

A METHODOLOGY FOR INTEGRATING HOUSEHOLD SURVEY DATA
INTO A NATIONAL ACCOUNTS FRAMEWORK

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Introduction

The idea of using income and expenditure household surveys to elaborate household sector accounts in a national accounting framework has long been considered. Generally, the problem has been viewed as the relationship between macro and micro household statistics. The vital importance of both, micro and macro household statistics to monitoring economic development and social conditions is widely recognized. It has also been agreed that integration of these two sets should be made, not only that they should be supportive of one another, but also that they eliminate differences between national accounting and surveys statistics. Since in most countries macro statistics developed independently from micro statistics, there are many challenging tasks ahead for integration.

Integration however, does not mean identity and some differences between the two sets of statistics are necessary. The differences stem from the diversity of the observation conditions. It is not only a technical problem of collection of data; some kinds of transactions are visible and significant at the macro level,

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for example, regarding household's saving, actual contribution to social security schemes, insurance claims, etc. Otherwise, some other transactions are detected only at the micro level.

It has been generally agreed that some differences must be maintained. The task of integrating micro and macro statistics should be restricted to identification of the flows that cause differences.

The problem has received considerable attention since the publication on the subject by Nancy and Richard Ruggles. The problem has also been raised along the process of revision of the System of National Accounts (SNA)* particularly in those issues related to terminology, imputations, coverage of transactions and transactors, subsectorization of the household sector, boundary problems of income and consumption of households and so on.

The SNA framework shows the areas of economic analysis and policy in relation to production, consumption, accumulation and asset accounts for the nation as a whole. It does not dwell in any detail on the specific uses for sector accounts which in the case of the household sector the most relevant are the following: consumer's demand analysis, studies on national wealth, distribution of income, analysis of saving behavior and so on.

* The UN Statistical Commission launched in 1982 a review of the present SNA (1968) in order to reconsider its conceptual framework and also harmonize it with the statistical standards used by other international organizations. This review is scheduled to end in 1993 with a revised version of the SNA.

The suggestion now is to incorporate them into the SNA framework through the creation of different hierarchical levels where data for higher level groups are built up from data of lower level groups.

Recent technological development in the compilation, storage and retrieval of data have created a new situation on the treatment of micro data. With new technologies available today in many countries, storage and data retrieval are less onerous. It is possible to use the micro data in a new and more direct way, and it would be possible to reach the hierarchical incorporation mentioned above.

Integrated compilation of national accounts.

Another issue stemming from the process of revision of the SNA is the need to reorientate compilation of national accounts towards compilation in an integrated manner covering, to the extent possible, all transactions referring to production, income and distribution, finance and accumulation of each unit or institutional sector that take place in the economy. It would include not only GDP data but presentation of comprehensive supply and demand tables linked in a consistent form to institutional sector accounts. The traditional emphasis on production accounts is now being changed to a new focus on integrated sectoral analysis. This focus has the advantage that data for individual transactors (e.g. members of the household unit) are already available in an integrated manner. Aggregation of these data becomes, therefore, information for groups of transactors (e.g. household sector). Consequently sectoral integration follows naturally the recording information by micro units.

The Statistical Office of United Nations (UNSO) is now developing a methodology to implement the framework for this approach in which the main focus is the sectoral integration of data. It

is believed that in an integrated framework it is possible to analyze all aspects of a sector, i.e. production, income and outlay financing. This focus is becoming more attractive for analysis given the increasing of technological possibilities and the interest in micro as distinct from macro analysis. Furthermore, this development facilitates the use of results of sectoral studies in increasing usefulness of national accounts analysis.

As a part of this development UNSO has been working in developing the linkages to incorporate data from an income and expenditure household survey in the household sector account of the SNA. This will be described later on.

The household sector in national accounts

In its most simplified form, the SNA divides the economy into three sectors: government, enterprises and the households sector. The enterprises sector comprises only corporate enterprises. There is a large group of very small units that do not keep formal accounts and which are included in the household sector of the economy.

