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INCOME DISTRIBUTION ESTIMATES FROM HOUSEHOLD SURVEYS
AND POPULATION CENSUSES IN LATIN AMERICA

AN ASSESSMENT OF RELIABILITY ^{*}/

by

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1. Nature of the problem

(a) Demand for statistical data for the analysis of income distribution

Ever since the social sciences were first differentiated from theology, the inequitable distribution of income and wealth has been one of the long-standing concerns of their basic thinking. During the last few decades of this long process of evolution, economic analysis has focused attention on the problems of underdevelopment and the technological revolution, looking at them from the point of view of production; it is in this light that analytical and statistical resources have largely been allocated. A few years ago, however, the pendulum of scientific interest began to swing back - and with increasing speed - to the standpoint of the distribution of economic goods and of the participation in welfare and power. This abrupt upsurge of awareness and the growing anxiety with regard to the determinants of income distribution and the fronts on which action should be taken to reform it, have resulted in a sudden overwhelming demand for information, addressed to statistical systems structured in accordance with the direction in which the pendulum formerly used to swing.

Although this demand derives from a sort of blanket concern with the distributive effects of the operation of the economic system, it splits into different analytical perspectives, according to whether the emphasis is placed on the generation of income in the productive process, on its appropriation, on its distribution among individuals, or on its redistribution through fiscal mechanisms. It is natural, therefore, that the statistical requirements arising should be considerably diversified. But when allusion is currently made to income distribution statistics, what is generally referred to is the phase of the distribution of income among individuals and households and sometimes, also, the results of fiscal redistribution.

/Among the

Among the social accounting systems in use, the System of National Accounts (SNA) [1] records, at a relatively high level of aggregation, the data for the various phases: generation, appropriation, distribution and redistribution of income. The incorporation of the System of Statistics of the Distribution of Income, Consumption and Accumulation [2], complementary to the SNA, was affected in response to the demand for detailed information on the distribution of income among individuals and households.

From this undeniably limited - although crucial - viewpoint, what is wanted is to obtain statistics with which to measure the existing inequalities between the recipient units of the system, classified according to differently-oriented analytical criteria by size of income, by socio-economic groups, by region, etc. But statistics are also needed to overcome the fragmentary character of this approach through the analysis of the relations to overcome the fragmentary character of this approach through the analysis of the relations of income distribution among the recipient units with the rest of the characteristics of socio-economic stratification, and with the operation of the productive system and of the institutional factors in the phases of income generation and appropriation.

(b) Sources of income distribution statistics in Latin America

There are five broad groups of sources of information on the distribution of income among the recipient units: household surveys, population censuses, income-tax records, social security records and economic censuses and surveys of economic establishments. A comparative analysis of the characteristics of each of these sources in Latin America has been made elsewhere [3]. Here it will be enough to note only a few basic facts about these sources.

Household surveys and population censuses should constitute the pre-eminent sources of data for measuring income distribution among the recipient units and analysing its relations with other socio-economic variables, since in those two cases it is precisely households and individuals that are the statistical units of

/observation. Many

observation. Many factors have hitherto concurred against the use of household survey results for the measurement and analysis of income distribution; mainly, response errors to income questions, the various limitations of survey techniques and even the deficiencies in their use observable in some instances in the past. As regards population censuses, seven of the censuses carried out in 1970 ventured to include questions on income.^{1/} Their results will nevertheless continue to be suspected of being influenced by more serious response errors than are normally attributed to this item in household surveys.

Income tax records may also supply information on the income of a subset of recipient units. As the actual application of this type of tax is restricted in most of the Latin American countries, the data are of course confined to the higher income strata. But what casts most doubt on the possibilities of using them is the widespread tax evasion among recipients in this strata and the underreporting of income so common among taxpayers.^{2/}

Social security records are an unquestionably useful source in those Latin American countries where the system is sufficiently extensive. In the first place, they provide detailed information on the distribution of all the various types of pensions. Secondly, they represent a source of particular potential value for data on the computation of employees. In these records the statistical unit is the establishment and the observation unit is the job, but insofar as the income of employees consists of their remuneration in a single job, social security statistics constitute an independent source of undoubted value for measuring the distribution of wages and salaries and also for more accurately establishing the relation between this distribution and the process of income generation in the productive system. The use of this source is limited by the extent to which

^{1/} Those carried out in Brazil, Colombia, Costa Rica, Mexico, Panama, Peru and Venezuela.

^{2/} See in this connexion, with respect to Argentina, [4] and [5].

/each country's

each country's social security system covers the wage-earning population, and by evasion on the part of enterprises and workers; it may also be affected by understatement of earnings. Another considerable obstacle to the utilization of this source is the all too frequent lack of adequate systematization of the files for the data to be easily retrieved.

Economic censuses and surveys of establishments, which may embrace various sectors of production, provide data on establishments, which are their statistical and observation unit. Accordingly, they are in principle more useful for measurements of income generated in each activity and the distribution of earnings than for those focused on the distribution of household income. But these sources, besides constituting for that very reason a necessary framework into which to fit the results obtained from the other sources and relate them with greater precision to the production process; may in some cases come to be the most reliable means of estimating the distribution of the profits of personal enterprises (see, for example, [67]).

In view of the limitations displayed in Latin America by all the available sources of information on income distribution, it is natural to think, in the first place, that the preparation of estimates of income distribution among the recipient units for the purpose of measuring its inequality should be subject to the combination and reciprocal control of the many sources available. The second and almost obvious reflection is that data from each source should be used only for the analytical purposes for which they are appropriate and reliable. It is from this standpoint that the reliability and usefulness of the household surveys and demographic censuses available in Latin America for the analysis of income distribution are examined here.

(c) Use of household survey data: the standpoint of the user

In most of the Latin American countries, opposite positions have existed up to now with respect to the use of household survey results for estimating macro-economic aggregates, including income and its distribution.

/At one

At one extreme, there are the defenders of the pre-eminence of household surveys over the other sources; they base their opinion on the methodological strictness attainable in such surveys, on the multiplicity of relations that can be established - even on the basis of published tabulations - and on the possibility they afford of carrying the analysis into greater depth in many directions, through the use of a manageable body of sifted microdata.

At the other extreme, the household surveys carried out in Latin America are criticized for the alleged deficiencies of the samples on which some of them are based, the lack of precision in field operations, and the many response errors, which are particularly serious in the case of income data. Some of these arguments are doubtless substantiated by sound evidence drawn from experience. But none of them can invalidate the basic proposal to combine household survey data with those from other sources or to use them only for those analytical purposes for which they are manifestly adequate.

Nevertheless, the user having either of these aims in view is faced with the problem of objectively assessing the reliability of the data to determine the limits within which they may justifiably be used.

Those who carried out the survey may possibly have applied, in the various phases of its execution, most of the recommendable consistency and internal quality checks. But it seldom happens as yet in Latin America that any details are published on the controls applied and the results obtained. Moreover, in no statistical inquiries, so far as is known, have the errors of response been studied by means of some strict measurement procedure.

In such circumstances, it is reasonable to harbour doubts on the reliability of the results of any household survey, especially as regards the composition of the sample and the many possible errors in the measurement of income. These doubts are added to the inevitable problems linked with the coverage, the definition of the statistical units and the definitions of income used in each survey.

The only possible way to dispel or at least diminish these doubts is to resort to analysis of the known characteristics of the samples and the post hoc techniques for control of the survey findings by means of comparison with data from independent sources.

2. Sources of error in estimates from sample surveys and censuses

The reliability of an estimate, whether obtained by means of a census or through a sample survey, is a relative matter. There is no such thing as the exact measurement of socio-economic phenomena. At best it is only possible to seek as high a degree of accuracy in the estimates as is attainable with the operational resources available for carrying out the measurement.

The accuracy of an estimate is its degree of proximity to the true or exact value, the ideal goal of measurement which, on that very account, is hard to define in operational terms. Consequently, each estimate shows a total error of measurement which consists conceptually in its difference from the ideal goal or true value.^{3/}

This total error results from the accumulation of errors deriving from various sources. Estimates from sample surveys are subject, in the first place, to sampling error or variability, sometimes also to estimation errors due to the use of biased estimators, and to a large collection of non-sampling errors.

A summary review of the various kinds of non-sampling errors, classified by possible sources of error, will give the following list:

(a) Coverage

- (i) Relating to the population, and mainly arising from defects in the sampling frame or from biased selection (purposive selection or omission of specific units);
- (ii) Relating to the sample, insofar as there is incomplete coverage of sampling units. This may be due to a number of causes, such as non-response (either from failure to contact sampling units or from non-observation of units contacted), the omission of inaccessible areas or units, and failure to complete questionnaires as a consequence of non-response to some of the individual items included.

^{3/} For a discussion of this topic see, for example, [2].

/(b) Response

(b) Response

- (i) Errors deriving from the design of the questionnaire;
- (ii) Errors resulting from lack of information or reluctance to co-operate on the part of the respondent;
- (iii) Errors arising from the interview;
- (iv) Errors associated with the length of the recall period;
- (c) Processing errors, both in manual operations (editing, coding, punching, etc.) and in mechanical processes.

Non-sampling errors usually account for a larger proportion of the total error of estimation than sampling errors.

Estimates obtained by means of a census or complete enumeration of the whole population are naturally not affected by sampling errors; but in any event they are subject to most of the non-sampling errors listed above. Coverage errors tend to assume less importance than in sample surveys, but they unquestionably exist; every census has its quota of omissions, its cases of non-response and its incomplete questionnaires (see, in this respect, 477). Response errors, on the other hand, acquire greater significance in censuses, among other reasons because a census operation allows for shorter interviews and less training of enumerators than an ordinary survey. Processing errors are also more likely to appear, because of the size of the mass of data handled in censuses.

3. A post hoc assessment of the reliability of the income results of household surveys and population censuses

Income and income distribution estimates based on household surveys are expected to be significantly affected by all or some of the non-sampling errors just listed.

In none of the Latin American surveys under consideration has any attempt been made to measure non-sampling errors. In the majority of cases internal checks are limited to consistency checks. Only in some of the surveys were quality checks also introduced at various stages of the operation.

/As a

As a result, it is necessary to fall back on post hoc assessments of the results of the surveys, comparing them with data from independent sources. But this assessment technique is only justifiable provided it can be validly assumed that the data used as a yardstick are reasonably accurate. This condition leaves out de facto the use of any of the other sources of statistics on the distribution of income by size, listed above; only exceptionally [5] have evaluations been made of the accuracy of the measurements obtained from those sources and, therefore, there is no evidence to suggest that they are more accurate than the results obtained from household surveys. This includes the income results of population censuses which could be subject, in principle, to considerably greater response errors than the demographic and employment characteristics measured by those same censuses.

These circumstances render improper any direct checking of the income distributions by size resulting from the surveys. Therefore it was decided to use an indirect approach, which consisted of comparing, on the one hand, the composition of sample populations with that of the corresponding total populations covered by population censuses and, on the other hand, the levels of income estimated by the surveys for different occupational groups with the corresponding income derived from national accounts. This approach offers the advantage of making a distinction between two factors which are relevant for the further analysis of the data: to what extent the income distribution obtained from a survey is distorted by biases in the composition of the sample population (over-representation of some groups of income recipients and under-representation of others), and to what extent it could be affected by the under-estimation of the income of the different groups of income recipients.

/Comparison with

Comparison with results of population censuses and national accounts estimates is also advisable for practical reasons. Both these sources are the most frequently used as a framework for the analysis of the socio-economic system and it is advisable, therefore, to relate the discussion of the survey results to them.

As regards the distribution of income by size obtained from the population censuses already mentioned, only the second of the two procedures is appropriate, that of comparing the results with the national accounts estimates, since the demographic and employment structure is that provided by the census itself.

The validity of this approach depends on the degree of reliability attributed to the results of the population censuses and the national accounts estimates. While it is true that for such sources in Latin America there is no evaluation of the degree of accuracy of the measurements either,^{4/} there are reasons for assuming that this is as high as it could be with the existing statistical organization in the respective countries.

First, total coverage of the economic system is a requirement that must be met by both population censuses and national accounts. Secondly, there is the greater experience acquired by their periodic preparation and frequent use. Income estimates in the national accounts are obtained from many sources relating to the generation of income in productive activities; therefore, errors of the aggregates are a combination of the errors of each component estimate, and there is little to be said about their magnitude. However, as these estimates have been available for several years and have been controlled through the various uses to which they have been put, it is reasonable to assume that those errors have been reduced as much as the statistical endowment of the country permits.

^{4/} In that sense, only evaluations of coverage of population censuses (see, on this subject, [45] and [47]) and a single analysis of the census measurements of active population [61] have been carried out.

/Finally, the

Finally, the use of national accounts estimates and occupation data from the censuses has the advantage of dealing separately with the main forms of income and groups of income recipients, which in turn permits the verification of income distributions resulting from the surveys by their components, isolating the areas in which it would be necessary to make adjustments to the basic data obtained by survey methods.

In view of all the limitations mentioned, it is obvious that the result of this evaluation approach cannot constitute a validation, in the strict sense of the word, of the survey results, let alone a precise measurement of accuracy. Its only claim is that it collects the principal evidence available for forming an idea of the direction and perhaps the order of magnitude of the possible bias of the results on income based on population censuses and surveys, from the point of view of income distribution analysis.

4. Household surveys available in Latin America

During the past decade the household surveys undertaken in Latin America have considerably increased in number and improved in quality. Key factors in this development have been the diffusion of the "Atlantida" methodology for manpower surveys [8], the ECIEL Programme on consumption and income [9], and the assistance provided by various United Nations agencies in the field of sampling techniques for household surveys.

Most of the surveys carried out include at least one question on income. The permanent inventory of household surveys kept by ECLA includes more than 120 surveys conducted in the Latin American countries in the last two decades which can furnish some information on income [10].

Within this large collection, however, there is a coexistence of surveys whose characteristics, quality and coverage vary widely. For the purpose of setting up the file of income distribution data from household surveys [11], the surveys chosen were those carried out after 1965, that showed better geographical coverage, adequate sample size, and an acceptable quality of design and execution.

/On the

On the basis of these criteria, 40 surveys carried out in 14 Latin American countries were selected. The identification and main characteristics of each of these surveys are shown in table 1; in each case it is also stated whether the results are already available and what are the conditions of the access to them.

Few of these inquiries can properly be considered income surveys. Many of them are multi-purpose household surveys, oriented de facto to the characterization of the labour force and the measurement of unemployment; they include some question on income whose results can be related to the occupational characteristics of each recipient. The other important category of surveys is that consisting of family budget surveys which include detailed questions on income but generally devote very little attention to other socio-economic characteristics of individual recipients.

5. Coverage of the surveys

The household surveys considered for setting up the data file on income distribution were, as already mentioned, those with the largest geographical coverage among the surveys carried out in the principal Latin American countries. Even so, only half of them cover the whole of the national territory; the rest deal only with urban areas, the largest towns, or even exclusively the metropolitan area of the capital city (see table 1). Surveys with complete coverage are usually employment surveys; nearly all the family budget surveys restrict their coverage, for operational reasons or for lack of resources, to the urban areas or even to some of the most important towns.

