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OSCAR ALTIMIR

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EUGENIO LAHERA

Technical Secretary



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Notes on the measurement *of poverty by the* income method

Juan Carlos Feres

*Division of Statistics
and Economic Projections,
ECLAC.*

The fact that different studies seeking to measure poverty in a given country often give differing results, although they apparently use the same method and the same data sources, has long given rise to a feeling of confusion among both experts in the field and the public in general. Such discrepancies (regarding the size of the phenomenon and the characteristics of households considered to be poor) reduce the credibility and technical reliability of these measurements, shed doubts on estimates of the level and evolution of poverty, and hinder international comparisons. This is why it is important to foster greater consensus among researchers regarding the criteria and procedures to be used, with a view to progressing towards a common pattern which will make the measurements more consistent and homogeneous and guarantee their effective comparability. This article outlines some aspects of the "income method" which affect the identification of poor households and the calculation of the extent of poverty and hence –since they could help to serve the above-mentioned purpose– warrant special consideration in future studies on this subject. These aspects are: differences in the cost established for the basic food shopping basket; the procedures used to calculate the value of non-food items; the use of scales of equivalence for households of different sizes and compositions; evaluation of the reliability of measurements of current income; problems associated with expanding the coverage of the concept of income; poverty measurements, and, lastly, the sources of information normally used in studies of this type.

I

Introduction

In Latin America, two methodologies are most frequently used for measuring and describing poverty: the "income method" or "poverty line method", and the direct method based on the consideration of social indicators, the most frequently-used version of which in recent years has been the so-called "maps of unsatisfied basic needs".

These two methods, of course, are based on quite different conceptual approaches, so that "in reality, they are not alternative ways of measuring the same thing, but represent two quite different concepts of poverty" (Sen, 1981). These concepts are based, in one case, on the notion of the capacity to satisfy essential needs, and in the other –the direct method– on the observation of the real consumption of persons, matched against given conventions regarding minimum needs. However, both methods are of great interest and aid significantly in the task of diagnosing poverty.

The main sources of information for maps of unmet basic needs are population and housing censuses, while estimates using the poverty line method are prepared on the basis of household surveys. Both these systems have their corresponding methodologies and operational frameworks, of course, but in their practical application they often display variations from these norms which cannot always be explained entirely by the well-known limitations in terms of available information. Consequently, the results of different studies which apparently use the same methodologies and the same data sources (especially in the case of the poverty line method) quite often display differences (sometimes considerable) in the estimated magnitude of poverty and the characteristics of the households classified as poor. This is obviously disconcerting both for experts in the field and for the public at large, and these discrepancies affect the credibility and technical reliability of the measurements made, shed doubt on evaluations of the level and evolution of poverty, and hinder international comparisons.

Efforts to tackle this problem should obviously include the exercise, in each study, of the greatest care and strictness with regard to the concepts, criteria and assumptions used and the information sources

and data processing procedures employed, so as to enable the rigorous analysis and interpretation of the results obtained.

This is not enough, however. It is also necessary that there should be greater consensus among researchers regarding the procedures to be applied at the different stages in the estimation process, so as to advance towards a common pattern capable of improving the consistency and homogeneity of the measurements and ensuring their effective comparability. This should be complemented, of course, by even closer scrutiny of the information obtained with these methods with respect to its real usefulness, scope and limitations for the purpose of analysis and decision-making in the social field (diagnosis and definition of target groups and design, follow-up and evaluation of the impact of policies and programmes aimed at overcoming poverty).

Although this forms part of a debate which has already become quite traditional in Latin America, and although a good deal of progress has been made in this respect, we believe that there is room for a further widening of the idea of the common application of concepts and methods, even though the nature and complexity of the matters dealt with means that some degree of diversity will always be permissible and even sometimes advisable.

This article briefly outlines some essentially methodological aspects of the income method which affect the identification of poor households and the calculation of the extent of poverty and may hence be useful in this respect. The importance of these aspects has already been highlighted by the extensive literature generated on this matter in the region in recent years, so that they warrant special consideration in future research on this subject.

We shall centre our comments on seven items: differences in the cost established for the basic food shopping basket; the procedure for calculating the value of non-food items; the use of scales of equivalence for households of different sizes and compositions; evaluation of the reliability of measurements of current income; problems associated with expanding the coverage of the concept of income; poverty

measurements, and, lastly, the sources of information used in studies of this type.

Consequently, we will not deal here with aspects relating to the conceptual dimension of the income

method, although it is acknowledged that this dimension is extremely important and in some cases may strongly condition the options available at the methodological level.

II

The basic food shopping basket

Determining the value of the basic food shopping basket, which represents the cost of satisfying basic food needs at a given time and place, is a process involving several stages, which require a great deal of information. In Latin America, this task has been carried out mainly on the basis of what might be called the "ECLAC lines": the definition of baskets whose size and composition are such as to satisfy the nutritional needs and reflect the consumption habits prevailing in a society (adaptation to consumer preferences), in accordance with the domestic supply and relative prices of foodstuffs. In determining the value of the basket, the prices used for each article are those collected for the calculation of the consumer price index (ECLAC, 1991).