In national accounting practice the household is therefore defined as the residual category of domestic activities and is often estimated as a residual. Deriving the household sector in this way is non advisable for many reasons. Firstly, because the sector usually represents about 60% of domestic expenditure. On the other hand, as a unit of observation the household is the appropriate "mediatory" entity in which individuals can be linked to the whole economic system. The household unit is where reproduction both of the system and of human beings takes place. In other words, it is the unit where interaction of the socioeconomic determinants and characteristics of individuals can be best observed. Everybody has his/her own experience as a

member of a household. The decision on whether or not to enter the labor force, to acquire labor skills, to vary the size of his/her family, to seek health and education services etc., depend largely on how this interaction works within the household. In spite of its key role in economic analysis, the treatment of the household sector in many countries' accounts has been neglected, maybe because of the difficulties mentioned in the above section of this paper.

The use of household surveys in national accounts

As stated, there are integration issues that have to be clarified in the future. Nonetheless the national accounts framework provides a convenient basis for defining the revenue and expenditure concepts to be used in household surveys. Likewise, household surveys are potentially an important source of information for national accounts which has not been fully used until now. This is so because national accountants have little to do with the development of household surveys and because household surveys statisticians are not familiar with the conceptual framework of national accounts. Besides, household surveys are carried out with different objectives and show important differences in temporal, conceptual and geographical coverage.

Income and expenditure household surveys should play an important role in national accounts development because they may provide the basis for an accounting approach to register data on revenues, expenditures and financial transactions of households, providing the link between household sector accounts with accounts for other sectors. Household survey data is almost the only independent source derived directly from the household while, as was already mentioned, in national accounts the household sector data are usually derived indirectly through information obtained from other sectors.

Development of a methodology to integrate the Income and Expenditure Household Survey carried out in Mexico into the framework of the Mexican accounting system.

As part of the methodology which is now being developed by UNSO, it was decided to integrate data from the Mexican survey to its national accounting system. The decision to take Mexico as a case study was due to many reasons. First, because both, the national accounting system and the household survey program have a long tradition in Mexico and they are highly recognized among statisticians. As well, the project of national accounts is developed in the same institution (INEGI) where the income and expenditure survey is carried out. This situation is particularly advantageous because the experts of both projects work in close collaboration with one another, minimizing the endless procedures which sometimes are needed to coordinate activities among different institutions.

Characteristics of the Mexican Survey

The Income and Expenditure Household Survey (ENIGH) of Mexico was carried out in the last quarter of 1983 and throughout 1984. Information on approximate 25,000 households was collected in five stages of field work. Each stage lasted three months and in each of them a representative sample of 5,000 households at national, urban and rural coverage was gathered in order to obtain reliable estimations.

Among the main objectives of the survey were to obtain information concerning the structure and the distribution of household salaries in cash and in kind as well as of interest, rents, transfers, gains, etc. Information on family structure and the economic activities of their members and the structure and the amount of their expenditures. A particular characteristic of the Mexican

survey is that detailed questions for producers were included. Since these questions were designed in terms of production, the information gathered, with some adjustments, has the possibility to be used to elaborate a household production account.

In defining the concept of household, this was understood as the "housekeeping unit" that included all persons living in the same dwelling and sharing food and housing costs. In general, every member of a household, whether native or foreign, was considered a "usual resident", except those members who were absent for some period of time

The process of integration

In order to utilize the results of the survey for the sector account of the compilation framework, a detailed study of the methodology and the conceptual, temporal and geographic coverage was made. Due to some methodological adjustments that were implemented after the first stage of field work, it was decided to utilize data from the second sample period, i.e. the first quarter of 1984. Data of the three remaining stages were still in process.

The selected quarter comprised a total of 4963 interviewed households. The variables under investigation have different time periods of reference related either to the week of the survey, or to the previous month, quarter, semester or year, in accordance with the frequency at which different kind of goods and services are usually acquired.

Because production was not the main focus of the survey, data were collected, but not originally processed with detail for "households with production" (households where at least one of its members is entrepreneur or own account worker). The information contained in the original questionnaires was then later processed, given that these data are indispensable for

the elaboration of the Supply and Demand Table. This was done with the help of microcomputers, using DBASE 3 PLUS software.

In order to elaborate the respective production accounts, different data files of households with production were created: for urban as well as rural households and for activities like agriculture, manufacturing, "maquila", trade and other personal services. After adjusting inconsistencies, these data were linked to the main survey data files.