With regard to the definition of the population covered, almost all surveys confine themselves to the population living in private households; in every case, the population in institutions is excluded, and only two surveys cover the non-institutional population living in collective households.^{5/}

^{5/} For further details on the definitions of "household" utilized, see Annex 1

Table 1
SURVEYS TAKEN INTO CONSIDERATION IN MAKING UP THE DATA FILE ON INCOME DISTRIBUTION - MAIN CHARACTERISTICS

| Country | Survey s/ Model | Size of sample (households) | Geo-graphical coverage | Reference year of data | Income recorded | | Availability of data | Quality of sampling frame | Bibliographical references |
|------------|--------------------|-----------------------------|------------------------|------------------------|-----------------------------|-----------------------------|----------------------|---------------------------|----------------------------|
| | | | | | Income recipients | Sources | | | |
| Argentina | 6 | 1 790 | MA | June-July 1970 | All | All | AND | B | (12) |
| | 7,20 | 2 822 | MA | March 1970 | All | All | ND | C | (13) |
| Brazil | 10-1 | 3 949 | MA | Sept. 1972 | All | All | AND | A | (14) |
| | 3 | 2 428 | 303/ | March 1967 - Aug. 68 | All | All | ND | B | (15) |
| Colombia | 4,12 | 23 959 | 30/ | Dec. 1969-Mar. 1970 | Employed | Main occupation | TH | A | (16) |
| | 5,2,1 | 79 329 | NI/ | Sept.-Dec. 1972 | All | All | TH | A | (17) |
| Costa Rica | 5,2,2 | 79 329 | NI/ | Sept.-Dec. 1972 | All | All | TH | A | (18) |
| | 3 | 2 949 | 303/ | Jan. 1967-Mar. 1968 | All | All | TH | A | (19) |
| Chile | 4 | 10 305 | N | May-June 1970 | Active | All | TH | A | (20) |
| | 4,1 | 3 560 | 303/ | Nov 1969-Dec. 1970 | All | All | AND | B | (21) |
| Chile | 4,2 | 7 295 | N | July 1971 | All | All | AND | B | (22) |
| | 4,4 | ... | ... | Sept.-Oct. 1971 | Active | All | AND | A | (23) |
| Chile | 4,5 | ... | ... | June 1966-June 1967 | Active | Main occupation | ND | A | (24) |
| | 2,1 | 8 949 | N | 1971 | Active | All | ND | B | (25) |
| Chile | 2,7 | 3 161 | U | Aug-Nov. - 1971 | All | All | TE | B | (26) |
| | 4 | 2 305 | N | Oct. 1967-Feb 1968 | All | All | TE | A | (27) |
| Chile | 5 | 10 424 | N | Jan-May 1968 | Employed (non-agricultural) | Employed (non-agricultural) | TE | A | (28) |
| | 5,5 | ... | ... | May-Nov. 1971 | All | All | TE | A | (29) |
| Chile | 5,6,2 | 10 430 | N | June 1968-Aug 1969 | All | All | TE | A | (30) |
| | 5,13 | 11 314 | N | Jan-May 1968 | All | All | TE | A | (31) |
| Ecuador | 6 | 3 377 | MA | Jan-Apr 1968 | Active | Primary | ND | B | (32) |
| | 2 | 3 000 | U | Jan-Apr 1969 | Active | All | ND | B | (33) |
| Guatemala | 2,1 | 1 365 | 303/ | Feb. 1967-Nov 1968 | All | All | ND | B | (34) |
| | 2,4 | 2 300 | U | Dec. 1968-Dec 1969 | All | All | TE | C | (35) |
| Honduras | 3 | 1 760 | N | Mar. 1967-Apr 1968 | All | All | TE | B | (36) |
| | 1 | 1 760 | N | Apr. 1967-Mar 1968 | All | All | TE | B | (37) |
| Mexico | 6 | 5 853 | N | Jan. 1973-June 1974 | Employed | Primary | ND | A | (38) |
| | 8 | 7 600 | 303/ | Jan. 1973-June 1974 | Employed | Primary | ND | A | (39) |

Table 1. (continued)

| Country | Survey #/ Description | Model | Size of sample (house- holds) | Geo- graph- ical coverage b/ | Reference year of data | Income recorded | | Avail- ability of data frames | Bibliog- raphical refer- ences |
|----------------------------|---|-----------|--|--|---------------------------|-------------------------------|--------------------|--|---|
| | | | | | | Income recipients | Sources | | |
| Panama | 2 Continuing labor survey | Atlantida | ca. 1 000 | N | 1970 | Occupied employees | Main occupation | TE | (29) |
| | 2a8 8th survey | Atlantida | ca. 1 000 | N | 1972 | All | All | TE | (30) |
| | 2a10 10th survey | Atlantida | 5 200 | N | 1970 | All | All | MD | (31) |
| Peru | 3 Income survey | Own | 3 845 | U ^{2/} | July-Dec. 1970 | All | All | MD | (32) |
| | 4a1 National multi-subject household survey | EXIEL | 1 337 | MA | Nov. 1970-Jan. 1969 | All | All | TE | (33) |
| | 7 Family budget survey (CIESRA) | Own | 6 447 | N | Aug. 1970-July 1972 | All | All | MD | (34) |
| Dominican Republic | 8 ENALC-consumption survey | Own | 592 | MA | Dec. 1968-Dec. 1969 | All | All | TE | (35) |
| | 1 Family budget survey | Own | 455 | CC | May-July 1967 | All | All | TE | (36) |
| Uruguay | 2a1 Family budget survey first round | EXIEL | ca. 4 000 | CC | Sept-Dec. 1968 | Active | Primary | TE | (37) |
| | 3a1 Household survey 1st survey | Atlantida | 927 | MA | Sept-Oct. 1966 | All | All | TE | (38) |
| | 3a4 Family budget survey (EV) | EXIEL | 1 173 | MC ^{5/} | Apr. 1967-Feb. 1968 | All | All | TE | (39) |
| | 3a5 Family budget survey (SEV) | EXIEL | 8 979 | N | Jan-May 1971 | Active (non- agricultural) | Primary | TE | (40) |
| | 5 Household sample survey - National level | Atlantida | 8 998 | N | May-Sept. 1971 | All | All | MD | (41) |
| Venezuela | 5-12 12th survey | Atlantida | 5 536 | MA | Feb-Sept. 1970 | Active (com- agricultural) | Primary | TE | (42) |
| | 5-13 13th survey | Atlantida | 5 557 | MA | Sept. 1970-Apr. 1971 | All | All | MD | (43) |
| | 6 Household sample survey - Caracas | Atlantida | ... | U | Apr-Nov. 1970 | All | All | TE | (44) |
| | 6a4 4th survey | Atlantida | ... | U | ... | ... | ... | ... | ... |
| 6a5 5th survey | Atlantida | ... | U | ... | ... | ... | ... | ... | |
| 10 Merca-70 housing survey | Own | ... | U | ... | ... | ... | ... | ... | |

a/ The identification code indicated for each survey is that of the *Investigación Permanente de Estructura de Hogares* kept by the Statistical Division of BOMA.
b/ N: National or country-wide; U: Total urban population or population of the urban area of the country; MA: metropolitan area of the capital or of the main urban nucleus of the country; CC: Capital city; (h): CF: (number of) main cities in the country.
c/ MD: Micro-data available; MD: access to micro-data to make up ad-hoc tabulations; TE: Only tables published or tabulations designed by the executing agency available; ND: No data yet available.
d/ Rio de Janeiro, Porto Alegre and Recife.
e/ Data available on 5 of the country's 7 regions, covering 91 per cent of the total population.
f/ Data available on 6 of the country's 7 regions, covering 92 per cent of the total population.
g/ Excluding agricultural producers.
h/ Bogotá, Barranquilla, Cali and Medellín, covering 44 per cent of the urban population of Colombia.
i/ Bogotá, Barranquilla, Bucaramanga, Cali, Manizales, Medellín and Pasto, which together covered 50 percent of the urban population of Colombia.
j/ Data on Guayaquil.
k/ Metropolitan areas of Mexico City, Guadalajara and Monterrey, taken quarterly as from January 1973.
l/ Sampling persons covered all the territory of the country, although with a small sample (666 households) for the rural areas as a whole. The very high rate of non-response to these questions (65 cases) in this sub-universe finally removed all representativity from the results for the rural areas.
m/ Metropolitan area of Managua.

These excluded segments of the population may represent from 2 to 3.5 per cent of the total population, depending on the country concerned.

Over and above the geographical coverage and the definition of the population to be covered by the sample, it must be borne in mind that some surveys do not register the income of certain categories of recipients. This gives rise to major limitations in the coverage of income distributions by size which can be obtained from the surveys in question.

All the surveys that were designed in accordance with the recommendations of the "Atlantida" model [8] record income only for active recipients or only for employed persons (see table 1). This leaves the passive income-receiving population out of the distribution, and in the second instance - although this is of less importance - also excludes unemployed persons who may receive some income.

Some of the surveys of the "Atlantida" type show another limitation which is even more serious from the standpoint of the measurement of income distribution: they have also followed the recommendations of the model in the sense of not computing incomes for farm operators. In these cases ^{5/} the coverage of the surveys is nation-wide, and they have been designed in such a way that it should be possible to obtain independent estimates for the urban and the rural areas; nevertheless, as a result of the limitation mentioned the only data for income distribution by size that can be obtained are those covering active recipients engaged in non-agricultural activities, and agricultural wage-earners.

6/ The PNAD in Brazil (4 and 5), the Sample Survey of Households in Costa Rica (2), and the Continuing Manpower Survey in Chile (5).

/The foregoing

The foregoing definitions and limitations of coverage mean that in the last analysis there are few surveys which by themselves can supply measurements of income distribution in the national economy as a whole.^{7/}

A few other surveys also provide distributions with national coverage, but only for active recipients.^{8/} The remaining household surveys available can really only supply information on income distribution in urban activities.

6. Factors affecting representativeness of the sample populations

Whether the results of the surveys are representative of the population defined in each case depends upon how far the proposed coverage has really been attained in the survey, without important systematic biases. An attempt can be made at the post hoc detection of biases of this kind, first taking into account the available evidence respecting the sampling frame, the treatment of non-response, and the procedures used to expand the results of the survey, and then analysing the actual composition of the sample population.

(a) Sampling frames and expansion of survey results

Most of the surveys considered, which were held during the late 1960s and early 1970s, used as a sampling frame the maps and lists of housing units available from the 1960-1964 population censuses, and brought up to date with varying degrees of accuracy.

^{7/} Of those listed in table 1, they include the following:

- (i) The fourth survey in the ENH Programme (4.4) in Colombia;
- (ii) The supplementary income surveys (5.6.2 and 5.13) carried out in Chile;
- (iii) The family budget survey (1) in Honduras;
- (iv) Mexico's family budget survey (6);
- (v) The income survey (3) in Panama;
- (vi) The ENCA (8) in Peru.

^{8/} The first survey made under Colombia's ENH Programme (4.1), the Household Survey (2) in Ecuador and the Household Survey (5) in Venezuela (see again table 1).

/It has

It has also been common practice to expand the survey results using as a control or ultimately adopting as the universe some recent and reliable estimate of the total population, generally obtained by the components method with the support of the census data obtained in the 1960s. As a result, estimates of the total population covered by each survey cannot always be taken to reflect the real coverage of the sample. That is perhaps why only in a few cases does a comparison of these estimates with the corresponding totals shown in the demographic estimates prepared by the Latin American Demographic Centre (CELADE) (see table 2) furnish indications of possible defects in the sampling frame: notably in surveys (6) and (7.20) in Argentina and (4.1) in Peru, the expansions based on the sampling frames and sampling fractions utilized gave as a result population figures considerably lower than those resulting from the censuses, or the corresponding CELADE estimate. In the other cases, the relative proximity of the survey totals to those estimates may be an indication both of the adequacy of the sampling frame used and of the fact that in expanding the results of the survey independent demographic estimates were taken into account. The same is true, as a rule, of surveys with sub-national coverage, whose results are compared in table 2 only with those of the most recent population censuses.

The foregoing indications can be supplemented by a qualitative evaluation of the sampling frames, based on analysis of the available information on the sample design of each of the surveys under consideration. In table 1 an attempt is made to classify the quality of the sampling frame of each survey, using three categories. Category A, generally speaking represents frames which may be regarded as adequate because they are based on censuses carried out at dates close to that of the survey, or are constructed by means of a very detailed and accurate up-dating of the maps and units existing in the areas selected. The sample frames classified in category B are acceptable in principle, but may not have been adequately brought

/Table 2

Table 2

TOTAL POPULATION OF THE SURVEYS, COMPARED WITH INDEPENDENT SOURCES, AND SAMPLING ERRORS

| Country | Survey | Geographical coverage | Estimates of total population | | | | Proportion of class totals with variability = 10% c/ (percentage) | |
|------------|--------|-----------------------|-------------------------------|---------------------------|-----------------------------------|---|---|---------|
| | | | Year | Population (in thousands) | Estimate same year (in thousands) | Demographic census Last year (in thousands) | | |
| Argentina | 6 | MA | 1969-1970 | 8 115d/ | ... | 1970 | 8 180 | ... |
| Argentina | 7.20 | MA | 1970 | 8 180e/ | ... | 1970 | 8 180 | 3.2 |
| Argentina | 10.1 | MA | 1972 | 8 632 | ... | 1970 | 8 180 | 2.9 |
| Brazil | 4.12 | Nf/ | 1970 | 84 177 | 85 095 | 1970 | 84 462 | 0.2-0.4 |
| Brazil | 5.2 | Ng/ | 1972 | 90 958 | 90 074 | 1970 | 84 999 | 0.1 |
| Colombia | 3. | ME | 1967-1968 | 3 488 | ... | 1964 | 3 606 | ... |
| Colombia | 4.1 | N | 1970 | 21 156 | 22 160 | 1964 | 17 484 | 0.6 |
| Colombia | 4.2 | MK | 1970 | 6 011 | ... | 1964 | 4 171 | 1.8 |
| Costa Rica | 2.1 | N | 1966-1967 | 1 548 | 1 566h/ | 1953 | 1 336 | 0.7 |
| Costa Rica | 2.7 | U | 1971 | 603 | ... | 1963 | 460 | 2.1 |
| Costa Rica | 4 | N | 1971 | 1 747 | 1 786 | 1973 | 2 003 | 2.3 |
| Chile | 5.6 | N | 1968 | 9 208 | 9 210 | 1970 | 8 853i/ | 0.7 |
| Chile | 5.13 | N | 1971 | 10 042 | 9 205 | 1970 | 8 853i/ | 0.7 |
| Ecuador | 2.1 | U | 1968 | 2 108 | ... | 1974 | 2 853 | ... |
| Honduras | 1 | N | 1967-1968 | 2 335 | 2 373j/ | 1961 | 1 885 | 1.3-5.0 |
| Guatemala | 3 | U | 1969 | 1 544 | 1 420 | 1964 | 1 442 | 3.0 |
| Mexico | 6 | N | 1968 | 48 522 | 47 335 | 1970 | 48 225 | 1.2 |
| Panama | 2.8 | Nk/ | 1970 | 760 | 813 | 1970 | 804 | 0.7 |
| Panama | 2.10 | Nk/ | 1972 | 817 | 890l/ | 1970 | 804 | 0.7 |
| Panama | 3 | N | 1970 | 1 395 | 1 459 | 1970 | 1 428 | 1.5 |
| Peru | 4.1 | U | 1970 | 6 590m/ | 6 690 | 1972 | 7 199 | 0.2-3.6 |
| Peru | 8 | MA | 1971-1972 | 3 743 | ... | 1972 | 3 274n/ | 3.3 |
| Peru | 7 | MA | 1968-1969 | 2 720 | ... | 1972 | 3 302 | ... |
| Uruguay | 2 | CC | 1967 | 1 315 | ... | 1963 | 1 203 | 17.6 |
| Uruguay | 3.1 | CC | 1968 | 1 348 | ... | 1963 | 1 203 | 2.3 |
| Venezuela | 3.4 | MA | 1966 | 1 507 | ... | 1971 | 2 184 | 7.6 |
| Venezuela | 3.5 | ME | 1967-1968 | 604 | ... | 1967 | 603e/ | 5.5 |
| Venezuela | 5.12 | N | 1971 | 10 634 | 10 890 | 1971 | 10 721 | 0.8 |
| Venezuela | 5.13 | N | 1971 | 10 809 | 10 890 | 1971 | 10 721 | 0.8 |
| Venezuela | 6.4 | MA | 1970 | 2 181 | ... | 1971 | 2 184 | 1.4 |
| Venezuela | 6.5 | MA | 1971 | 2 245 | ... | 1971 | 2 184 | 1.4 |
| Venezuela | 10. | U | 1970 | 5 963g/ | 7 592 | 1971 | 7 894 | ... |

a/ Obtained from CELADE, Boletín demográfico, year V, No 11, Santiago, Chile, January 1973; CELADE, Boletín Demográfico, year VII, No 15, Santiago, Chile, January 1974.
b/ With coverage similar to the survey.
c/ Corresponds to the proportion of the total population represented by a class total with a relative error of 10 per cent (with a confidence level of 95 per cent) if this were a simple random sample with the size and sampling fraction of that used in the survey. In surveys with more than one sub-universe the lower and upper proportions are indicated.
d/ The population residing in private households, according to the 1970 census, adjusted at the beginning of the year, was adopted as the universe. The total obtained in accordance with the sampling frame was approximately 6 900 000 persons.
e/ The population residing in private households according to the 1970 census was adopted as the universe. The total obtained according to the sampling frame was 7 129 800 persons.
f/ Only the results of 5 regions out of a total of 7 were published.
g/ Only the results of 6 regions out of a total of 7 were published.
h/ The projection is the average for 1966 and 1967.
i/ Non-adjusted census values with an approximate under-estimate of 8 to 9 per cent.
j/ The projection is the average for 1967 and 1968.
k/ The comparison of the estimates considered is for the population of 15 years of age and over.
l/ The projection is the average for 1970 and 1975.
m/ The CELADE population estimate was adopted as the universe. The value obtained according to the sampling frame was 6 million persons.
n/ Urban Lima.
o/ Estimate of the Dirección General de Estadística de Venezuela and the Ministerio de Fomento.
p/ The survey defines as "urban" all centers of 5 000 inhabitants or more.
q/ For centers of 2 500 inhabitants and over.