Although this methodology is applied in the region on a relatively generalized scale and it lays down in detail the procedures governing the different phases of the estimation process, each specific case where it is used comes up against special situations (due to lack of information or other reasons) which ultimately affect the cost of the basic food shopping basket. It is thus almost inevitable that different values will be arrived at, not only by different researchers but even within the context of one and the same study, depending on the options selected as regards criteria, assumptions and treatment of the basic data. In turn, the different values arrived at for the basic shopping basket, also known as indigence lines or extreme poverty lines, will be directly reflected in differences in the estimated dimension of poverty.

The problem is even more serious when the available information is clearly weak or incomplete, as often happens in the case of some urban areas of countries of the region or rural areas in general. When this happens, the analysis has to be based on mere hypotheses or guesses.

Although researchers are well aware of this, however, they generally tend to work on the implicit

or explicit assumption that the cost of the basic food shopping basket is a specific and highly accurate value, and later on the same is true of the value of the poverty index.

In view of this variability,¹ it would seem more reasonable to establish this cost in terms of a range of values rather than a specific figure. Obviously, this would make it a little harder to analyse changes (especially small changes) in the level of poverty over time, but it would have the advantage of giving greater consistency with the degree of precision usually attained in these estimates. If this view is accepted, then the problem would be how to determine the size of the range of values in question.

This is undoubtedly an eminently empirical task. Leaving aside essentially statistical aspects, the minimum and maximum of the range should depend on the sensitivity of the cost of the basic food shopping basket to the assumption of alternative values (within reasonable limits) for certain relevant parameters which enter into its estimation. Among the most important factors in this respect are those connected with: i) the nutritional requirements of the different groups (by sex, age and activity), since the basket should be in keeping with the average needs of the population; ii) the consumption structure implicit in the basic food shopping basket and the physical quantity of each of its components, and iii) the prices on the basis of which the basket is valued.

The first of these factors includes the height and hence the weight of adults, which it is necessary to know in order to calculate the basal metabolism rate (energy) or protein requirements; the distribution

¹ In addition to this variability, there is also the statistical variability inherent in the sample-based nature of some of the data used to construct the basic food shopping basket, due to such factors as socio-demographic distribution or consumption structures.

over the day of the different predominant activities (light, moderate and heavy), especially in the case of the adult population, and the gross energy expenditure corresponding to each activity. The second set of factors comprises aspects relating to the selection of the reference group for evaluating the habits of the population; the treatment to be given to consumption "away from home" (form of acquisition of foodstuffs), and assumptions regarding the evolution of consumption patterns, when no recent survey results are available in this respect. Finally, the third set of factors includes the selection of the prices considered to be appropriate for valuing the basic food shopping basket (average prices, minimum prices, prices prevailing in the poor sectors, etc.); the differences to be assumed between regions or areas in the absence of detailed information, and the index to be used for updating the value of the basket (consumer price index for foodstuffs, consumer price index for the poor, or product prices).

Various studies (ECLAC, 1991; Gerstenfeld, 1993) have simulated the effect of some of these factors. For example, analyses have been made of the sensitivity of the average energy needs of the whole

population to variations in their determinants. Thus, increases or decreases of 2 cm in the height of the adult population lead to positive or negative variations of no more than 22 Kcal per person per day in calorie requirements (i.e., less than 1% of total calorie requirements). The different hypotheses on the time distribution of the various predominant activities, for their part, involve variations of no more than 26 Kcal per person per day, while the impact of the different values of gross energy expenditure for each activity ranges from -1.2% to +0.7%.² Likewise, in certain countries and for certain periods the differences in the cost of the basic food shopping basket resulting from the use of one particular price index rather than another for updating purposes have proved to be minimal or insignificant.

However, the available information is still very insufficient and does not always provide conclusive results. More needs to be done to achieve a level of formalization which will permit the determination of something like the net effect of the whole set of factors influencing changes in cost of the basket. This is therefore one of the items on which it is necessary to keep working.

III

Non-food expenditure

Under the poverty line method, the cost of satisfying non-food needs is usually determined on a normative basis, in the light of the observed relation between food expenditure and total consumption expenditure (Engel's coefficient) in the various household strata, especially those belonging to the reference group (households whose food expenditure is slightly above the basic level assumed).³

At least two conceptual connotations have been noted in this respect. The first one is that the fore-

going assumes that households that can satisfactorily meet their food needs also satisfy the minimum levels of all their other basic needs.⁴ The second is that the fact that the data registered in the surveys correspond entirely to private consumption expenditure means that part of the satisfaction of basic needs is not reflected in that consumption pattern, in so far as households have access to goods and services wholly or partly subsidized by the State (ECLAC, 1990).⁵

What we wish to highlight here, however, is another matter. If we accept Engel's coefficient as the rule for establishing the cost of satisfying non-food

² It should be borne in mind, however, that if the variations were expressed in terms of adult requirements rather than the average for the whole population, these percentages would be rather higher.

³ Perhaps the only exception to this procedure is that of the study "Macroeconomía de las necesidades esenciales en México" (COPLAMAR, 1983), in which an attempt was made to identify specific indicators for the satisfaction of each type of non-food need. See also Boltvinik, 1990.

⁴ This is not necessarily so. See, in this respect, an interesting analysis of the question of housing, in connection with the treatment of imputed income corresponding to the use of one's own dwelling, in Beccaria and Minujin, 1993.

