistical series and social accounts would be achieved, the latter assuming more fully than up to now their role of framework for the collection of basic data. On the other hand, it could also mean improved accuracy since people in statistical offices usually prefer direct measurements to those resulting from the use of ingenious procedures based on indicators or "proxies."

However, where the statistical situation has not developed to the point where most of the aggregates can be measured "directly," many "indirect estimates" are unavoidable. Caution and resistance of some statistical offices in the area is due precisely to this fact.

Additional Points

Educational Effort and Popularization

Publication of the accounts over a period of many years has conditioned a vast public, including the Press, as to the meaning and significance of different concepts and aggregates, familiarizing the people with an established nomenclature, and many resented the new concepts introduced (disposable income;

operating surplus, etc. . . .). This attitude was more frequent among non-specialized users of national accounts, but it could also be observed among economists. It became evident that some effort directed towards educating or re-educating the users of such accounts was necessary. Short courses for professionals were organized, and changes were introduced in the corresponding courses at universities. Other means were used so as to make the new concepts popular with the general public. The best results were obtained at the graduate level whereas the major difficulty was found among the economists who had been educated in the earlier school of concepts and in the public in general.

Courses on the subject offered by universities today are based on the new system. At the Central University social accounts comprise two semesters of approximately 60 hours each, covering the global system, input-output, flow of funds and balance of payments. The Catholic University "Andrés Bello" dedicates about 75 hours to the subject and centers it on the global system with additional explanations on balance of payments and flow of funds. Other universities present the subject more or less to the same extent.

At the beginning the Social Accounts Department also organized courses limited to Central Bank personnel in order to prepare its own employees for the new work. At that stage one of the main difficulties was the faulty Spanish translation of the United Nations publication, *A System of National Accounts*, and the lack of a complementary manual. In 1972 the Central Bank of Venezuela published *Methodological Aspects of Social Accounts in Venezuela* with the purpose of mending this deficiency.

Revision for Former Years

One of the drawbacks of presenting the new system to the public was the impossibility of revising all former years immediately. The new presentation initially covered the years 1968 and 1969, and since then the subsequent years have been added. Because of the changes in figures and in some of the concepts, such series are not comparable with the aggregates for the years prior to 1968. This brings forth a critical situation for those who have to work with long-term trends and projections. Even though this situation had been foreseen, the difficulties inherent in a revision of the series into the past had been underestimated. Work on the period 1960-68 is now in progress, the results of which should be ready in the near future. Once this has been accomplished the revision will be extended to the period 1950-60. One of the difficulties that arose in doing this work was the fact that there were considerable changes in the sources used for constructing the accounts and the procedures had to be adapted year by year to the changing conditions according to the available information. Therefore, in the construction of the accounts a uniform procedure for every year cannot be used.

Unification of Data

The revision was a good opportunity to put an end to the existing situation, where two institutions within the country were publishing two different sets of data for the same social accounting aggregates. While the revision was under way, a working group with representatives of the two institutions was set up on the specifications to be used in the construction of a single set of figures. Such

agreements are easier when there is a firm statistical base from which the aggregates can be built up; the weaker the objective statistical base and the greater the "assumptions" are, the more difficult it is to reach agreements and consensus regarding the estimates.

Even if not directly related to the new system, the revision brought up the problem of pricing for exports and imports. In accordance with new legislation, pricing of petroleum exports that up to then had been based on prices declared by the exporting companies were from then on based on the prices established by the government. For imports a similar procedure was introduced owing to simultaneous changes in customs legislation. In refining activities parallel alterations were applied to the valuation of the crude inputs.