/up to

up to date. Category C is reserved for frames suspected of being obsolete at the time when the survey was carried out, or providing inaccurate information.

(b) Non-response

The proportion of non-response affects the coverage and composition of the final sample and, therefore, its representativeness.

The various causes which may lead to failure in observing some of the units selected in the sample fall into two major categories. The first consists of those units of the sample frame which are not included in the population defined (housing units which no longer exist or are unoccupied, and population which does not correspond to the definition of the survey coverage). Properly speaking, they constitute defects in the sampling frame which are not detected until the stage of field investigation. The second category comprises existing units which should have been observed but were not interviewed either because of absence or because they were unwilling to co-operate with the survey.^{9/}

Both are situations of non-response attributable to non-interview and implying the exclusion of units from the survey coverage. A third category of non-response of particular importance for the analysis of income distribution is that constituted by the refusal of the units interviewed to answer questions relating to income.

The relative importance of the various categories of non-response in each of the surveys considered is only imperfectly known. The information available is presented in table 3. The proportion of units that could not be enumerated and were not replaced is known in the case of only a few surveys. The proportion of units not enumerated on account of absence or refusal to co-operate, and duly replaced, is known in only two instances; most of the surveys give no indication of whether this practice was adopted (only in a few instances, shown

^{9/} This comprises attrition in surveys using panels of repeatedly-interviewed households: the eventual refusal to answer of units that were willing to co-operate in the first instance.

Table 3
 KNOWN MAGNITUDE OF NON-RESPONSE, BY TYPES, IN THE SURVEYS PROCESSED
 (Percentage over the total sample selected)

| Country | Survey | Overall non-response (A+C) | Non-interview | | Non-response to income questions (C) |
|-----------------------|--------|----------------------------|-------------------------|----------------------|--------------------------------------|
| | | | Without replacement (A) | With replacement (B) | |
| Argentina | 6 | 28.0 _a / | ... | - | 5.0-10.0 _b / |
| Argentina | 7 | 9.9-11.4 | 2.5-4.0 | - | 7.4 |
| Brazil | Census | ... | ... | ... | 3.3 |
| Brazil | 4.12 | ... | ... | ... | 2.5 _b / |
| Brazil | 5.2.1 | ... | ... | ... | 0.5 _a / |
| Brazil | 5.2.2 | ... | ... | ... | 0.4 |
| Colombia | 3 | 26.2 _d / | ... | - | ... |
| Colombia | 4.1 | ... | ... | ... | 5.0 |
| Colombia | 4.2 | 16.8 | ... | ... | ... |
| Costa Rica | 2.1 | 11.7 | 9.0 | 2.4 | 2.7 |
| Costa Rica | 4 | 13.1 | 5.4 | 7.7 | ... |
| Chile | 5.6 | 5.0 | 3.1 | 4.6 | 1.9 |
| Chile | 6 | 27.8 | ... | - | ... |
| Guatemala | 3 | 17.9 | ... | ... | ... |
| Honduras | 1 | 18.4 | ... | ... | ... |
| Mexico | 6 | ... | 1.4 | - | ... |
| Mexico | Census | ... | ... | ... | 10.0 _a / |
| Panama | 2 | 12.4 | ... | ... | ... |
| Panama | 3 | 13.9 | ... | ... | ... |
| Peru | 4.1(N) | 28.9 | 14.1 | - | 14.7 |
| Peru | 4.1(U) | 15.1 | 14.1 | - | 3.5 |
| Peru | 7 (MA) | 13.0 | ... | - | ... |
| Peru | 8 | 15.3 | ... | ... | ... |
| Dominican Republic | 1 | 8.9 | ... | - | ... |
| Uruguay | 2 | 8.3 | ... | ... | ... |
| Uruguay | 3.1 | ... | ... | ... | 7.0 |
| Venezuela (Caracas) | 3.4 | 14.0 | ... | - | ... |
| Venezuela (Maracaibo) | 3.5 | 10.0 | ... | - | ... |
| Venezuela | 5.12 | ... | ... | ... | 0.5 _a / |
| Venezuela | 6.4 | ... | ... | ... | 4.1 _f / |

a/ More than half corresponds to units unsuitable for interview.
 b/ Calculated by means of supervision controls. Varies between these limits, depending on income items.
 c/ For occupied employees.
 d/ The majority corresponds to cases of selected units that have not been contacted.
 e/ Measures the maximum refusal rate estimated for the individual income-recipients.
 f/ For active income-recipients in non-agricultural activities.

/in table

in table 3, is it known not to have been followed). It is rather easier, on the other hand, to establish the proportion of interviews in which there was non-response to income questions, on the basis of the tabulation of results, where such tabulations include cases whose income is unknown.

The overall non-response, for income measurement purposes, embraces both non-interview and non-response to income questions.^{10/} Overall non-response amounts to from 5 to 10 per cent in some surveys and varies between 14 and 18 per cent in the majority. It seems that in the surveys designed in accordance with the "Atlantida" model, refusal to answer income questions tends to account for a lesser part of the overall non-response, perhaps because of the simplicity and the ancillary character assigned to these questions in the model. In other types of employment surveys, non-response to income questions tends to have the same importance as the non-interview. There is not much point in distinguishing between the two sources of the overall non-response in the family budget surveys, since the current procedure in this type of survey is to drop the questionnaires of units that ultimately refused to answer the questions on income, treating them as refusal to co-operate with the survey.

In a very few of the surveys considered does a systematic study seem to have been made of the non-response sub-group and its possible effects on the representativeness of the sample.^{11/} It is therefore difficult to decide what proportion of each type of non-response is admissible. If a pragmatic point of view is adopted, taking into consideration the standards already reached in the region, 12 per cent might be established as the maximum admissible proportion of non-enumeration, while proportions ranging from 5 to 8 per cent probably

^{10/} When both components are unknown, their joint magnitude can be deduced from the difference between the units selected and the units tabulated with information on income (see table 3).

^{11/} Only in some of the ECIEL surveys rates of non-response by strata were analysed (see, for example, ^{49/}), although in none of the instances that led to changes in the final sample obtained.

/do not

do not imply additional biases of importance in surveys where the sample frame is not fully up-dated. The same cannot be said of non-response to income questions. Proportions in excess of 5 per cent may conceal biases which would seriously affect the representativeness of the sample with regard to the higher income strata.

(c) Sampling variability

Although sampling errors are, as a rule, of minor importance as a source of total measurement errors, they may affect the representativeness of results for relatively unimportant categories of the total population. It is therefore desirable to possess some synthetic indicator which will make it possible to judge survey results from this point of view, whatever use may be made of them.

In the first place, the conventional rule can be accepted that estimates with a relative sampling error of up to 10 per cent can be used for the establishment of general relationships. Secondly, it is necessary to take a short-cut for calculating sampling errors, strictly speaking, this should be done for each estimator in accordance with the sampling design adopted, for every survey. To avoid the difficulties of doing so the standard formulas for sampling errors are used, although they are based on the assumption of simple random sampling and are likely to over-estimate the errors for more complex samples, like those under consideration.

Table 2 includes, for each survey, the proportion of the population represented by the class totals in which the relative sampling error is about 10 per cent (with a confidence level of 95 per cent), in a simple random sample whose sampling size and fraction are similar to those of the sample used for the survey.^{12/} Any magnitude in the results of a survey representing a proportion of the population smaller than that indicated in table 2 would have a relative error of more than 10 per cent. These proportions can be considered, moreover, as the minimum for this line of reasoning, since they represent simple random sampling, whereas all the surveys considered are of the multi-stage type.

^{12/} That is to say, $\frac{\hat{A}}{N}$, so that $C.V.(\hat{A}) \geq 0.1$, where:

\hat{A} : class total estimate

N: total population.

/7. Sample

7. Sample composition

(a) Urban-rural composition in national coverage surveys

Nearly all the national coverage surveys considered make a distinction between urban areas and rural areas in the primary sample. The areas constituting the urban primary sampling units are generally identified on the basis of criteria similar to those used in population censuses in the countries concerned (see table 4). This is perfectly logical in view of the fact that in the majority of these surveys the results of the latest population census are used to construct their sample frame. In some cases, however, the definition of urban area is based on the census definition, but in a more restricted form as in the case of survey (4.1) in Peru, and perhaps also survey (4.12) in Brazil. The continuing survey in Chile (5.6) is really an exception since it defines urban areas in the light of a far more restricted criterion than that used in that country's population censuses.

If these different definitions and reference periods are taken into consideration, the comparison made in table 4 reveals only one case in which any significant incongruence between the urban-rural composition of national coverage surveys and the results of the population census concerned. In this case (survey 4.12 in Brazil), the proportion of urban population in the total sample is considerably smaller than that resulting from the census conducted in the same year. Although it has not been possible to clear up completely the question whether or not the difference in composition is partly attributable to the application, in practice, of somewhat more restricted criteria for the definition of urban areas than those used in the census, the possibility that this survey may be biased in favour of the rural population cannot be entirely overlooked.

/Table 4

Table 4

DEFINITIONS OF URBAN AREA AND URBAN-RURAL STRUCTURE IN NATIONAL COVERAGE SURVEYS

| Country | Survey | Definition of urban area | Year of the survey | Urban % | Last demographic census | |
|------------|--------|---|--------------------|--------------------|-------------------------|-----------------------|
| | | | | | Year | Urban % ^{a/} |
| Brazil | 4.12 | Population centers defined as urban since they contain cities or villas (id. census) | 1970 | 50.3 ^{b/} | 1970 | 56.9 ^{b/} |
| Brazil | 5.2 | Id. 4.12 | 1972 | 59.9 ^{c/} | 1970 | 57.1 ^{c/} |
| Colombia | 4.1 | Population centers of 1 500 inhabitants and over (id. census) | 1970 | 58.3 | 1964 | 52.8 |
| Costa Rica | 2.1 | Areas identified as urban (id. census) | 1966-1967 | 38.6 | 1963 | 34.5 |
| Costa Rica | 4 | Areas identified as urban (id. census) | 1971 | 41.8 | 1973 | 40.6 |
| Chile | 5.6 | Groups of population centers of 10 000 inhabitants and over | 1968 | 58.8 | 1970 | 76.0 ^{d/} |
| Mexico | 6 | Centers of less than 2 500 inhabitants (id. census) | 1968 | 54.2 | 1970 | 58.7 |
| Panama | 2.8 | Centers of 1 500 inhabitants and over which also possess a specific infrastructure (id. census) | 1970 | 60.6 ^{e/} | 1960 ^{e/} | 47.9 ^{e/} |
| Peru | 4.1 | Population centers of 2 000 inhabitants or more (id. census) which also possess a specific infrastructure | 1970 | 48.0 | 1972 | 53.0 |
| Venezuela | 5.12 | Centers of 2 500 inhabitants and over (id. census) | 1971 | 72.5 | 1971 | 73.1 |

^{a/} According to the census definitions of urban area.

^{b/} Only for 5 regions.

^{c/} Only for 6 regions.

^{d/} According to the census definition (centers with urban characteristics and infrastructure).

^{e/} Population of 15 years of age and over.

^{f/} The data available from the 1970 census do not make it possible to identify the population of 15 years of age and over in urban or rural areas.

/In conclusion,

In conclusion, most of the national coverage surveys show no significant biases in the urban-rural composition of the total sample. In some, however, this is not true of the sample of recipients on which the distribution of income is based: in such cases (see table 1), the aforementioned practice of not recording the income of agricultural producers impairs the validity of the results with respect to the population in rural areas.

(b) Demographic composition of the samples

It is already current practice in Latin America to evaluate both total and differential coverage by sex and age of population censuses by indirect methods using independent demographic estimates [45] [46]. This practice is equally applicable to household surveys. The "Atlantida" model includes it in its recommendations for employment surveys carried out in the region, with the purpose of ensuring the representativeness of the samples. In some of the surveys under review the results have been reweighted - as shown in table 5 - in accordance with the composition of independent demographic estimates by sex and age, since it was considered that they more accurately represented the demographic structure of the population than the final sample obtained. We ourselves have repeated the exercise of controlling the demographic composition of the samples by comparing them with independent estimates with similar coverage and approximately the same reference period. For those surveys in which such a comparison was feasible, table 5 includes the relative deviations in the results with respect to those of the corresponding independent estimate, by age groups and by sex.