⁵ We shall return to this point in section VI below.

needs, we run up against the problem of the differences in the value of this coefficient for the different types of households in a reference stratum.⁶ Such differences are mainly connected with the size and composition of the household and the stage in the life-cycle through which it is passing.

An example of this may be found in the results of the analysis made by Feres and León (1988) on the basis of data from the 1984-1985 survey on income and expenditure in Colombia, which clearly illustrate the differences that exist, in terms of the main items in the structure of non-food expenditure, between households of similar income levels but different composition. Thus, in the set of households in Bogotá, Cali and Medellín which made up the second quartile in terms of per capita expenditure, differences were observed in the proportion of expenditure devoted to transport, education, health and housing. In the case of the latter item, households made up of young couples without children spent an average of nearly 20% of their total expenditure on housing, whereas for older couples with two children the figure was 15%. The differences observed in the proportion of expenditure devoted to food were even greater.

Thus, as the cost of covering non-food needs varies in the course of the different stages in the family life-cycle in accordance with the size and composition of the household, as well as in line with such factors as the amount of wealth accumulated and the degree of access to public services, there is ample

justification for a detailed analysis of these items of expenditure, which could possibly result—as in the case of food—in the establishment of specific coefficients for different types of households.

However, this is an aspect which also enters into the “scales of equivalence” analysed in section IV: it is perhaps these scales that should serve to reflect in full the effects of the differences of composition and economies of scale of households which are implicit in their consumption expenditure profiles.

At the same time, because of the infrequency with which family budget surveys are carried out, it is necessary to have some criterion for updating the structure of household expenditure. In the absence of other information, and without resorting to sophisticated elasticity calculations, one readily available way could be to look at the evolution of the various expenditure items and, at each particular time, weight the original coefficient by the differences in the changes in relative prices. The experience of most countries of the region in recent years with regard, for example, to the disparity between changes in the prices of tradeable goods and changes in non-tradeables, or between public service charges and food prices, amply justifies such a procedure.

A different matter (which we will not discuss here) is the determination of coefficients of expenditure on food in areas for which no information is available, such as a large part of the rural areas of Latin America.

IV

Scales of equivalence

Poverty studies usually use per capita units to express both the values of poverty lines and the resources available to households for satisfying their basic needs, thereby acknowledging that the level of well-being is closely linked with the number of persons in the family. As already noted, however, in reality pov-

erty lines, or income, should also recognize the economies of scale associated with different sizes of households, the effects of the particular makeup of their members (by sex, age or other relevant feature), and the structure of consumption corresponding to the various phases or stages in the family life-cycle. All these elements should be summed up in the “scales of equivalence” among households.⁷

⁶ ECLAC studies have routinely adopted, for all countries, coefficients of 0.5 for urban areas and close to 0.57 for rural areas, which are equivalent to inverse values (Orshansky's ratio) of 2.0 and 1.75 respectively (Altimir, 1979). These values have been retained even in some countries where the average coefficient observed in the reference group diverges from them, mainly with the objective of not affecting comparability with previous estimates (ECLAC, 1991).

⁷ Another factor, whose empirical analysis is even more complex, may be added to this list: the intra-household structure of consumption.

Using—or failing to use—these scales in the various studies gives rise to results which differ from each other not only in terms of the extent of poverty but also, and especially, in the identification of poor households. For example, many families which have middle-level incomes but are of large size (and therefore have a high proportion of children) could have their classification changed from “poor” to “non-poor” if the applicable equivalences were taken into account.

It must be acknowledged, however, that these scales are hard to establish, and although there are some concrete proposals for improving them, they have so far been considered very partial and imperfect. The three main methods used for preparing these scales are: i) surveys to weigh individual needs (this method introduces subjective elements); ii) empirical research on the behaviour of household expenditure (using some indicator of well-being, such as Engel's coefficient, for households of different sizes and compositions; and iii) studies based on nutritional (and psychological) information.

Naturally these different methods also give different results.

In order to illustrate the great disparities that may occur in this respect, table 1 presents five scales currently used in different countries. As may be seen from the table, they may display such large differences as to significantly affect the results obtained in a poverty study. Consequently, before deciding whether or not to apply scales it is very important to get to know them in detail and evaluate their background and rationale.

One criterion used in Latin America to prepare scales of equivalence (valid only for food consumption) is that based on the energy needs of each individual (ECLAC, 1991). Although it makes it possible to take into account the differing food needs of the different members of a household, it does not explicitly incorporate the possible economies of scale in food consumption, and this criterion cannot therefore be considered sufficient for extrapolating consumption expenditure as a whole, although its usefulness in the area of food is undeniable. Table 2 presents an example of this type of scale, based on the energy requirements of an adult male between 31 and 60 years of age with moderate activity.

Thus, while acknowledging the pressing need to incorporate scales of equivalence in the methodology of poverty studies, there is not much yet that can be reliably proposed in this respect. This is therefore another item that should be placed on the methodology research agenda of the countries of the region.