After analysis of the survey's concepts, a bridge table was designed and developed with LOTUS software (see annex I) to determine which of them would fit within the central framework of the SNA. The first column of this table contains all survey's items identified by its name and the key number assigned for processing. All the values of the survey's transactions classified by activity of the household were allocated in the next columns.

Subsequently, these values were adjusted to the one year period of reference and also adjusted with the annual average of inflation. The items corresponding to all the accounts of the sector were included in the next column. In that way the relationship between both systems was established. Later, different adjustment were made to those survey concepts who did not fit with the SNA framework. The last of this set of adjustments was the expansion of data of the survey's sample. This was made in the final stage of the table in order to avoid a large distortion. Final figures and statistical discrepancies were to be shown in the last two columns.

Findings and Shortcomings

After completing these tables, it is possible to state that integration of data of both systems is feasible. The household survey data became a substantial point of reference for national account figures in the same way that national accounts are the appropriate

framework for household surveys design.

It is clear that every country has its own experience and the set of adjustments to be made would depend on conceptual, temporal and geographical coverage of its surveys. The following were the major findings and shortcomings in the case of Mexico:

An urban bias was detected into to the sample, e.g. that rural households are under-represented. As the sample universe was not the total of households with production but the total of households of the country, some figures like those related to remunerations of employees in agricultural activities were low compared with the figures of national accounts.

Because the changes in stocks were not taken into account in the survey, the concept used to measure production in the survey is referred only to the sales revenues. Concepts like direct and indirect taxes, fees for irrigation paid to the government as well as some property income withdrawals of entrepreneurial profits and payments of life insurances, are not well represented in the survey and can be covered more accurately through official registration. Some concepts like commissions, tips, and other payments in kind are the reason for discrepancies between the survey and the SNA in so far as the survey did not cover adequately neither current transfers to or from the rest of the world or donations.

It has to be noted that in 1984 the annual average rate of inflation was at 60% with decreasing monthly rates throughout the fiscal year. The high rates of the first quarter stemmed from the previous year in which the Mexican economy shrunk by more than 4% after years of continuous growth. Consequently, it could be assumed that the consumption levels of the first quarter 1984 were below the normal level and increased as soon as the price level stabilized and the

production increased. This assumption was confirmed later by the SNA estimates and survey data have to be adjusted in order to avoid discrepancies with the SNA.

All the components of the production account for the first quarter of 1984 obtained from the survey were extrapolated with the help of data of the quarterly sectorial GDP at current prices calculated in the statistical office of INEGI. That procedure demonstrated that the results of the calculation for the institutional accounts are considered to be sufficiently representative.

Finally it should be mentioned that the composition of the consumption expenditure of households resulting from the survey was very similar to the one calculated in the SNA through indirect procedures.

At this point, it may to be stressed that the data of the remaining three quarters of 1984 could not be processed in time to be included in this work, which is consequently based on the available data of the first quarter. It is possible that adjustments may be avoided with the data for the whole year, particularly those related with the representativeness of the sample.

The lesson of this experience of the applied methodology in the case of the Mexican systems became very useful to many countries who became interested in using household surveys for national accounts compilation. I suggest to analyzing the problem in other regions, to formulate a well developed methodology that would be able to improve both national accounting procedures and household survey design.

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Code Ident	SURVEY ITEMS				WITHOUT ADJUSTMENTS				WITH ADJUSTMENTS			
	Industry	Services	"Maquila"	Trade	Industry	Services	"Maquila"	Trade	Industry	Services	"Maquila"	Trade

E N I G H				S M A C A T E G O R I E S			
WITH ADJUSTMENTS FOR INFLATION				Income, Expenditures and Capital Flows			
Trade	Industry	Services	Total	Trade	Industry	Services	Total

A D J U S T M E N T S				R U R A L H O U S E H O L D S (H O G R U R)	
Other rent adj. to SNA Operating surplus				STATISTICAL DISCREPANCIES	
Comp. of empl. adjustments: inclusion of agricult. salaries				R	
Adjustments of own consumption differences with the SNA				E	
Adjustments for net indirect taxes				R	
Expansion of the survey sample				E	