In no case are they merely random differences, as shown by the values of chi square. In view of the possible influence of response errors in the classifications of the sample and the margins of variability imputable to the estimates used as a yardstick, it is however advisable to accept more than the admissible discrepancies in determining their significance. Heuristically, it may be

/Table 5

Table 5
RELATIVE DEVIATIONS^{a/} BY AGE AND SEX, OF THE RESULTS FROM SOME SURVEYS,
COMPARED WITH THOSE OF INDEPENDENT ESTIMATES

(Percentage)

| Country | Argentina | | Brazil | | Chile | Colom- bia | Costa Rica | Panama | Peru | Vene- zuela |
|--------------------------------------|-----------|--------|--------|--------|-------|---------------|---------------|--------|--------|----------------|
| Survey | 7.20 | 10.1 | 4.12 | 5.2 | 5.6 | 4.1 | 2.1 | 2.8 | 4.1 | 5.12 |
| Results corresponding to the year | 1970 | 1972 | 1970 | 1972 | 1968 | 1970 | 1967 | 1970 | 1970 | 1971 |
| Independent estimate used | b/ | b/ | c/ | d/ | e/ | f/ | g/ | h/ | i/ | j/ |
| I. Sex | | | | | | | | | | |
| Female | -0.33 | ... | -0.67 | -0.66 | -1.06 | -2.74 | -1.13 | ... | -3.73 | 1.80 |
| II. Age-groups | | | | | | | | | | |
| 0 - 4 | | -4.65 | 2.46 | 6.53 | | | -13.05 | 1.81 | 0.76 | -16.99 |
| 5 - 9 | | -5.00 | -4.18 | -1.87 | | 3.26 | -3.08 | | -5.41 | -3.61 |
| 10 - 14 | 4.80 | -2.56 | | -3.02 | -2.26 | | 4.89 | -0.91 | -27.11 | 0.04 |
| 15 - 19 | | -2.47 | -0.93 | | 3.08 | -8.82 | 8.21 | -4.58 | 9.68 | 6.68 |
| 20 - 24 | | 9.30 | 12.47 | -0.45 | 2.68 | | 8.44 | 1.65 | 19.15 | 7.13 |
| 25 - 29 | 6.52 | 6.49 | 6.17 | 4.41 | 2.61 | 16.68 | 6.72 | | 20.10 | |
| 30 - 34 | | 7.04 | -1.72 | -1.50 | 1.10 | | -0.18 | | 15.89 | 0.67 |
| 35 - 39 | 5.30 | 7.04 | | 0.89 | 2.67 | | -1.25 | 0.18 | -2.51 | 0.21 |
| 40 - 44 | | -1.37 | -4.89 | -2.70 | -0.61 | | 3.64 | -4.12 | -3.37 | |
| 45 - 49 | -2.88 | -6.06 | | 2.80 | -6.06 | | 0.00 | | -4.82 | -0.16 |
| 50 - 54 | -16.89 | -1.85 | -6.64 | 1.90 | -1.94 | -7.27 | -2.52 | -1.72 | -7.64 | |
| 55 - 59 | | 7.69 | | 2.36 | 3.08 | | 0.00 | | 6.67 | 0.25 |
| 60 - 64 | -12.56 | 0.00 | | 2.65 | -4.24 | -13.06 | | | -13.64 | |
| 65 - 69 | | -2.94 | | | | | | | -0.78 | |
| 70 - 74 | | | -1.29 | | -1.11 | -21.95 | -1.94 | 2.89 | -12.50 | 40.54 |
| 75 - 79 | 4.35 | -16.67 | | -11.18 | | | | | -64.56 | |
| 80 and over | | | | | | -18.00 | | | | |
| Kuznets coefficients k/ | 6.7 | 5.4 | 3.8 | 3.1 | 2.2 | 7.6 | 5.8 | 2.0 | 11.4 | 6.6 |
| X ² | 73.7 | 69.8 | 302.6 | 557.5 | 27.3 | 613.7 | 262.4 | 32.3 | 748.9 | 557.1 |

The results of the survey were re-weighted in accordance with the sex and age structure of an independent estimate

X X X

a/ $\frac{\text{Estimate} - \text{Survey}}{\text{Estimate}} \times 100.0$

b/ 1970 population census.

c/ 1970 population census.

d/ CELADE, "Proyección de la población por grupos quinquenales de edades". Interpolation 1970-1975.

e/ CELADE, Op.cit. Interpolation 1965-1970.

f/ CELADE, Op.cit. 1970.

g/ CELADE, Op.cit. Interpolation 1965-1970.

h/ CELADE, Op.cit. Interpolation 1965-1970.

i/ Boletín de análisis demográfico, Lima, Perú 1968. "Estimación de población urbana por grupos quinquenales de edades para el año 1970".

j/ 1971 population census.

k/ Sum of the absolute differences in relative share (percentage).

/accepted that

accepted that only deviations of over 10 per cent may be indicating problems in the demographic composition of the sample, and therefore, in its representativeness. Moreover, in analysing the distribution of income, it is even more important to ensure the representativeness of the active age groups, which comprise most of the sample of income recipients.

Table 5 shows significant deviations - in accordance with those criteria - in the whole age pyramid only in survey (4.1) in Peru.^{13/} Surveys (7.20) in Argentina, (4.12) in Brazil and (4.1) in Colombia show deviations of over 10 per cent in one or another active age group, but this is not the general pattern. Survey (5.12) in Venezuela, on the other hand, presents significant deviations only in inactive age groups, which is a less important factor in analysing the distribution of income among individual recipients.^{14/}

These comparisons of age pyramids serve as the basis for a first broad verification of the representativeness of the samples of persons. Using a similar approach, the composition of the corresponding household samples may be verified by comparing the distribution of the sample by size of household with that resulting from the population census. The resulting deviations are considerably greater than those calculated for the age pyramids of the corresponding samples of persons,^{15/} but it is difficult to judge whether they are due to the actual existence of biases in the sample or to the different definitions of household used in censuses and surveys.

^{13/} Note the Kuznets coefficient of over 11 per cent for this survey.

^{14/} The same might be said of surveys (5.2) in Brazil and (2.1) in Costa Rica, but it should be remembered that in both these cases, as in survey (5) in Chile, the differences calculated in table 5 merely reflect the above-mentioned margin of variability of the demographic estimates, since the composition of each of the samples has already been adjusted to that of an independent demographic estimate, different from that used here.

^{15/} The respective Kuznets coefficients, which constitute a measure of the relative mean difference between censuses and household samples, are: Brazil (4.12):10.5; Costa Rica (2):11.0; Chile (5):4.3; Uruguay (3.1):21.9.

(c) Occupational structure

The fact that a sample may be considered to be reasonably representative of the population as regards its demographic structure does not finally ensure that the main occupational groups of the population are also properly represented. Moreover, the biases in the occupational structure of the samples have a more direct and clearly-defined effect on the income distribution resulting from the surveys. Hence the importance of analysing this structure, despite the limitations involved in comparing different sources in the case of occupational characteristics.

The occupational composition of the surveys can only be compared, in the first place, with that of the results of demographic censuses or with interpolations based on those results, such as those included in annex A. This means that it is impossible to avoid problems of census omission or the interdependence that might subsist between sample and census through the sampling frame, as can be done in the case of independent demographic estimates. Secondly, there are some differences between the definitions used in surveys and censuses. Thirdly, as distinct from most household surveys, censuses present a certain proportion of active population without determining their occupational status or kind of activity. The arbitrarily proportional distribution of this population by classes, as in annex A, increases the inaccuracy of the distributions used in the comparison. Lastly, the difference between the reference periods is only imperfectly covered by means of the inter-census interpolations in annex A, which reflect the medium-range trend but take no account of the annual or seasonal fluctuations in the structure of employment.

For all these reasons, it is necessary to broaden the area doubt in these comparisons, which is tantamount to accepting bigger margins of discrepancy between surveys and census estimates, rather than seriously doubting the representativeness of the samples or, alternatively, the reliability of the census results.

/In the

In the first place, a comparison of the overall rates of participation of the population of active age in economic activities (see table 6) reveals a tendency which in some surveys is particularly pronounced, to estimate the economically active population with more latitude than in the relevant population censuses. This may be attributed only in small measure to the above-mentioned differences in composition by ages; the most acceptable explanation may be found in the greater precision with which the surveys investigate the employment situation of the persons concerned, which enables the cases on the fringe of the labour force to be included. Probably this same circumstance accounts for another feature of the surveys which is also clearly manifest (see table 7): the fact that they include in the economically active population significantly larger proportions of unemployed and unpaid family workers than the population censuses. If so, both features would be associated and the additional proportion of active population included in the surveys would be made up mainly of individuals belonging to these two categories. The results of the surveys would therefore be closer to the census results in measuring the income-receiving employed population.

Secondly, it may be observed that in most of the samples the proportions of employees and self-employed in the total income-receiving population are markedly similar to those shown in the respective population censuses. Of the surveys included in table 7, only Brazil's show a clear over-representation of employees, while survey (7.20) in Argentina shows a curious under-representation of this occupational category as compared with the census.

At more detailed levels of classification, however, the similarities fade somewhat. In the surveys, larger proportions of the self-employed tend to be classified as employers than in the censuses. This may easily be attributable also to the greater

Table 6

COMPARISON OF THE OVERALL RATES OF PARTICIPATION OF THE POPULATION OF ACTIVE AGE IN THE SURVEYS WITH THOSE OF THE CORRESPONDING DEMOGRAPHIC CENSUSES

| Country | Survey | Lower age limit considered | Survey results | | Census results | |
|------------|--------|----------------------------|----------------|------------------------------------|----------------|------------------------------------|
| | | | Year | Overall rates of participation (%) | Year | Overall rates of participation (%) |
| Argentina | 7.20 | 14 | 1970 | 57.2 | 1970 | 52.8 |
| Argentina | 10.1 | 14 | 1972 | 51.9 | 1970 | 52.8 |
| Brazil | 4.12 | 14 | 1970 | 60.0 | 1970 | 52.1 |
| Brazil | 5.2 | 10 | 1972 | 52.7 | 1970 | 44.9 |
| Colombia | 4.1 | 12 | 1970 | 47.5 | 1964 | 48.2 |
| Costa Rica | 2.1 | 12 | 1967 | 50.2 | 1963 | 49.6 |
| Chile | 5.6 | 12 | 1968 | 45.0 | 1970 | 43.1 |
| Chile | 5.13 | 12 | 1971 | 44.4 | 1970 | 43.1 |
| Ecuador | 2.1 | 12 | 1968 | 46.7 | 1962 | 49.7 |
| Panama | 2.8 | 15 | 1970 | 61.3 | 1970 | 59.2 |
| Panama | 2.10 | 15 | 1972 | 59.0 | 1970 | 59.2 |
| Peru | 4.1 | 14 | 1970 | 58.5 | 1961 | 54.2 |
| Uruguay | 2 | 14 | 1967 | 52.8 | 1963 | 51.4 |
| Uruguay | 3.1 | 14 | 1968 | 48.1 | 1963 | 51.4 |
| Venezuela | 5.12 | 15 | 1971 | 56.3 | 1971 | 51.1 |
| Venezuela | 5.13 | 15 | 1971 | 55.5 | 1971 | 51.1 |
| Venezuela | 6.4 | 15 | 1970 | 60.9 | 1971 | 56.8 |

/Table 7

Table 7

STRUCTURE OF THE ECONOMICALLY ACTIVE POPULATION OF SOME SURVEYS, BY OCCUPATIONAL STATUS,
COMPARED WITH THAT OF THE RESPECTIVE ESTIMATES, BASED ON DEMOGRAPHIC CENSUSES/
(Percentages)

| Country and source | Year | Geo- graph- ical cover- age | Paid active population | | | | Unpaid active population | | Total eco- nomi- cally active popu- lation | |
|--------------------|------|---|------------------------|----------------|----------------|-------------------|-----------------------------|----------------------------|--|-------|
| | | | Em- ployees | Self-employed | | Family workers | New workers | | | |
| | | | | Total | Em- ployers | | | Own- account workers | | |
| Argentina | | | | | | | | | | |
| Survey 7.20 | 1970 | MA | 70.5 (72.8) | 26.4 (27.2) | 2.9 | 23.5 | 96.9 (100.0) | 2.0 | 1.1 | 100.0 |
| Estimate | 1970 | MA | 78.6 (79.4) | 20.4 (20.6) | 6.0 | 14.4 | 99.0 (100.0) | 1.0 | - | 100.0 |
| Survey 10.1 | 1972 | MA | 73.1 (75.1) | 24.2 (24.9) | 4.8 | 19.4 | 97.3 (100.0) | 1.6 | 1.1 | 100.0 |
| Brazil | | | | | | | | | | |
| Survey 4.12 | 1970 | Nb/ | 53.3 (65.2) | 28.5 (34.8) | ... | ... | 81.8 (100.0) | 17.6 | 0.6 | 100.0 |
| Estimate | 1970 | N | 54.8 (60.8) | 35.3 (39.2) | 1.5 | 33.8 | 90.1 (100.0) | 9.9 | - | 100.0 |
| Survey 5.2 | 1972 | N | 54.8 (66.3) | 27.8 (33.7) | 4.1 | 23.7 | 82.6 (100.0) | 16.2 | 1.2 | 100.0 |
| Estimate | 1972 | N | 55.7 (61.5) | 34.9 (38.5) | 1.5 | 33.4 | 90.6 (100.0) | 9.4 | - | 100.0 |
| Colombia | | | | | | | | | | |
| Survey 4.1a/ | 1970 | N | 58.1 (63.4) | 33.6 (36.6) | 9.6 | 24.1 | 91.7 (100.0) | 8.3 | - | 100.0 |
| Estimate c/ | 1970 | N | 59.7 (64.5) | 32.8 (35.5) | 7.8 | 25.0 | 92.5 (100.0) | 7.5 | - | 100.0 |
| Costa Rica | | | | | | | | | | |
| Survey 2.1 | 1967 | N | 68.9 (76.2) | 21.5 (23.8) | ... | ... | 90.4 (100.0) | 9.0 | 0.6 | 100.0 |
| Estimate | 1967 | N | 69.4 (76.5) | 21.3 (23.5) | ... | ... | 90.7 (100.0) | 8.6 | 0.7 | 100.0 |
| Chile | | | | | | | | | | |
| Survey 5.6 | 1968 | N | 68.3 (73.6) | 24.5 (26.4) | 1.5 | 23.0 | 92.8 (100.0) | 6.5 | 0.8 | 100.0 |
| Estimate c/ | 1968 | N | 68.8 (73.1) | 25.3 (26.9) | 1.7 | 26.3 | 94.1 (100.0) | 5.9 | - | 100.0 |
| Panama | | | | | | | | | | |
| Survey 2.8 c/ | 1970 | N | 54.5 (60.6) | 35.5 (39.4) | ... | ... | 90.0 (100.0) | 10.0 | - | 100.0 |
| Estimate | 1970 | N | 55.2 (60.3) | 36.3 (39.7) | 1.3 | 35.0 | 91.5 (100.0) | 5.0 | 3.5 | 100.0 |
| Uruguay | | | | | | | | | | |
| Survey 3.1 | 1968 | MA | 79.1 (82.4) | 16.9 (17.6) | 7.1 | 9.8 | 96.0 (100.0) | 0.3 | 3.7d/ | 100.0 |
| Census | 1963 | MA | 77.1 (80.7) | 18.4 (19.3) | 7.3 | 11.1 | 95.5 (100.0) | 0.3 | 4.2d/ | 100.0 |
| Survey 2 | 1967 | MA | 80.5 | 19.5 | (5.3) | (14.2) | (100.0) | ... | ... | |
| Venezuela | | | | | | | | | | |
| Survey 5.12 | 1971 | N | 65.0 (70.0) | 27.9 (30.0) | 4.4 | 23.5 | 92.9 (100.0) | 6.1 | 1.0 | 100.0 |
| Estimate | 1971 | N | 64.5 (67.6) | 30.9 (32.4) | 2.7 | 28.2 | 95.4 (100.0) | 3.4 | 1.2 | 100.0 |

a/ Presented in annex A.
b/ 5 regions.
c/ Corresponds to employed population.
d/ Including unspecified occupational status.

/precision of

precision of surveys in determining occupational status ^{16/} rather than to differences in the composition of the populations concerned.^{17/} Moreover, in the composition of employees by kind of economic activity, the differences between the samples and the corresponding censuses are more significant (see table 8); the respective Kuznets coefficients are fairly revealing in this respect. To some extent, the different sectoral classification criteria used in practice and the response errors to questions regarding activity may partly account for these discrepancies.^{18/} Even considering this possibility, however, the size of the differences in composition between some surveys - such as (7.20) in Argentina and (5.12) in Venezuela - and the respective population censuses continues to indicate significant biases.

^{16/} The "Atlantida" model, for example, includes an additional question for the self-employed with the object of determining whether they normally employ any paid personnel, the response to which permits the ultimate sub-classification as either employer or own-account worker.

^{17/} This explanation does not, however, seem to be applicable to the discrepancy shown in survey (7.20) in Argentina (or perhaps either in some of the surveys which it has not been possible to include in table 7). In this case, the self-employed paying up to two employees were classified as own-account workers, in spite of which the proportion of this category in the total number of self-employed is considerably higher than that registered in the census.

^{18/} This hypothesis seems even more convincing when the differences in composition of the three services sectors are observed as a whole in table 8.