TABLE 1
Scales of equivalence among households

	Men	Women
A. Amsterdam scale^a		
18 years or more	1.00	0.90
14 - 17 years	0.98	0.90
Under 14	0.52	0.52
B. OECD scale (Organization for Economic Cooperation and Development)^b		
First adult	1.0	
Additional person of 14 or older	0.7	
Additional person under 14	0.5	
C. Modified OECD scale^c		
First adult	1.0	
Additional person of 14 or older	0.5	
Additional person under 14	0.3	
D. Subjective scale		
First adult	1.000	
Second person	0.232	
Third person	0.159	
Fourth person	0.126	
Fifth person	0.105	
Sixth person	0.091	
E. LIS scale^d		
Head of household	1.0	
Adults and children	0.5	

^a Used in consumption expenditure studies in the United Kingdom.

^b Arbitrary, but more realistic than the per capita scale.

^c Compromise between the OECD scale and the subjective scale.

^d LIS: Luxembourg Income Study.

TABLE 2
Peru: Scale of equivalence among households, based on energy needs

Socio-demographic categories	Men	Women
Under 1 year of age	0.274	0.253
1 - 3 years	0.502	0.469
4 - 6 years	0.651	0.587
7 - 9 years	0.748	0.660
10 - 13 years	0.825	0.728
14 - 17 years	0.990	0.774
18 - 30 years		
Activity ⇐ light	0.883	0.701
Activity ⇐ moderate	0.994	0.722
Activity ⇐ heavy	1.143	0.761
31 - 60 years		
Activity ⇐ light	0.888	0.725
Activity ⇐ moderate	1.000	0.747
Activity ⇐ heavy	1.150	0.787
Over 60		
Activity ⇐ light	0.729	0.659
Activity ⇐ moderate	0.821	0.679
Activity ⇐ heavy	0.944	0.715

Source: ECLAC, 1991, Annex 2.

V

Reliability of income measurements

Among the many aspects investigated by household surveys, one which gives rise to most controversy regarding the quality of its results is the measurement of the various income flows received by persons and families. It is known that these measurements are skewed, traditionally in the direction of under-estimation, but there is no consensus about the magnitude of these skews and the way to determine this (Feres, 1988). In poverty studies, which represent a normative cross-section of income distribution, these skews must be evaluated and corrected. Otherwise, they will automatically be reflected in the estimated dimension of poverty.

Although in almost all countries the surveys often used for this purpose form part of a regular, ongoing programme, with highly standardized contents and processes, there is not enough evidence to confirm the theory that these skews remain relatively stable in the successive survey rounds.⁸ On the contrary, in many cases the information which it has been possible to assemble tends to contradict –often very markedly– the idea of the possible “freezing” of such skews. There is therefore no alternative but to evaluate the reliability of the income measurements in each individual survey and try to correct the degrees of under-estimation thus revealed.

The skews may be of different types. Some are connected with the sample-based nature of the survey (inadequacy or poor quality of the sample frame, problems of coverage, rejections, statistical variability, etc.), while others are due rather to contingencies or errors foreign to the sampling procedure (Altimir, 1975). It is assumed that the first-named skews will be taken care of within the context of each survey and are generally evaluated by the responsible authorities. The latter type of skews, however, are above all errors of response, which are usually harder to detect, are not always entirely the fault of the in-

terviewee, are difficult to correct and usually represent a major proportion of the total error of estimation.

For our purposes, we are particularly interested in the problems of failure to respond, of incomplete coverage of the concept of income being surveyed, and of under-declaration.

Failure to answer certain questions on income may reach significant levels in surveys, to such a point as to distort the results and artificially inflate the indexes of poverty (and especially of indigence).⁹ When this happens, it is necessary to make the corresponding imputations in line with the characteristics of each recipient who did not answer. This is perfectly possible in most cases, and the survey itself provides information for this purpose, using the income declared by persons and households with similar characteristics.¹⁰

An alternative criterion is obviously simply to exclude from the survey, for all purposes connected with income variables, all those who do not report their income. If this is accompanied by the relevant adjustments in the sample (replacements or changes in the factors of expansion) there will be no problem, but if not the representativeness of the survey will be affected or it will be necessary to assume that the persons excluded from the sample have the same distribution and characteristics as those remaining in it. Such an assumption would require at least the confirmation of field research in this respect, which has generally not been carried out in Latin America.

⁸ If this stability did exist, it would not solve the problem of the accuracy of the estimates, but it would largely solve the problem of their comparability, and this would have a positive impact on income distribution studies.

⁹ An extreme example of this is provided by the Permanent Household Survey (EPH) in Argentina. In the October 1990 survey of the Federal Capital and Greater Buenos Aires, 23.2% of employed persons did not report their labour income, and in 1992 the figure was 17.8%.

¹⁰ Generally speaking, this is not very difficult in the case of income from employment, pensions and imputed rents (which represent some 90% of total income), but it is naturally more difficult in the case of other types of income, where it is very hard to detect possible omissions. There are well-proven computer programmes for making these imputations (see Feres, 1996).

The income concept studied in surveys can be supplemented by imputation in order to make it compatible with total current household income. This case is different from the previous one, however. Here, it is necessary not only to identify the probable recipients of each class of income which has not been studied but also to generate an estimate of the total or average amount of this income, on the basis of data from a source exogenous to the survey, which, as we shall see below, consists of the national accounts. It is also necessary to possess some criteria for distributing this income among recipients. What happens in practice is that the survey itself sometimes provides information which permits the identification of these recipients and the distribution of the income among them, but in other cases it is only possible to make a rough allocation on the basis of guesswork. Even in this case, however, it is preferable to make the corrections and thus minimize the risk of over-estimating poverty indexes.