Table 8

STRUCTURE OF EMPLOYEES BY KIND OF ECONOMIC ACTIVITY IN SOME SURVEYS, COMPARED WITH THAT OF THE RESPECTIVE ESTIMATES BASED ON DEMOGRAPHIC CENSUSES

(Percentages)

| Country and source | Year | Geo-graphical coverage | Kinds of activity | | | | | | | Unspe-cified activ-ity | Total | Kuznets coefficient |
|--------------------|--------|------------------------|-------------------|---------------------|---------------|-----------------------------|-----------|-----------|-----|------------------------|-------|---------------------|
| | | | Agricul-ture | Mining and industry | Con-struction | Trans-port and elec-tricity | Commer-ce | Serv-ices | | | | |
| Argentina | | | | | | | | | | | | |
| Survey 7.20 | 1970b/ | MA | 0.3a/ | 40.9d/ | 6.6 | 7.7 | 13.6 | 30.9 | - | 100.0 | 14.0 | |
| Estimate | 1970a/ | MA | 0.8a/ | 36.6d/ | 8.8 | 7.7 | 17.9 | 28.2 | - | 100.0 | | |
| Argentina | | | | | | | | | | | | |
| Survey 10.1 | 1972b/ | MA | 0.2 | 42.5d/ | 8.1 | 7.6 | 16.4 | 25.2 | - | 100.0 | 11.8 | |
| Estimate | 1970a/ | MA | 0.8a/ | 36.6d/ | 8.8 | 7.7 | 17.9 | 28.2 | - | 100.0 | | |
| Brazil | | | | | | | | | | | | |
| Survey 5.2 | 1972b/ | N | 21.5 | 21.1 | 7.6 | 6.4 | 7.8 | 32.6 | 3.0 | 100.0 | 8.6 | |
| Estimate | 1972a/ | N | 20.2 | 35.3f/ | 10.6 | 33.9 | - | 100.0 | - | 100.0 | | |
| Colombia | | | | | | | | | | | | |
| Survey 4.1 | 1970b/ | N | 31.5 | 17.3 | 4.6 | 5.8 | 11.8 | 29.0 | - | 100.0 | 8.6 | |
| Estimate | 1970a/ | N | 30.5 | 18.8 | 6.4 | 6.7 | 8.5 | 29.1 | - | 100.0 | | |
| Costa Rica | | | | | | | | | | | | |
| Survey 2.1 | 1967a/ | N | 36.9 | 14.5 | 5.7 | 5.9 | 9.4 | 25.7 | 1.9 | 100.0 | 8.6 | |
| Estimate | 1967a/ | N | 37.2 | 12.6 | 8.0 | 7.0 | 10.0 | 25.2 | - | 100.0 | | |
| Chile | | | | | | | | | | | | |
| Survey 5.6 | 1968 | N | 20.5 | 25.1 | 8.8 | 8.0 | 9.9 | 27.8 | - | 100.0 | 7.1 | |
| Estimate | 1968b/ | N | 20.8 | 25.5 | 7.2 | 7.2 | 8.7 | 30.6 | - | 100.0 | | |
| Panama | | | | | | | | | | | | |
| Survey 2.8 | 1970b/ | N | 14.3 | 13.2 | 7.2 | 5.5 | 14.7 | 45.1 | - | 100.0 | 11.2 | |
| Estimate | 1970a/ | N | 14.6 | 11.1 | 8.2 | 5.3 | 19.0 | 41.8 | - | 100.0 | | |
| Venezuela | | | | | | | | | | | | |
| Survey 5.12 | 1971b/ | N | 10.9 | 24.5 | 5.1 | 8.7 | 14.9 | 35.9 | - | 100.0 | 20.4 | |
| Estimate | 1971a/ | N | 12.7 | 19.1 | 7.1 | 6.9 | 11.9 | 42.3 | - | 100.0 | | |

a/ Presented in Annex A.

b/ Corresponds to employed population.

c/ Primary sector: Agriculture and mining and quarrying.

d/ Manufacturing and electricity.

e/ Corresponds to economically active population.

f/ Grouping: Mining and quarrying, industry, construction, transport and electricity.

/Lastly, in

Lastly, in the sectoral composition of the self-employed, the differences between surveys and censuses are undoubtedly considerable. The comparisons included in table 9 show clearly that a good many of the differences in composition are attributable to the under-enumeration of agricultural producers in the surveys. The differences in the composition of urban entrepreneurs are reflected in Kuznets coefficients of the order of 10-15 per cent and are concentrated in the services sectors.^{19/}

(d) Apparent representativeness of the samples by socio-economic groups

This set of indications of possible biases in the occupational structure of the sample populations raises an obvious question: how far, finally, are the major socio-economic groups which characterize the social stratification adequately represented in these populations?

An attempt is made to illustrate this view of the problem in table 10. Both the insufficient detail of the available statistics and the problems of comparability referred to above make it possibly only to demarcate a stratification limited to the active recipients divided into very broad groups (no distinction is made, for example, between employees according to their occupation). On the other hand, this rough socio-economic classification consolidates the reliability of the census results used as a yardstick.

At this high level of aggregation, it may be concluded that the biases in composition do not really invalidate the representativeness by socio-economic groups of any of the samples analysed. Some of the aforementioned biases, however, are of a magnitude which makes it necessary to take them into account: the almost uniform under-representation of agricultural producers; the unequal representation of employers and own-account workers in urban sectors, which in some

^{19/} In this case too, however, survey (7.20) in Argentina shows differences about three times as large as those recorded in the rest of the surveys analysed.

Table 9

STRUCTURE OF ENTREPRENEURS BY KIND OF ECONOMIC ACTIVITY IN SOME SURVEYS COMPARED
WITH THAT OF THE RESPECTIVE ESTIMATES BASED ON DEMOGRAPHIC CENSUSES^{a/}
(Percentages)

| Country and source | Year | Geo- graph- ical cover- age | Kinds of activity | | | | | | | Total | Kuznets coeffi- cient |
|--------------------|--------|---|-----------------------|---------------------------|------------------------|---|---------------|---------------|-----------------------------------|-------|-----------------------------|
| | | | Agri- cul- ture | Mining and industry | Con- struc- tion | Trans- port and elec- tricity | Com- merce | Serv- ices | Unspe- cified activ- ity | | |
| Argentina | | | | | | | | | | | |
| Survey 7.20 | 1970b/ | MA | 1.1c/ | 30.9d/ | 9.9 | 6.0 | 31.0 | 21.1 | - | 100.0 | } 24.3 |
| Estimate | 1970e/ | MA | 1.9c/ | 27.0d/ | 11.4 | 6.7 | 43.3 | 16.0 | - | 100.0 | |
| Argentina | | | | | | | | | | | |
| Survey 10.1 | 1972b/ | MA | 0.4 | 20.8d/ | 13.4 | 5.8 | 39.2 | 20.4 | - | 100.0 | } 19.1 |
| Estimate | 1970e/ | MA | 1.9c/ | 27.0d/ | 11.4 | 6.7 | 43.3 | 16.0 | - | 100.0 | |
| Brazil | | | | | | | | | | | |
| Survey 5.2 | 1972b/ | N | 53.3 | 5.6 | 0.4 | 3.5 | 13.1 | 22.3 | 1.8 | 100.0 | } 29.4 |
| Estimate | 1972e/ | N | 67.5 | 10.0f/ | - | 10.3 | 12.2 | - | - | 100.0 | |
| Colombia | | | | | | | | | | | |
| Survey 4.1 | 1970b/ | N | 47.7 | 14.3 | 3.3 | 3.0 | 20.8 | 10.9 | - | 100.0 | } 17.8 |
| Estimate | 1970b/ | N | 55.0 | 16.7 | 2.9 | 3.2 | 17.3 | 5.9 | - | 100.0 | |
| Costa Rica | | | | | | | | | | | |
| Survey 2.1 | 1967e/ | N | 57.5 | 13.7 | 1.3 | 3.4 | 15.2 | 7.0 | 1.9 | 100.0 | } 9.8 |
| Estimate | 1967e/ | N | 58.3 | 13.1 | 1.6 | 3.0 | 19.0 | 5.0 | - | 100.0 | |
| Chile | | | | | | | | | | | |
| Survey 5.6 | 1968e/ | N | 30.7 | 23.9 | 4.9 | 5.9 | 23.3 | 11.3 | - | 100.0 | } 10.0 |
| Estimate | 1968b/ | N | 30.4 | 20.6 | 4.2 | 5.2 | 24.0 | 15.6 | - | 100.0 | |
| Panama | | | | | | | | | | | |
| Survey 2.8 | 1970b/ | N | 56.6 | 11.0 | 4.0 | 4.7 | 10.9 | 12.8 | - | 100.0 | } 31.6 |
| Estimate | 1970e/ | N | 72.4 | 5.1 | 3.4 | 3.9 | 8.7 | 6.5 | - | 100.0 | |
| Venezuela | | | | | | | | | | | |
| Survey 5.12 | 1971b/ | N | 31.2 | 16.1 | 5.4 | 7.5 | 29.4 | 10.3 | 0.1 | 100.0 | } 20.0 |
| Estimate | 1971e/ | N | 41.2 | 15.7 | 5.1 | 5.6 | 22.6 | 9.8 | - | 100.0 | |

a/ Presented in Annex A.

b/ Corresponds to employed population.

c/ Primary sector: Agriculture and mining and quarrying.

d/ Manufacturing and electricity.

e/ Corresponds to economically active population.

f/ Grouping: Mining and quarrying, industry, construction, transport and electricity.

Table 10

STRUCTURE OF THE PAID ACTIVE POPULATION OF SOME SURVEYS, BY MAJOR SOCIO-ECONOMIC GROUPS, COMPARED WITH THAT OF THE RESPECTIVE ESTIMATES BASED ON DEMOGRAPHIC CENSUSES

| | Argentina (1970) | | Brazil (1970) | | Brazil (1972) | | Colombia (1970) | | Costa Rica (1967) | | Chile (1968) | | Panama (1970) | | Venezuela (1971) | |
|--|------------------|---------------|---------------|---------------|---------------|---------------|-----------------|---------------|-------------------|---------------|--------------|---------------|---------------|---------------|------------------|---------------|
| | Survey | Esti- mate | Survey | Esti- mate | Survey | Esti- mate | Survey | Esti- mate | Survey | Esti- mate | Survey | Esti- mate | Survey | Esti- mate | Survey | Esti- mate |
| 1. Farmers | 7.20 | 7.20 | 21.2 | 26.9 | 18.2 | 26.0 | 17.5 | 19.5 | 14.0 | 13.7 | 8.1 | 8.2 | 22.3 | 20.7 | 9.7 | 13.4 |
| 2. Employees in agricultural | - | - | 13.7 | 22.9 | 14.1 | 12.4 | 19.9 | 19.7 | 28.9 | 28.5 | 15.1 | 15.2 | 8.7 | 8.8 | 7.5 | 8.6 |
| 3. Self-employed in urban sectors | 3.1 | 6.1 | ... | 0.9 | 2.7 | 0.9 | 3.7 | 2.6 | ... | ... | 1.3 | 1.4 | ... | ... | 3.8 | 2.0 |
| 3.1 Employers | 9.7 | 4.8 | 2.1b/ | 2.4 | 1.4 | 2.5 | 5.3 | 5.6 | 3.6b/ | 3.5b/ | 7.2 | 6.2 | 5.9b/ | 3.4b/ | 5.3 | 6.1 |
| 3.2 Non-account workers in the production of goods | 14.2 | 9.8 | 12.5b/ | 8.9 | 12.0 | 9.1 | 10.2 | 7.8 | 5.1b/ | 6.3b/ | 9.9 | 11.1 | 11.2b/ | 7.5b/ | 12.2 | 10.9 |
| 3.3 Non-account workers in services | 34.5 | 36.6 | 20.2 | 17.5 | 19.6 | 18.1 | 14.3 | 16.9 | 17.1 | 17.0 | 25.4 | 24.4 | 13.4 | 12.6 | 22.1 | 19.1 |
| 4. Employees in urban sectors | 37.8 | 42.7 | 30.5 | 30.5 | 32.0 | 31.0 | 29.1 | 27.9 | 31.0 | 31.0 | 33.0 | 33.5 | 36.5 | 39.0 | 39.4 | 39.9 |
| 4.1 Employees in the production of goods | | | | | | | | | | | | | | | | |
| 4.2 Employees in services | | | | | | | | | | | | | | | | |

a/ Corresponds to employed population.

b/ Including employers.

/cases may

cases may be due to differences in identification criteria, but in other surveys undoubtedly indicates biases in composition; the tendency towards over-representation of own-account workers in services, which is also observable in most of the surveys; the degree to which employees in secondary activities are represented in each survey.

Strictly speaking, what has been done so far can only be considered as a "half-way" verification of the representativeness of the surveys. The major socio-economic groups considered - and even their sectoral disaggregation analysed above - are far from being internally homogeneous; below the tolerable differences in composition detected at this level of aggregation there may be biases in the occupational structure of each group resulting in significant distortions in the distribution of income of the group and also, therefore, in the distribution of all the recipients. Hence, the representativeness attributed to each survey in the above-mentioned analysis may, in a sense, be only apparent.

If the biases in the composition of sample populations by socio-economic groups are indeed of the magnitude indicated above, and if they are not associated with biases in the internal composition of the groups, they would lead to only minor errors in the estimates of income obtained from the surveys. The reweighting of the survey results for each group by its share in the total, according to the respective census estimates used as a yardstick, by no means alters the average incomes estimated for the whole of income-recipients by more than 4 per cent. The modification of average incomes of the whole group of employees in all the surveys considered is below 2 per cent, while the reweighting exercise alters the average income of all the self-employed by up to 7 per cent in some cases.

(e) Endogenous controls performed in some surveys

Thus far, consideration has been given only to controls of composition and representativeness of the samples on the basis of exogenous information. In surveys covering more than one interval of time, it is also possible to perform internal controls of representativeness of the sample, making use of its division by

/sub-samples and

sub-samples and intervals in order to detect any biases. The general hypothesis is that if the different groups into which the total sample is divided differ significantly in composition, they cannot all adequately represent the population, nor can they, therefore, in the aggregate, since the biases are unlikely to cancel each other out [48].

This method of control was used in most of the surveys which form part of the ECIEL programme. The control variables selected were size of household, employment situation of head of household, age of head of household and household income, and were used to test the significance of the differences between the distributions of various sub-samples over the same interval, and of the results of the same sub-sample over different intervals. This method, which was used in survey (3) in Colombia, led to some adjustments being made in the samples for the cities of Barranquilla, Cali and Medellín, but no significant biases were detected in the Bogotá sample. Some biased components in the Santiago sample, which served as a basis for survey (6) in Chile, were also adjusted. In surveys (3) in Ecuador and (7) in Peru differences were tested only among intervals, but no significant biases were noted [49]. These adjustments can correct the biases arising from differential mortality or attrition by stratum throughout the intervals covered by the survey, as well as the response biases associated with conditioning by repeated interviews, but not the possible biases in the composition of samples deriving either from defects in the sampling frame or in the selection or from initial non-response, discussed above.

8. Household income in national accounting

- (a) Household income in the System of National Accounts (SNA) and in the Complementary System of the Distribution of Income

The international recommendations regarding a System of Statistics of the Distribution of Income, Consumption and Accumulation [2] fulfil the objective of providing a conceptual framework for the quantification of incomes and their distribution, consistent with

/the accounts

the accounts of the SNA [17] but is more detailed and is designed to "portray each major step in the receipt and use of incomes by households.^{20/} The classification and definition of income flows making up the income and outlay account of the system constitute, in particular, an adequate frame to which the measurements of income obtained from household surveys may be referred.

To have a clear idea of how this frame is related with the more usual macroeconomic aggregates, however, it is necessary to keep in mind the linkage of stages in the generation, appropriation and redistribution of income, as recorded in the SNA. With this end in view, we have included in table 11 a simplified matrix presentation of the SNA, which maintains the detail of the flows recorded in the income and outlay accounts, but on the other hand presents the transactions in the other accounts of the system in aggregated form. The symbols used to indicate non zero entries and the categories related by those entries are intended to help to identify the concepts involved and, in particular, to follow the stages of distribution and redistribution of income.

The value added by each domestic productive activity, net of consumption of fixed capital, results in the generation of factor incomes in two primary forms: the various kinds of compensation of employee labour, and the operating surplus of the activity concerned. In order to provide a clearer picture of the appropriation of this primary income, both forms are reclassified according to the institutional sectors in which they originate, leaving aside the previous classification by activity. The next conceptual stage consists of the disaggregation of primary incomes according to the forms in which they are appropriated. The employee compensation originating in each institutional sector is broken down into its two component forms: wages and salaries, and employers' contributions to social security. The operating surplus originated in households and personal enterprises is appropriated partly as entrepreneurial

^{20/} [27], paragraph 34.

Table 11.
SIMPLIFIED SYMBOLIC REPRESENTATION OF THE SYSTEM OF NATIONAL ACCOUNTS, WITH THE INCOME AND OUTLAY ACCOUNTS IN DETAIL 5/

| | 1/4 | 5/4 | 13/21 | 22/28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56/60 | 61/68 | 69/73 | 80/84 | 82/84 | 85/88 | | | |
|--|-------|-------|-------|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-------|-------|-------|-------|-------|-------|--|--|--|
| Opening assets..... | 1/4 | 5/4 | 13/21 | 22/28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56/60 | 61/68 | 69/73 | 80/84 | 82/84 | 85/88 | | | |
| Product commodities | 5/2 | 13/21 | U, X | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monetized activities | 13/21 | H, X | | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Expenditure | 22/28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Value added | 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating surplus | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Consumption of fixed capital | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Indirect taxes, net | 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-financial enterprises, corp. and quasi-corp. | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Financial institutions | 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| General Government | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Households and unincorporated ent. | 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Private non-profit institutions | 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wages and salaries | 38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Employers' contributions | 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Entrepreneurial income | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating surplus | 41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Property income | 42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Direct taxes on income | 43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Social security contributions | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current transfers by enterprises | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Social security benefits | 46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Social assistance grants | 47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other current transfers by governments | 48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current transfers by households | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current transfers by the rest of the world | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-financial enterprises, corp. and quasi-corp. | 51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Financial institutions | 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| General Government | 53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Households and unincorporated ent. | 54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Private non-profit institutions | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Account - Increase in stocks | 56/60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| net - fixed capital formation | 61/68 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Net Capital Finance | 69/73 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rest of the world | 80/84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revaluations | 82/84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Closing assets | 85/88 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

5/ The numbers of the rows and columns are those of the illustration example of the complete System of National Accounts which appears in table 24 of 27.

Symbols used in the table

- A: Assets.
- B: Balance of the current account of the balance of payments of the rest of the world with the country.
- C: Consumption expenditures.
- D: Provisions for the consumption of fixed capital (depreciations).
- E: Exports at market prices.
- F: Net changes in financial credits (assets and liabilities), and transfers of net capital.
- G: Current transfer other than direct taxes on income.
- H: Direct taxes on income.
- I: Imports.
- L: Liabilities.
- M: Commodity outputs.
- R: Revaluations.
- S: Savings.
- T: Indirect taxes net of allowances.
- U: Use of commodities for domestic purposes.
- V: Capital formation at market prices.
- W: Compensation of employees.
- X: Commodity taxes.
- Y: Operating surplus.
- Z: Government and non-government enterprises.

| Date | Description | Debit | Credit |
|------|-------------|-------|--------|
| 1962 | ... | ... | ... |
| 1963 | ... | ... | ... |
| 1964 | ... | ... | ... |
| 1965 | ... | ... | ... |
| 1966 | ... | ... | ... |
| 1967 | ... | ... | ... |
| 1968 | ... | ... | ... |
| 1969 | ... | ... | ... |
| 1970 | ... | ... | ... |
| 1971 | ... | ... | ... |
| 1972 | ... | ... | ... |
| 1973 | ... | ... | ... |
| 1974 | ... | ... | ... |
| 1975 | ... | ... | ... |
| 1976 | ... | ... | ... |
| 1977 | ... | ... | ... |
| 1978 | ... | ... | ... |
| 1979 | ... | ... | ... |
| 1980 | ... | ... | ... |
| 1981 | ... | ... | ... |
| 1982 | ... | ... | ... |
| 1983 | ... | ... | ... |
| 1984 | ... | ... | ... |
| 1985 | ... | ... | ... |
| 1986 | ... | ... | ... |
| 1987 | ... | ... | ... |
| 1988 | ... | ... | ... |
| 1989 | ... | ... | ... |
| 1990 | ... | ... | ... |
| 1991 | ... | ... | ... |
| 1992 | ... | ... | ... |
| 1993 | ... | ... | ... |
| 1994 | ... | ... | ... |
| 1995 | ... | ... | ... |
| 1996 | ... | ... | ... |
| 1997 | ... | ... | ... |
| 1998 | ... | ... | ... |
| 1999 | ... | ... | ... |
| 2000 | ... | ... | ... |
| 2001 | ... | ... | ... |
| 2002 | ... | ... | ... |
| 2003 | ... | ... | ... |
| 2004 | ... | ... | ... |
| 2005 | ... | ... | ... |
| 2006 | ... | ... | ... |
| 2007 | ... | ... | ... |
| 2008 | ... | ... | ... |
| 2009 | ... | ... | ... |
| 2010 | ... | ... | ... |
| 2011 | ... | ... | ... |
| 2012 | ... | ... | ... |
| 2013 | ... | ... | ... |
| 2014 | ... | ... | ... |
| 2015 | ... | ... | ... |
| 2016 | ... | ... | ... |
| 2017 | ... | ... | ... |
| 2018 | ... | ... | ... |
| 2019 | ... | ... | ... |
| 2020 | ... | ... | ... |
| 2021 | ... | ... | ... |
| 2022 | ... | ... | ... |
| 2023 | ... | ... | ... |
| 2024 | ... | ... | ... |
| 2025 | ... | ... | ... |
| 2026 | ... | ... | ... |
| 2027 | ... | ... | ... |
| 2028 | ... | ... | ... |
| 2029 | ... | ... | ... |
| 2030 | ... | ... | ... |

/Table 11-A

Table 11-A
HOUSEHOLD INCOME AS A PROPORTION OF NATIONAL INCOME
AND GROSS DOMESTIC PRODUCT AT FACTOR COST

| Country | Year | Household income National income | Household income GDP (at factor cost) |
|------------|------|-------------------------------------|---|
| Argentina | 1970 | 1.02 | 0.94 |
| Colombia | 1967 | 0.96 | 0.86 |
| | 1970 | 0.96 | 0.85 |
| Costa Rica | 1966 | 0.96 | 0.87 |
| | 1967 | 0.96 | 0.87 |
| | 1971 | 0.95 | 0.87 |
| Chile | 1968 | 1.02 | 0.88 |
| Honduras | 1967 | 0.93 | 0.86 |
| Panama | 1970 | 0.90 | 0.79 |
| | 1972 | 0.88 | 0.77 |
| Peru | 1970 | 0.94 | 0.87 |
| Uruguay | 1967 | 1.06 | 1.00 |
| Venezuela | 1968 | 0.75 | 0.63 |
| | 1970 | 0.75 | 0.64 |

/income and

income and partly as property income. The remaining forms of income consist of transfers (requited or unrequited) between the institutional sectors, including payment of property income, for interest and other rents. At the same time, each of these forms of income - whether primary or transfer - constitutes a resource for one or more of the institutional sectors into which the economic system has been divided. The sub-matrix in which the forms of income are crossed with the institutional sectors of receipt records the incomes received by each sector, either for its participation in the production process or as a result of transfers.

For our own purposes, it is only of interest to show, within the conceptual framework provided by the SNA, the income received by households and unincorporated enterprises and the use or allocation of that income by households; these flows are recorded in row and column 54 in table 11. Thus briefly, it is possible to discern the differences and the successive conceptual stages between the income received by households and the more familiar macroeconomic concepts such as the gross domestic product, the net national product and national income, which can also be obtained from table 11.

The income and outlay account of households and unincorporated enterprises in the SNA shows these flows in somewhat greater detail ^{21/} and, in essence, constitutes the basis for making up the income and outlay account of the Complementary System of Distribution of Income, which is included in detailed form in table 12. This account, however, includes the subdivision and reclassification of some items of the former account, with the purpose of outlining the stages in the formation of household income and its allocation. The resulting subdivision into sub-accounts shows explicitly the concepts of primary income and distributed factor income - which are not used in the SNA - and of available income of households.

^{21/} See [1], annex 8.2, Account III E 3.

Table 12
INCOME AND OUTLAY ACCOUNT OF THE COMPLEMENTARY SYSTEM OF INCOME DISTRIBUTION

| Disbursements | Receipts |
|---|---|
| | 1. Compensation of employees |
| | 1. Wages and salaries |
| | ii. Employers' contributions to social security and similar schemes |
| | iii. Employers' contributions to private pension funds, family allowance, insurance and similar schemes ^{a/} |
| | 2. Income of members from producers' co-operatives |
| | 3. Entrepreneurial income |
| | 1. Net rents from owner-occupied dwellings |
| | ii. Net rents from other structures |
| | iii. Net proceeds from other unincorporated enterprises |
| 4. Primary income | iv. Withdrawals from quasi-corporate enterprises |
| | 5. Primary income |
| | 6. Property income received |
| 7. Property income paid | 1. Interest |
| 8. Factor income distributed | ii. Dividends |
| | iii. Land rents, royalties, etc. |
| 14. Casualty insurance premiums | 9. Distributed factor income |
| 15. Unrequited current transfers paid | 10. Casualty insurance benefits |
| 1. Direct taxes | 11. Unrequited current transfers received |
| ii. Social security contributions ^{b/} | 1. Social security benefits |
| iii. Current transfers to private non-profit institutions | ii. Social assistance grants |
| iv. Other current transfers | iii. Unfunded employee welfare benefits |
| 16. Net private pension funds contributions | 12. Private pension funds benefits |
| 17. Net premiums in respect of annuity policies of life insurance companies | 13. Benefits from annuity policies of life insurance companies |
| 18. Available income | |
| 22. Final consumption expenditure | 19. Available income |
| 23. Savings | 20. Net contributions less benefits, private pension funds |
| | 21. Net premiums less benefits, annuity policies of life insurance companies |

Source: [1] pp. 18-19.

^{a/} Excluding imputed employer's contribution to private unfunded pensions, family allowance and similar schemes.
^{b/} Where items 1, 4 and 5, and 8 and 9 of the account reflect only wages and salaries, item 15 (ii) excludes that part of social security contribution pay by employers on behalf of their employees.

/(b) Estimates

(b) Estimates of household income in the Latin American countries

Of all the Latin American countries so far, only Venezuela has reached the point of estimating the income and outlay and capital finance accounts of the new SNA, so that estimates of the income of households and unincorporated enterprises are available in that country, with a classification similar to that shown in table 12.

Most of the countries in the region, on the other hand, present simplified systems of accounts ⁵⁰ which, with certain limitations, follow the recommendations of the former SNA. As a result, in those countries there is an account for households and private non-profit institutions. In accordance with the former SNA ⁵¹, the income side of this account should show: the total compensation of employees, the income of all unincorporated enterprises, property income (excluding interest on consumers' debt) and current transfers from the general government. However, most of the countries fail to present household income at this level of aggregation. Annex B includes official estimates for the countries and the years considered in this study, at the level of detail at which they are presented. In no case are these estimates based on household survey results; they are usually obtained as a by-product in preparing the income and outlay accounts of enterprises and of the Government.

(c) Need for estimates at a lower level of aggregation

The comparison of the results of household surveys with macroeconomic statistics in order to verify their mutual consistency, and perhaps to detect possible biases in the surveys, should be made at a lower level of aggregation than that of the available official estimates of household income.

It is, of course, not enough to make this comparison for the aggregate income of all households. To verify consistency at that level of aggregation would not reveal very much about the possible origins of the differences, since the accumulation of factors affecting estimates of income in household surveys does not operate in the same combination and measure for all the sub-groups into which the population of recipient units can be divided for analytical purposes.

/Neither is

Neither is a comparison of aggregate income for the total number of households by form of income, even in the degree of detail shown in table 12, entirely sufficient for the purposes established. Each of the forms of primary income, in particular, is received by different recipient groups with considerably heterogeneous socio-economic characteristics. Therefore, the above reflection concerning aggregate household income is also applicable to the aggregate totals of each of these forms of income for the economy as a whole. On the other hand, the verification of the results of surveys vis-à-vis those of macroeconomic estimates provides more solid results in so far as it is undertaken for each of the main forms of income received by each of the major socio-economic groups of recipients.

(d) Estimates of primary income according to socio-economic groups of the earners, from the national accounts

National accounts estimates do not include a further classification of household income according to socio-economic groups. For nearly all the Latin American countries considered, however, it is possible to disaggregate the two forms of primary income received by the households (wages and salaries and entrepreneurial income) according to the sectors of activity in which they originate. This may be done with a tolerable degree of inaccuracy, by using the data available on the functional distribution of the incomes originated in each production sector and the appropriation of these incomes by the different institutional sectors.

This constitutes just an approximation of the distribution of household income according to socio-economic groups, with two important limitations. Firstly, only primary income is distributed, since the other forms of income received by the households cannot be disaggregated in this way. Secondly, this is a classification of household income according to the socio-economic group of the individual members of the household receiving the income, before they are pooled into the household; this is due to the fact that the data used for the disaggregation of primary income are obtained from the establishments,

/and the

and the observation unit of incomes originated in them is the job, which in practice is a concept similar to that of the individual income recipient. Even with these limitations, such a disaggregation of the primary income of households is useful for the purposes of verification proposed.

The majority of the countries considered have official estimates of factor income originated in each sector of economic activity, in the form of employee compensation, and operating surplus. In those countries where even this broad classification of primary income is lacking, there are means of arriving at it in an approximate form. The compensation of employees originated in each sector can first be disaggregated into wages and salaries, on the one hand and social security contributions on the other. The provisions for the consumption of fixed capital in each sector can then finally be estimated with a view to obtaining the sectoral operating net surplus. Annex C includes, for each of the countries and years considered, the official estimates available, plus those which had to be calculated to arrive at the primary income originated in each production sector disaggregated as indicated.

The gross wages and salaries originated in each sector correspond to the total employee jobs in the sector. If the entire aggregate is assigned to the whole group of recipients classified as employees in the sector, an error is committed equivalent in value to the proportion of the aggregate accounted for by secondary occupations held by employees mainly occupied in other sectors, or by recipients whose main source of income is not their job as employees.^{22/}

^{22/} In Argentina it was estimated ^[67] that in 1961 6.3 per cent of the wages and salaries were accounted for by secondary occupations of all types (including those held by employees mainly occupied in the same sector). This proportion may be considered to be a maximum, since in Argentina the situation of the labour markets normally allows larger proportions of secondary occupations than in most of the countries of the region. Two surveys which investigated all the sources of income of each income-recipient provided additional evidence on the proportion of wages received by self-employed and inactive persons; Argentina (survey 7.20): 3.1 per cent; Panama (survey 3): 0.5 per cent.