In order to analyse the reliability of income data and evaluate possible skews due to under-declaration, it is also necessary to have a quantitative reference pattern, independent of the survey itself, to provide estimates of the different types of income received and to serve as a basis for comparison. This role is usually assigned to the national accounts.

So far, most of the Latin American countries do not regularly prepare the household income and expenditure account of the system of national accounts, or else they do not do so with the necessary level of disaggregation. Moreover, criticisms of the accuracy and reliability of the national accounts themselves are very frequent, and could shed doubt on the advisability of using them to evaluate surveys. However, there is no denying that the national accounts are the only system of statistics that permits the detailed evaluation and reconciliation of data from multiple sources, within a coherent and systematically applicable conceptual framework.

The most important thing, therefore, would be to seek ways of gradually increasing the availability, quality, level of disaggregation and conceptual precision of the household account, rather than merely casting aspersions on its validity. This has been the line taken, for example, by ECLAC in its efforts to encourage countries to take on this task: the Commission has collaborated in the development of methodologies and even provided its own estimates.

The next step is to define the criteria and procedures for adjusting the income data obtained in surveys.¹¹ If we assume that the degree of under-estimation of each type of income is determined by its difference from the total amount of such income registered in the national accounts, the first task to be carried out is the standardization of concepts between the two sources. For this purpose, we need to consider several concepts as detailed below.

1. Remuneration of employees

According to the instructions, surveys generally investigate income from labour, and especially the remuneration of employees, in liquid terms (i.e., the amount that the worker effectively receives after the corresponding legal deductions). In the household account, however, remunerations are given in gross terms, so that in order to achieve equivalence of concepts with the survey data it is necessary to deduct from them the social security contributions (in order to obtain the net remunerations) and direct taxes.

This is possible by using the information on the value of social security contributions. Contributions to the traditional (pay-as-you-go) system are included among household expenditure, while contributions to individual capitalization systems (if these exist) must be specially estimated as memorandum items in the accounts.¹²

2. Operating surplus

Income in respect of ownership of dwellings (effective or imputed rent) must be deducted from the operating surplus, and such income must also be given separate treatment as regards its comparison with the survey.

Thus, the net operating surplus (after deduction of the "ownership of dwellings" item and direct taxes) is assimilated to the concept of the primary income of own-account workers, which is what the surveys seek to measure.

¹¹ For a detailed description of the criteria used by ECLAC in its studies on the extent of poverty, see ECLAC, 1991, chapter II.

¹² In section 5 below, some comments are made on conceptual and practical difficulties connected with the accounting treatment to be given to transactions under the new pension schemes.

3. Direct taxes

The net remuneration of employees registered in the household account must also be reduced by the amount of direct taxes paid, in order to make the income consistent with the concept of effective remuneration that the surveys are supposed to record. The same must be done with respect to profits, since the accounting concept also includes such taxes.

For this purpose, the direct taxes paid by households and registered in the account must be broken down in order to associate them (in their entirety) with each of these two sources of income. To this end, it is necessary to systematize the information available at each time on the different types of taxes in order to estimate the amount paid in respect of wages and salaries and deduce, from the difference, the amount corresponding to profits.

4. Imputed and effective rents

Each of the years for which the household account is estimated must include a set of memorandum items. These should cover imputed rents for the use of a dwelling owned or provided, and that part of the operating surplus of the "ownership of dwellings" sector that corresponds to imputed rents.

These data will not only give the value of imputed rents but will also make it possible to calculate the amount of effective rents and make the necessary adjustments in the operating surplus to ensure that it can be compared consistently with the concept of the profits of own-account workers recorded in the surveys.

a) Imputed rents

As may be gathered from the foregoing, the memorandum items must include both the gross product of the imputed rents and its corresponding added value (operating surplus). The difference between the two represents the production costs, which in this case are connected basically with repair costs, property taxes, fixed capital consumption and maintenance charges.¹³

¹³ The values estimated for some countries reveal that these costs can amount to a very substantial proportion of the total. In Chile, for example, they amount to 46% of the value of imputed rents (a percentage determined in the input-product matrix).

Although in terms of household income the comparison should strictly speaking be with the imputed rents obtained from the survey at the added value level, it is reasonable to assume that in practice the households interviewed reply on the basis of what they consider the rent of their dwelling would be if they had to seek accommodation on the market. Thus, the value declared is closer to the concept of the value of production than to the added value, because it may be assumed that households do not deduct any of the cost items referred to earlier. In any case, it would be impossible to calculate these costs from any of the other information registered in the survey.

Consequently, for this non-monetary income flow the comparison between the values of the reference framework and the survey itself is usually at the level of the total value of the imputed rents, without prejudice to the fact that other problems may also arise in the course of the comparison, as we shall see later.

b) Effective rents

According to the information available in the memorandum items, this income flow is calculated as the difference between the operating surplus of the "ownership of dwellings" sector and the amount corresponding to imputed rents. When it is investigated separately in surveys, this provides the possibility of directly contrasting the measurements made of it by the two information sources.

5. Benefits received under the new social security systems

The value of the benefits received by households under the new social security systems (based on individual capitalization) in countries where these have been applied, which is included among the memorandum items, is considered together with the value of the benefits received under the old social security system, which is registered in the household account. This is because it is necessary to make the concept of the reference framework match that effectively declared in the surveys.

It should be noted that the benefits under the new system do not figure among the income in this account because, from the accounting standpoint, the contributions to the new system are considered as a

financial transaction (saving), and the benefits obtained from them are assimilated with the withdrawal of one's own funds (dissaving). However, when evaluating the available resources of the household, and in view of the form that these withdrawals normally assume, it would seem more logical to consider them as current income.

At all events, it is worth recalling that this is one of the types of income which, for purposes of adjustment, is entered in net terms, since the contributions are simultaneously deducted from employees' wages.

Somewhat different treatment is given to transactions with private health insurance companies, since when such companies exist they are assimilated to insurance companies. From the accounting standpoint, the benefits received from them are registered in household income as indemnities received from risk insurance, while employees' contributions are registered mainly as net insurance premiums, with a small part being classed as final consumption expenditure, because it is considered as payment for services (administrative costs and profits of the institutions). Consequently, as a function of the adjustment of income declared in the survey, the value of this type of benefits is calculated, also in net terms, within the set of items making up current transfers.

6. Adjustment of the concept of disposable income

A point which can give rise to some controversy is the following: should the household income measured in the survey be reconciled at the global level with the concept of disposable income as presented in the national accounts, or should certain items be considered strictly in terms of gross income? In other words, should some income flows registered in the household account be reduced by the amount of the expenses incurred by households under the same headings?

Specifically, this would affect such items as cash capital inflows (property rents received, less interest and other rents paid), risk insurance (indemnities received, less net premiums paid) and current transfers (inward transfers received, less outward transfers made).

In the ECLAC studies, it was decided to use these variables without deducting the respective outlays, since the surveys are designed to register the corresponding gross income, and it cannot be assumed that the persons interviewed are declaring their income in net terms.

Moreover, three other circumstances should be borne in mind. The first, which is of a strictly practical nature, is that this set of income flows represents a very small proportion of total household income, so that whatever the criterion adopted its incidence on the final result will be very slight. The second, which is of a more conceptual nature, is that in poverty studies what it is desired to evaluate is the magnitude of the resources available to the household, rather than the use made of those resources, which, from a normative point of view (and especially in the case of poor households), belongs rather to the sphere of the considerations taken into account when setting the value of the poverty line (that is to say, the expenditure needed to cover basic needs). The third circumstance is that, in line with the technique used to correct under-declaration of capital income in the surveys, which imputes such income only to the highest-income quintile, adopting the alternative criterion would at most be reflected in a slight drop in income concentration, but it would hardly affect the measurement of poverty at all.

The foregoing illustrates the methodological advances made as regards the evaluation and correction of the skews affecting income measurement in household surveys. At the same time, however, it points to the need to continue improving the quality of such adjustments,¹⁴ as well as increasing the reliability of the information from both surveys and national accounts (Altimir, 1987).

¹⁴ A measure which could help in this direction, for example, would be to make wider use—in the first stages of adjustment of multi-purpose surveys—of the information provided by studies on family budgets. It would be particularly important to go beyond the mere comparison by source of income and break down the adjustment into branches of economic activity or occupational groups.

VI

Broadening the coverage of the concept of income

As already noted, the fact that the consumption expenditure registered in household surveys corresponds exclusively to private consumption expenditure means that, when households have access to some transfers of goods and services wholly or partly subsidized by the State, part of the process of satisfaction of their basic needs is not reflected in the survey data.

In principle, the poverty line method does not present any great conceptual difficulties for expanding the concept of total current household income to include effective access to these free or subsidized public services, because incorporating them explicitly would probably reduce Engel's coefficient (thus raising the poverty line), while increasing household income proportionately.

Let us look at a simple example of a household whose income is below the poverty line. Let us assume that its expenditure ratio is:

$$\frac{\text{Expenditure on food}}{\text{Expenditure on food + Other private expenditure}} = 100/200 = 0.5 \text{ (2.0)}$$

An increase of 50 in their total expenditure, as a result of including their consumption of non-food public goods and services, would give the following:

$$\frac{\text{Expenditure on food}}{\text{Total private expenditure + public goods}} = 100/250 = 0.4 \text{ (2.5)}$$

Although it is quite true that this increases the total expenditure of the household, and their food expenditure ratio goes down to 0.4, placing the pov-

erty line at 250, the value of the consumption of public goods and services should also be computed as part of the household's income, so that the consumption capacity of that household in relation to the poverty line remains unchanged.

It may be deduced from this example that the problem lies rather in the different access of different households to public goods and services at a given moment and over the course of time. Alternatively, the problem lies in the validity of the assumption that the amount and distribution of public goods is relatively stable, which implies that households take their expenditure decisions in the light of the prevailing institutional system and that Engel's coefficient is therefore suitable for estimating the global cost of their needs as a whole.