The net operating surplus originated in each sector, for its part, is subject to a more complex process of appropriation, as is obvious from table 11. It is destined in part for property income payments (interest, rents, etc.) which constitute costs for the enterprises paying them, and are received by persons - natural or legal - other than the owners of these enterprises. The rest of the operating surplus constitutes entrepreneurial income, which is appropriated in different forms depending on the institutional nature of the enterprise. In corporate enterprises ^{23/} the entrepreneurial income is earmarked for direct income tax, cash dividends and the different forms of capital formation which go to make up the savings of the enterprises. In personal enterprises, the entrepreneurial income in its entirety is regarded as being received by the persons owning the enterprise, who pay their direct taxes and other contributions, and possibly reinvest part of their savings in the enterprises, but in this case in their role as households.

The entire entrepreneurial income originated in each sector in personal enterprises corresponds to the total estimated

^{23/} In the SNA, and therefore in table 11, this treatment applies not only to corporate enterprises, but also to all enterprises which are companies or quasi-companies: in practice, this criterion makes it difficult to assign entrepreneurial income to individual income-recipients.

self-employed jobs in the sector, which are based on population censuses and household surveys where the individual or the household constitutes the observation unit. This is why, contrary to the recommendations of the new SNA, it has become necessary to calculate entrepreneurial income for all personal enterprises, whether or not they are companies.

These incomes can be determined residually from the estimates of the net operating surplus in Annex C, when it is also possible to determine the share of the corporations (national and foreign) and of the government in the surplus originated in each sector of production, as well as the amount of property income paid by personal enterprises in each sector. The estimates of national income components given by the national accounts of each country for the economy as a whole constitute a frame of reference for this purpose.

The results obtained, which appear in Annex D, are considered to be acceptable approximations - although with some reservations - of the distribution of entrepreneurial income of households, by groups of self-employed defined according to their sector identification. The error incurred by attributing the entrepreneurial income of persons originated in each sector to all the income-recipients classified as self-employed persons in the sector, depends on the proportion of this income which comes from secondary occupations.^{24/}

^{24/} The proportion of entrepreneurial income received by recipients whose main source of income is their job as employees is 9.6 per cent in survey (7.20) in Argentina, and 7 per cent in survey (3) in Panama.

9. The concepts of income used in the surveys and population censuses

(a) The concepts of income investigated by the surveys and the way they fit into the framework of social accounting

The relation of the different concepts of income used in the different surveys to the common framework constituted by the Complementary System raises some additional problems. On the one hand, survey questions on income have to refer more specifically to the forms in which remunerations are received, whereas on the other hand there is a great diversity, in the household surveys considered, as regards the degree of itemization in which the receipts are investigated and the concepts which are finally recorded. For this reason a more detailed classification of sources and types of income has been prepared (Annex G), using as a starting-point that utilized in the Complementary System and included in table 12, but also taking into consideration the forms and levels of the receipts which the household surveys usually record, and the current national practices for estimating each flow.

Table 13 situates the concepts of income investigated by each of the household surveys with respect to the classification adopted. As a complementary piece of information, table 14 indicates the recall periods used in each for recording each type of income.

The methods for collecting the data on income establish an initial differentiation in the concepts of income used. Thus family budget or income surveys use a fairly detailed itemization of the different types of income and the forms in which they are received, and normally involve recall periods of more than one month.^{25/} It is widely assumed that both techniques contribute to reducing the under-estimation of total income and its main components, and insofar as equivalent qualities and rates of response are obtained for different items, it also becomes possible to alternatively measure different concepts of income.

^{25/} None of the surveys of this type analysed, however, ensures a detailed employment history covering the recall period.

/Employment surveys,

Employment surveys, in contrast, obtain data on income in a supplementary form. The few questions devoted to this subject are aimed at measuring the main components of income on the basis of weekly or monthly recall periods and according to specific forms of receipt (gross or net, total or only usual earnings, cash and kind or only cash, etc.), without any detailed itemization of each. This technique is usually applied, moreover, following the criterion of asking about incomes received from each source in such a way and on such an extent as to minimize response errors.

All the 14 employment surveys included in table 13 record only the usual earnings of the employees; eight of these surveys also register these earnings net of discounts and deductions. Only four employment surveys include an estimate of earnings in kind received by employees (three surveys include them implicitly, jointly with cash earnings); the rest only identify whether or not this type of earnings have been received, without recording any assessment of their value. None of these surveys distinguish between different types of entrepreneurial income. Lastly, only four register property incomes and transfers.

Although they basically use the same method to obtain the data, family budget surveys show some differences of criteria as regards the concepts each records. Thus, five of the surveys of this type considered in table 13 record the earnings of employees in net form, while the surveys of the ECIEL programme record them gross and state the deductions separately. Only four of the surveys record separately the net farm income by means of an approximate reconstruction of the production account of the farm; the remaining surveys (including all the surveys of the ECIEL programme) draw no distinction between income from the operation of a farm and that obtained from non-farm business.

There are also differences in the treatment of the income in kind accrued to own-employed persons: eleven surveys require an

/Table 13

DETAIL WITH WHICH THE INCOME CONCEPTS WERE RECORDED IN THE HOUSEHOLD SURVEYS CONSIDERED

| Source and type of income | Argentina | | Brazil | | Colombia | | Costa Rica | | Chile | | Ecuador | | Guatemala | | Honduras | | Nicaragua | | Peru | | Uruguay | | Venezuela | | | | | |
|---|-----------|------|--------|------|----------|------|------------|-----|-------|-----|---------|---|-----------|-----|----------|-----|-----------|---|------|---|---------|-----|-----------|-----|-----|------|------|-----|
| | 6 | 7-20 | 10-1 | 4-12 | 5-21 | 5-22 | 3 | 4-1 | 4-2 | 2-1 | 2-7 | 4 | 5-5 | 5-6 | 2-1 | 2-4 | 3 | 1 | 1 | 8 | 7 | 4-1 | 3-1 | 3-1 | 3-4 | 5-12 | 5-13 | 6-4 |
| 1. Compensation of employees | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 11. Gross direct earnings, in cash period, in cash | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 112. Gross seasonal receipts | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 113. Extraordinary receipts | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 22. Current discounts and deductions | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 13. Net direct earnings, in cash | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 131. Net customary receipts (in the reference period), in cash | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 132. Net seasonal receipts | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 133. Extraordinary receipts | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 14. Earnings in kind | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 141/147 (in detail) | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 15. Employers' contribution | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 2. Incomes of members from the production co-operatives | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 3. Entrepreneurial income | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 31. Income (net of outlay) accrued from own business or industry | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 312. Income (net of outlay) obtained as farmer from own or rented farm | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 313/4. Professional fees and similar, commissions and income from private classes net of outlay | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 32. Receipts in kind | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 321. Value of goods and services withdrawn from own business | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 322. Value of domestic production for self-consumption (in detail) | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 4. Property income | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 41. Imputed rents | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 42. Interest | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 43. Dividends | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 44. Rents received from tenants | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 45. Rents of land | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 46. Others | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 5. Current transfers received | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 51. Pensions and social security retirement benefits | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 52. Others | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 521. Scholarships and similar | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 522. Social assistance grants, public assistance, etc. | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 523. Unemployment insurance, benefits, etc. | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 524. Indemnities for dismissal | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 6. Insurance benefits | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 7. Current transfers paid | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 8. Inter-personal transfers and other current receipts, n.e.c. | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 9. Extraordinary capital transfers | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 10. Receipts from unidentified sources and n.e.c. | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

a/ The detailed composition of each item figures in Annex 6.
 b/ Questions were asked about the reception or not of earnings in kind, but these were not valued.
 c/ Recorded together with cash remunerations.
 d/ Recorded together with income from business or industry (31).
 e/ Explicitly excluded.

/explicit estimate

explicit estimate of the value of domestic production for own-consumption,^{26/} but only seven of these also ask for the value of the goods or services taken from the own business.

Ten of the surveys analysed request an assessment of the imputed net rent from own-occupied dwellings, while a further four give instructions for the inclusion of such assessment as part of the total for property income.

Family budget or income surveys are in addition able to register other items which are also relevant in the measurement and analysis of income distribution but which can only be detected by means of a detailed itemization procedure. Nearly all the surveys in this class included in table 13 record current transfers payments and the receipt of interperson transfers; only six surveys, however, register insurance benefits as a separate item. Lastly, all these surveys pick up a series of occasional capital receipts through the detailed enumeration of the different types of receipts which may enter a household.

(b) Income questions in population censuses

As already mentioned, some population censuses investigated the income of the population. In all cases this is achieved by means of a supplementary question in the census questionnaire.

The 1970 population census in Brazil contains a question on the average monthly income for all persons of 10 years of age and over. Preference is made to total income from all sources, and the census indicates what types of income should be cumulated in reply to this one question: the current fixed earnings of employees; the average receipts for the last twelve months under the forms of fees, commissions, payments for services rendered, etc.; gross trading margins; the monthly average of all earnings in kind (wages or withdrawals from the business); estimated amounts for the use of goods (including imputed rents); and, lastly, amounts of benefits from annuity policies.

^{26/} It should, however, be observed that a further seven surveys, among those which do not investigate this item, only cover urban areas where own-consumption is not of very great importance.

/The population

The population census of Mexico carried out in 1970 uses a single question for total gross customary receipts in cash (before taxes and social security and pension fund contributions) received in one week, one month or in the whole of 1969 (optional reference period). The instructions indicate that receipts of wages and salaries, tips and commissions, interest or dividends, scholarships and withdrawals from the own business, net of outlays, should be included.

The 1971 Costa Rica census questions persons classified as employees on the gross amount of wages and salaries accrued during the last period of payment, before any deduction.

(c) Possible effect of response biases on the concepts of income actually measured

The concepts of income actually registered may differ in practice from those which it has been endeavoured to identify in each survey, using the definitions given above.

The interview for a survey is a situation in which a number of factors interact, and this may give rise to response errors. Some of these errors are of a type which tend to be compensated in repeated observations and are thus attributed to the response variance of that specific interview. Other errors, however, are systematic and give rise to response biases, which may be associated with the specific conditions of the survey.

Within this set of conditions, the question technique in particular may give rise to response biases which affect not only the value but also the concept of the income being reported. The effort of response biases on the value of the income recorded is one of the main problems which it is sought to limit by comparing the results of the surveys and censuses with macroeconomic estimates. However, in order to make such a comparison, it is first necessary to consider the possible effects of the response biases on the concepts of income measured by the surveys.

/It is

It is perhaps debatable whether or not greater detail results in a lesser degree of under-reporting of total income.^{27/} It does, however, appear probable that the detailed itemization of incomes contributes to obtaining measurements of greater precision as regards the concepts of income being registered, and thus a greater conceptual homogeneity of such measurements over the population surveyed.^{28/}

As far as it is possible to generalize the results of the experiments made now and then in this particular aspect of survey techniques,^{29/} the responses to a broad question on income tend to cover only the customary withdrawals or receipts, net of deductions. The short recall periods function in the same way. The detailed itemization of all receipts, applied in optimum conditions, would make it possible to overcome this tendency by registering net customary receipts in the corresponding items and inquiring separately after deductions, occasional and non-customary receipts, imputed incomes accrued, and receipts in kind. The longer recall periods would also presumably contribute to recording non-habitual receipts, although they may affect the accuracy of the measurements in other senses.

^{27/} For this, see Borus ^[52].

^{28/} This currently accepted hypothesis has not, however, been rigorously tested for any of the surveys made in Latin America. INDEC in Argentina recently carried out a pilot experiment with alternative questionnaires for its Continuing Household Survey, but the known results of this experiment are not conclusive in this respect.

^{29/} In the United States, where perhaps non-sampling errors have been studied more intensively, the essence of the analyses made on this specific subject in the last two decades may be found in ^[53], in the volume devoted by the NBER to the evaluation of the income results of the 1950 census ^[54], in the studies of Lansing, Ferber and others on response biases in surveys of financial characteristics ^[55, 56, 57], some studies by the United States Bureau of the Census ^[58, 59, 60], and the work of Borus which has already been mentioned ^[52].

/It is

It is reasonable to suppose that when wage-earners answer a single broad question on their earnings for the previous week or month (table 14), they tend to include only the take-home pay. It is because of this possibility that most of the employment surveys refer precisely to these receipts in their questions; surveys with questions on total gross earnings probably only succeed in measuring, in the majority of cases, customary net earnings, with the aggravating feature of greater conceptual heterogeneity in the aggregate of responses. The income and family budget surveys, however, use the detailed itemization of earnings and longer recall periods (table 14); this helps to reduce the errors of interpretation and recall which generally beset the registration of non-habitual earnings.^{30/} It is not, however, so likely that the itemization will significantly reduce the response biases which tend to cause earnings to be recorded in net form, since a large proportion of the respondents may not recall or may even not know the amount of their gross earnings.^{31/} Even so, this fact is not wholly recognized by some of the surveys of this type (typically those of the ECIEL programme), which have detailed questions on gross earnings.

Something similar probably occurs with the registration of wages in kind, although the effect of the biases on measuring them may be more intensive. When these earnings are included in the scope of a single broad question on income, jointly with earnings in cash (see table 15) the overall response may underestimate the component in kind or even omit it despite the survey instructions. The investigation of wages in kind using a separate item contributes to ensuring that they are included, although the measurement may not be free from an underestimating bias.

^{30/} In countries with inflation the longer recall periods may, however, bring additional biases into the results.

^{31/} This possibility becomes more probable when one member of the household is chosen to reply to the survey, and even more so when the choice falls on the housewife.

Table 14

RECALL PERIOD USED FOR INCOMES IN EACH SURVEY, BY TYPE OF INCOME

| Country | Survey | Compensation of employees | Entrepreneurial income | Property income | Transfer | Other income |
|--------------------|--------|---------------------------|------------------------|-----------------|----------|--------------|
| Argentina | 6 | T | T | T | T | T |
| Argentina | 7.20 | M | M | M | M | M |
| Argentina | 10.1 | M | A | A | M | M |
| Brazil | 4.12 | S | M | - | - | - |
| Brazil | 5.2.1 | S | M | - | - | - |
| Brazil | 5.2.2 | M | M a / / A b / | A | M | M |
| Colombia | 3 | M/T | M | M | M | M/T |
| Colombia | 4.1 | M | M | M | M | M |
| Colombia | 4.2 | A | A | A | A | A |
| Costa Rica | 2.1 | S | M | - | - | - |
| Costa Rica | 2.7 | S | M | - | - | - |
| Costa Rica | 4 | M | M | M | M | M |
| Chile | 5.5 | S g / / M d / | M | - | - | - |
| Chile | 5.6 | B | B | B | B | B |
| Chile | 5.13 | B | B | B | B | B |
| Chile | 6 | T | T | T | T | T |
| Ecuador | 2.1 | M | M | - | - | - |
| Guatemala | 3 | A | A | A | A | A |
| Honduras | 1 | A | A | A | A | A |
| Mexico | 6 | A | A | A | A | A |
| Panama | 2.8 | S | - | - | - | - |
| Panama | 2.10 | S | - | - | - | - |
| Panama | 3 | M | M | A | A | A |
| Peru | 4.1 | M | M | M | M | M |
| Peru | 7 | M | M | A | A | A |
| Peru | 8 | A | A | A | A | A |
| Dominican Republic | 1 | M | M | M | M | M |
| Uruguay | 2.1 | T | T | T | T | T |
| Uruguay | 3.1 | S | M | - | - | - |
| Venezuela | 3.4 | M | M | M | M | M |
| Venezuela | 3.5 | M | M | M | M | M |
| Venezuela | 5.12 | S | M | - | - | - |
| Venezuela | 5.13 | S | M | - | - | - |
| Venezuela | 6.4 | S | M | - | - | - |
| Venezuela | 6.5 | S | M | - | - | - |
| Venezuela | 1.0 | M | A g / | M | M | M |

Notes: A : year; T : quarter; B : two-month period; M : month; S : week.

a/ For non-agricultural self-employed.

b/ For agricultural self-employed.

g/ For wage earners.

d/ For salary earners.

e/ Including annual bonus.