On the empirical level, however, the situation is different. The surveys do not provide sufficient information on this item. Only very few surveys – such as the National Economic and Social Characterization Survey (CASEN) in Chile, for example – identify the households and persons receiving public monetary transfers and ask them about the amount of such benefits, or record enough information to make the necessary imputation (on the basis of cost data external to the survey).

Naturally, the problem is even greater in the case of non-monetary transfers. The challenge here is to design and implement the necessary instruments for obtaining the information at the level of each household and ensuring its regular updating. This would give the additional benefit of providing the necessary background information for broadening the analysis of living conditions and permitting the follow-up and appraisal of particular social programmes.

VII

Poverty measurements

Most of the poverty studies carried out in Latin America normally provide results on the identification and quantification of poor households. In other words, they provide information on the incidence of poverty, broken down by geographic units or economic and social groups. There are not so many studies, however, which cover other dimensions of the problem, such as poverty gaps (the distance between the income of the poor and the poverty line) and the severity of poverty (how poor the poor really are). Moreover, it is by no means usual for them to provide information on the profiles or characteristics of poor households, which are particularly useful for diagnosis and policy design.

Among the many poverty measurements proposed which could enhance the analytical possibilities of these studies are those that bring out the insufficiency of the income of the poor, the magnitude of the social effort needed to overcome poverty, or (through statistical breakdowns of the indexes) the part played by different factors in the evolution of the overall incidence of poverty (Ravallion, 1992). From a formal point of view, each of these measurements has its advantages and limitations.

Sen (1976) noted two main axioms that poverty indexes must fulfill: i) the axiom of uniformity, whereby a reduction in the income of a poor household (other conditions being equal) must raise the poverty index, and ii) the axiom of transference, whereby a transfer of income from a poor household to a richer one (other conditions being equal) must likewise increase the poverty index.

Not all the known indexes satisfy these conditions. Clearly, for example, the measure of the incidence of poverty (H) does not have either of these properties, while indexes of poverty gaps satisfy the axiom of uniformity but not that of transference. In this respect, Sen himself proposed an index which overcomes these limitations:

$$P(s) = H [I + (1-I) G]$$

where: H = incidence of poverty
 I = percentage distance of average income of the poor from the poverty line
 G = Gini coefficient of the income distribution of the poor.

As we can see, in this index the incorporation of the Gini coefficient solves the problem that the measures H and I remained unchanged when there were transfers of income among poor people. In turn, $0 \leq P(s) \leq 1$. It may be deduced from this that:

$P(s) = H * I$ if all poor people have the same income

$P(s) = 0$ if all persons have an income higher than the poverty line, and

$P(s) = 1$ if all persons have an income equal to zero.

Foster, Greer and Thorbecke (1984), for their part, also formulated a poverty index, incorporated in a family of indexes based on different values of the parameter α (which represents something like the degree of aversion of society to poverty). When $\alpha = 0$ the index is equal to the incidence of poverty (H); when $\alpha = 1$ it is equal to the poverty gap ($H*I$), and when $\alpha = 2$ the index represents the mean distance of the income of the poor, squared, from the poverty line (FGT). Thus:

$$P(FGT) = (1/n) \sum_{i=1}^q [(z-y_i)/z]^2$$

where: n = total population
 q = total number of poor people
 z = poverty line
 y_i = income of the i^{th} poor person.

This index complies with the axioms of uniformity and transference and also satisfies the properties of additiveness and breakdown. However, its inter-

pretation –in terms of the significance of the index itself and the changes in it– is not very clear.

The foregoing examples merely seek to bring out the possibility and importance of supplementing the traditional analysis of the magnitude and evolution of poverty with the incorporation of measures and

profiles that permit enhancement of the diagnosis and fuller knowledge of the situation of poor sectors, naturally within the framework of the limitations imposed by the sample-based nature of the information and the reliability of the basic data normally used in this type of study.

VIII

Sources of information

Finally, some general comments are called for on the information sources used for the execution of poverty studies using the poverty line method: specifically, household surveys.

For the purposes of this article, a distinction needs to be drawn between at least three types of household surveys which are regularly effected in Latin America and whose information permits the calculation of social indicators, including those for poverty.

First, there are multi-purpose household surveys, incorporated in ongoing or periodical survey programmes. They are held at least once a year, and their central module is generally designed to measure employment and at the same time to record information on a broader range of characteristics of the persons interviewed (demographic, migration, education and income data) and their dwellings. Most of these surveys include, in some of their rounds, special modules added to the main questionnaire of the survey: these modules have become an interesting and low-cost instrument which is well adapted to the need to carry out research or go into greater detail on certain subjects such as female labour, education and training, access to health services, etc.

A second type of survey, which is carried out less frequently and at varying intervals, consists of family income and expenditure or budget surveys. These, too, are sample-based studies which provide very useful information for studying the social situation. In addition to data on some general features of the persons and dwellings surveyed, they usually contain detailed information on family income and expenditure, which serves to define the basic food shopping baskets whose cost is used in the estimation of poverty lines. They also serve as a (statistical) control of the seasonal nature of income and expendi-

ture, if different households are habitually interviewed over a whole year. This provides quite good-quality information, whose quality is also aided by the collection instruments and procedures used, the methods of evaluation (income-expenditure balance and checking at the places of purchase), and the selection of the interviewees (often direct informants). Moreover, these surveys are usually integrated in the conceptual framework of the national accounts, especially with regard to the consumption structure of households, and their subject-matter makes it possible (to some extent) to study the impact of some short-term economic policies on consumption expenditure, although this latter objective is adversely affected by the sporadic nature of these studies (due, among other things, to their high cost), the fact that their geographical coverage is generally not nationwide, their high degree of complexity, and the fact that –for the same reason– it is hard to obtain panel-type samples. Likewise, their large size makes it difficult to go into detail on such subjects as education or housing, or to incorporate other areas such as access to health services or the receipt of non-monetary transfers from the State.

Finally, there are surveys which are specially prepared for the purpose of the follow-up and evaluation of social conditions and poverty situations in the region. These surveys, which are carried out every two or three years, are designed to investigate more extensively or in greater detail some particular aspects such as the impact of social policies and programmes on different sectors of the population. A pioneering example is the Chilean National Economic and Social Characterization Survey (CASEN), which has been quite widely copied and studied in Latin America. These kinds of surveys normally study in detail not only the global resources (income)

of households, but also their effective access to particular welfare programmes (school meals, food or housing subsidies, etc.) and public services (health, education, infrastructure, etc.). This makes it possible to measure the effect and evaluate the degree of targeting of these programmes, while at the same time analysing important characteristics of the beneficiary groups on the basis of information about the household collected by the survey rather than by the administrative records of each programme.

It may be noted that many countries of the region have programmes which include two or even all three of the types of surveys mentioned, each subject to different frequencies of execution. In recent times, however, due to the growing demand for information on the social sector, certain shortcomings have been showing themselves more openly, especially as regards the subject coverage and frequency of the surveys, but also in terms of the consistency of the data generated by different sources and the capacity of the latter to meet the needs raised by social policies and projects. This has led in some cases to the proliferation of surveys or to the expansion of questionnaires to obtain more information than it is reasonable to expect from the type of survey and instruments used

(for example: trying to investigate matters typical of income and expenditure surveys by using the simpler and cheaper, but less effective, procedures of routine multi-purpose surveys).

In addition to pressing on with efforts to improve the quality of the data produced by the different studies, it seems necessary to clarify the potential of each type of survey more fully by promoting some degree of specialization, but within a context of mutual consistency and complementation (an integrated system). Thus, those countries (the majority, in Latin America) which lack one or more types of surveys should press forward with a view to completing the system. The wide variety of different situations displayed by the countries means that in some cases the objective should be to achieve greater continuity and better quality in multi-purpose surveys, expanding their geographical coverage and strengthening their institutional backing. In others, however, it will be more important to carry out a new income and expenditure survey or to design and implement a study on the living conditions of the population. In the most advanced countries, the main objective will be to improve the coherence and integration of all these instruments.

IX

Conclusion

Even if they use the same methodology for measuring poverty—in this case, the income or poverty line method—different studies may still arrive at different results because in its actual application the methodology often follows different paths in terms of the criteria, procedures and information sources used. This gives rise to a natural feeling of confusion, undermines the credibility and technical reliability of the studies in question, and limits the possibilities for using them in the field of social action. It would therefore be desirable to identify the factors behind such discrepancies, with a view to securing greater consistency and homogeneity of the measurements made.

In the present article, an attempt has been made to summarize some of the factors which are considered to have a very important incidence on the identification of poor households and on calculations of the extent of poverty. Suggestions are also made

which could be useful in a future debate aimed at securing broader consensus on the application of concepts and methods. By way of summing up, some final observations are now presented.

It frequently happens that different costs are established for the basic food shopping basket, because of differences in the information and procedures used. This would appear to suggest that in poverty studies it would be better to work with a range of values rather than a single value.

The structure of expenditure varies in line with the size and composition of the household and the stages of the family life cycle, among other factors. Consequently, rather than applying an (average) coefficient of expenditure on non-food goods for all the households in a corresponding income group, it would be better to use a "set of coefficients". Likewise, when no recent data are available on the break-

down of expenditure, these coefficients should be updated, at least in accordance with the evolution of the relative prices of food, on the one hand, and other consumer products on the other.

The use of values expressed in per capita terms is necessary, but clearly insufficient. The big differences between households in terms of given key characteristics mean that it would be desirable to evaluate their needs or their resources in units of equivalence. However, we are still a long way from possessing good measures of this type.

Evaluating the quality of income measurements in household surveys is an essential task in estimates of poverty by the poverty line method. As well as making progress towards greater coverage and accuracy of the primary data, there is room for further improvements in the procedures for correcting and adjusting those measurements.

Part of household consumption, especially in low-income sectors, comes from transfers by the State. This is not reflected in the private expenditure covered by the surveys, which should therefore incorporate instruments designed to obtain this type of information.

Stratification of the population in line with poverty criteria opens up the possibility of preparing information and indicators that could be very useful for gaining a better knowledge of poverty and its evolution.

For many reasons, improving the quality, coverage and relevance of the information generated by household surveys continues to be a matter of crucial importance. At the same time, each country should strive to advance towards the establishment of an integrated system of social surveys and indicators.

(Original: Spanish)

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