/As regards

As regards the measurement of entrepreneurial income, nearly all the surveys - even income and family budget surveys - ask for very little detail on this type of income, using a single question or only a few questions on income from the business or profession net of outlays but before taxes. It may be assumed that this type of broad-based question obtains extremely heterogeneous answers, but with a marked tendency to register the cash withdrawals from the own business or independent activity. When for reasons of cost it is decided not to apply the alternative technique of reconstructing in approximate form the production account of the activity, the conceptual content of these withdrawals is necessarily ambiguous.^{32/} Generally speaking, the respondent is not in a position to determine the receipts corresponding to net entrepreneurial income; it is difficult for him to assess the deductions which he should impute as depreciation of fixed capital, and it is not easy either for him to estimate to what extent these withdrawals differ from the net entrepreneurial income accrued during the current period and therefore imply subtractions from or additions to the net worth of the business. Nor do the short recall periods help account to be taken of the transactions or imputations which the entrepreneur usually only consider when he makes up the annual balance, generally at the moment of making his income tax declaration.

The biases associated with the technique of inquiring into entrepreneurial income by means of a single broad-based question probably acquire even greater importance in the case of net farm income. In order to obtain conceptually homogenous measurements of this income, it is almost indispensable to draw up an approximation of the production account of the farm. Otherwise, the conceptual heterogeneity of the responses grows larger and a substantial under-estimate of the value of domestic output for own-consumption or investment is almost inevitable, even in the surveys which have explicit questions on these items.

^{32/} Among the surveys considered, only Mexico (6) and Peru (8) apply this technique for estimating the net income of farmers.

/The measurements

The measurements made by the surveys of the rent from owner-occupied dwellings probably present the same type of problem as in the case of wages in kind. When these rents are investigated as a separate item (table 13), they are subject to the response errors common to any assessment which the respondent makes. When, however, they are registered together with total property income, they are most probably underestimated or completely omitted.

The same type of observation may be made in connexion with current transfers received and property income, when each of these is investigated as a whole. The effect of the response biases has very different features in each case, though. Most transfers are customary, are not subject to deductions of any importance, and are not usually accumulated for a single income-recipient; questions on their overall amount can therefore only lead to the omission of minor items. The non-customary and supplementary nature of much property income, however, increases the probability that it will be omitted or very much underestimated in responses to blanket questions or questions with short recall periods.

10. Errors in the estimation of aggregate and mean income on the basis of grouped data from surveys and censuses

A great many of the surveys considered give the results of income in the form of frequency distributions grouped in intervals of size of income, but they do not give the corresponding distribution of the aggregate income according to the same intervals, nor do they indicate the average income corresponding to the population classified in each interval.^{33/}

^{33/} Annex F indicates which of the surveys considered give their results in this form.

/This practice

This practice constitutes an obstacle to the analysis of income concentration and, generally speaking, to any analysis requiring the use of mean or aggregate income. In order to compare the income resulting from the surveys and censuses with that of independent macroeconomic estimates, it becomes necessary to apply some calculating procedure which actually involves interpolation in each class interval on the basis of some assumption as to how the ungrouped frequencies are distributed, or as to the form of the frequency density functions, which amounts to the same thing. Whatever the procedure adopted, its use brings with it a certain margin of error in the estimation of income.

Another document ^{34/} explains in detail the procedure selected for calculating the aggregate and mean income of each of the segments into which the sample populations are divided for purposes of comparison. This procedure was applied uniformly in all the surveys requiring this additional step, and briefly consists of the following:

- (i) the mean income of the bottom interval of the distribution was estimated on the basis of a polynomial of the third degree adjusted to this interval;
- (ii) the mean income of the top open-end interval was estimated using a Pareto function adjusted to the data observed in this interval and the previous one;
- (iii) for the remaining intervals of the distribution it was assumed that the units within each class interval have approximately the same income and that this coincides with the interval mid-point.

^{34/} Oscar Altimir, Dos procedimientos de interpolación de distribuciones de frecuencias agrupadas de acuerdo con el ingreso (draft for discussion) June 1975.

The tests made with this procedure for some surveys which also gave the distribution of aggregate income according to intervals of size of income made it possible to form an idea of the probable direction and magnitude of the estimation errors brought about by its application. The assumption of linearity within each interval - implicit in the adoption of interval mid-points - usually gives an underestimate of the incomes of the groups situated below the mode of the distribution and an overestimate of the incomes of the groups situated above this point. At all events, however, there is not usually more than 3 per cent differences between the interval mid-points and the actual class interval means. The only important exception appears systematically in the bottom interval of the distributions: whatever the proportion of observations classified in this interval, in all the surveys analysed the linear assumption underestimates the average income of the group by between 20 and 40 per cent of the mean income actually observed. This is why a different interpolation assumption was applied to this interval. The use of polynomials of the third degree reduces the error in the estimate of the class interval mean income to only 5 to 8 per cent below the true value.

The tests made finally showed that the mean income estimated for the top open-end intervals of the distribution adjusting Pareto functions, tends to be 7 to 12 per cent above the mean income actually observed in these intervals.

The joint effect of the errors indicated in the estimation of the class interval means gave place, in the cases analysed, to mean and aggregate incomes for the distribution as a whole which were between 1 and 5 per cent above the values actually measured in the surveys. Consequently, it should be assumed that the mean incomes appearing in annex E as estimates taken from surveys which only give grouped frequency distributions are probably biased upwards by amounts of the order of those mentioned.

/11. Household

11. Household incomes estimated on the basis of surveys and censuses, vis-a-vis national accounts estimates

(a) Household incomes estimates on the basis of surveys and censuses

The results of household surveys and population censuses make it possible to estimate the aggregate monthly amount of each of the sources or forms of income investigated, for all household or individual recipients that reported income in the population covered by the survey or census. These estimates are shown in annex F; in some employment surveys the estimates are confined to primary income; in a few other cases indicated in the annex, only the total income received by employees or self-employed persons was obtained.

In many of the surveys and population censuses considered the aggregate income was obtained on the basis of frequency distributions grouped by income size interval. These estimates have the approximation margins which were indicated above in connexion with this procedure for obtaining aggregate income.

(b) Comparability of the estimates

Mention is usually made of the need to make adjustments to the national income in order to obtain the total income received by households. Strictly speaking, this simply means arriving at the income side of the household income and outlay account envisaged in the SNA, a process which has been referred to extensively and the results of which appear in annexes B, C, and D. Even so, the results of the household surveys and population censuses are not easily comparable with the national accounts estimates. Some adjustments were made with respect to the reference period for the sake of greater comparability, but there are still some gaps which deserve consideration.

(i) Estimate of annual aggregates and correction of nominal values

Only in exceptional cases do the income results of surveys relate to a calendar year as do the national accounts estimates. In most cases the results have had to be corrected in order to obtain annual aggregates referred to the whole calendar year for which the comparison is made (annex F). For surveys recording only the customary incomes of employees, annual income includes an estimate of the amounts representing the most frequent annual periodicity receipts in each country.

/In inflationary

In inflationary economies such as those found in Latin America the intra-annual price and income variations tend to be quite significant. With the purpose of diminishing the effect of these variations on the comparison with the annual national accounts estimates, incomes obtained from surveys and censuses were corrected by the ratio between the prices (and in the case of wages by the ratio between the average wages paid) in the reference period for those incomes and the average for the calendar year for which the comparison was made (see annex F).

(ii) Conjunctural factors

Income over a period of less than a year can differ from the final result of income generation over the whole year, owing to the effect of conjunctural intra-annual variations. The above correction takes into account only one aspect of these variations. There are still other aspects related to the employment situation; the proportion of employed persons, working conditions and, therefore, incomes registered by a survey in a particular situation can differ from the average situation prevailing for the whole labour force in the whole calendar year.

Some surveys covered a whole year (calendar or otherwise), distributing the total sample in sub-samples or intervals for different intra-annual periods. The annual records prepared by means of the aggregation of sub-samples represent an average of the conjunctural variations in employment and income. In this respect, a survey of this kind presents fewer problems of comparability with the national accounts. The same might be said, in theory, of the surveys and population censuses which were carried out at a particular time of the year, but which use an annual recall period for recording income. Unless a detailed employment history covering the whole of the recall period is used simultaneously, however, the resulting measurements of income may tend to reflect the most recent situation.

In surveys in which the whole sample was investigated over a period of less than one year, the estimated income and its distribution may be affected by seasonal factors or by no means negligible proportions, as will be seen later in this study. It is to be hoped, however, that the maximum differences will take place between the peak and the trough

/of the

of the cycle, and that the differences between the employment and income situation in a given period of the year and the resulting average situation for the whole year will be less pronounced.

(iii) Sub-national coverage of some surveys

Surveys with sub-national coverage present an additional problem, since they cannot be directly compared with the estimates for the national economy as a whole and there are no independent macroeconomic estimates of household income by region.^{35/}

Two expedients are used here in order to overcome this difficulty in part. First, the ratios between the mean incomes for sub-national areas and the national averages obtained from nation-wide surveys are used as a reference (see table 17). Secondly, estimated primary income from urban activities obtained from the surveys is compared with primary income from non-agricultural activities obtained from the national accounts.

In the surveys with national coverage which do not investigate agricultural income, it is also necessary to limit the comparison to primary income originated in non-agricultural activities.

(iv) Problems of comparability associated with the concepts of income

The rest of the problems of comparability between the results of surveys and censuses and macroeconomic estimates are associated with the concepts of income recorded in each survey. One such problem is the recording of income net of deductions, which affects the comparability of the results of certain surveys with national accounts aggregates estimated before any deductions are made. The magnitude of this problem may be appreciated from table 16, which includes the estimated percentage share of fiscal transfers payments (personal contributions to the social security system and direct taxes) in each country in household incomes from each major source. It will be observed

^{35/} The only exception would be the estimates made in ^{36/} for the Montevideo area, with the purpose of comparing the results of the survey (2.1) in Uruguay.

/that the

that the deductions may push up the estimated wages and salaries in surveys which record them net of deductions by between 3 and 7 per cent; on the other hand, they would affect the comparison of entrepreneurial income by proportions varying between 1 and 5 per cent, and that of property income by only slightly bigger margins.

Moreover, the entrepreneurial income obtained from surveys and censuses are by no means completely comparable with the national accounts estimates; as indicated earlier, they usually represent the amounts withdrawn from the own business. If entrepreneurial income in the national accounts is considered net of depreciation, however,^{36/} this considerably narrows the gap between the two types of measurement, since depreciation normally covers a large proportion of the surplus not withdrawn from personal enterprises, and may be even higher than this surplus in extreme cases of withdrawals exceeding current income.

(c) Criteria for the comparison and quantitative assessment of the discrepancies

In order to facilitate the comparison of household incomes estimated on the basis of surveys and censuses with those obtained from the national accounts, the both sets were expressed (annex H) in terms of income per household, relating the aggregate annual amount of each form of income to the total number of households covered by each source. This permits a fairer interpretation of the comparison when the surveys or censuses do not have the same coverage as the national accounts aggregates.

Non-response to income questions, in particular, is a determining factor in the comparison of the results of surveys with national accounts estimates. Even the most sophisticated replacement criteria, in the last instance, assume some relation between the cases not covered for lack of response and the cases actually observed. In order to avoid any effects which such assumptions might have on the comparison, care is taken to include only the results of surveys or censuses covering

^{36/} Which normally ranges from 10 to 20 per cent of the net operating surplus, depending on the country and the sector of activity.

/units which

units which responded to income questions. Therefore, in interpreting the comparisons it should be taken into account that some of the unexplained differences may be due to differential non-response from particular income groups.

Table 15 includes the ratio between income per household estimated on the basis of surveys and censuses and that obtained from the national accounts, both for total household income and for each of the main forms of income in all cases where the comparison was feasible. The results of the population censuses and nation-wide surveys are compared directly with the corresponding national accounts totals for all economic activities or for non-agricultural activities, as appropriate. The results of surveys with less than national coverage are likewise compared with the corresponding national totals of macroeconomic estimates; but for the sake of greater comparability they are also compared with the national accounts totals for non-agricultural activities, since the income obtained from these surveys is almost exclusively originated in urban activities.

The ratios in table 15 serve as a basis for assessing in each case the discrepancies in measurement between the results of the two sources. For a more realistic assessment of these discrepancies it would, however, be necessary to take into account the conceptual content of each measurement (as shown in table 13) and, therefore, the probable magnitude of:

- (i) the appropriate deductions, the macroeconomic context of which is provided by the estimates in table 16;
- (ii) the income received in kind the value of which has not been ascertained in the survey;
- (iii) the earnings obtained from secondary occupations, which are included in the national accounts aggregates but are not covered in surveys investigating only income from the main occupation.

This evaluation is more uncertain in the case of surveys with sub-national coverage, since it is also necessary to consider the ratio between average income in the area covered and the national averages.

/Table 15

Table 15.
RELATIONS BETWEEN INCOMES PER HOUSEHOLD, OF EACH TYPE, ESTIMATED FROM SURVEYS
AND DEMOGRAPHIC CENSUSES^{a/} AND THOSE ESTIMATED FROM NATIONAL ACCOUNTS (NA)

(a) Demographic censuses and household surveys of national coverage

(Income per household NA = 1.00)

| Country | Survey | Type of survey b/ | Income coverage c/ | Year | Current income of households | | | | |
|------------|--------|----------------------|-----------------------|------|------------------------------|--------------------|------------------------|-----------------|----------------------------|
| | | | | | Total d/ | Wages and salaries | Entrepreneurial income | Property income | Transfers and other income |
| Brazil | 4.12 | E | NA | 1970 | ... | 0.95 | 0.60 | ... | ... |
| | Census | | T | 1970 | ... | 0.72 ^{e/} | 0.58 ^{f/} | ... | ... |
| | 5.21 | E | NA | 1972 | ... | 0.97 | 0.60 | ... | ... |
| | 5.22 | Y | T | 1972 | ... | 0.92 | 0.74 | ... | ... |
| Colombia | 4.1 | E | T | 1970 | ... | 1.07 ^{e/} | 0.66 ^{f/} | ... | ... |
| Costa Rica | 2.1 | E | NA | 1967 | ... | 0.87 | 0.80 | ... | ... |
| | 4 | FF | T | 1971 | 0.82 | ... | ... | ... | ... |
| Chile | 5.6 | Y | T | 1968 | 0.63 | 0.79 | 0.45 | 0.98 | 0.43 |
| | 5.5 | E | NA | 1968 | ... | 0.72 | 0.42 | ... | ... |
| Honduras | 1 | FF | T | 1967 | 0.61 | ... | ... | ... | ... |
| Mexico | 6 | FF | T | 1967 | ... | 1.06 | 0.48 | ... | ... |
| | Census | | T | 1969 | ... | 0.94 ^{e/} | 0.48 ^{f/} | ... | ... |
| Panama | 3 | Y | T | 1970 | 0.97 | 0.99 | 0.53 | 1.45 | 1.01 |
| Venezuela | 5.12 | E | NA | 1971 | ... | 0.97 | 1.13 | ... | ... |

Source: Annex H.

^{a/} Adjusted by price changes, to the average of the year for which the comparison was made.

^{b/} Symbols: E : Labor survey

Y : Income survey

FF : Family budget survey.

^{c/} Symbols: T : All the activities

NA : Non-agricultural activities.

^{d/} The estimates of the surveys and censuses exclude inter-personal transfers where it has been possible to discriminate them.

^{e/} In principle, the estimates of the survey or census correspond to total household income received by employees.

^{f/} In principle, the estimates of the survey or census correspond to the total household income received by self-employed.

/Table 15 (conc.)

Table 15
RELATIONS BETWEEN INCOMES PER HOUSEHOLD, OF EACH TYPE, ESTIMATED FROM SURVEYS^{a/} AND THOSE ESTIMATED FROM NATIONAL ACCOUNTS (NA)

(b) Household surveys of sub-national coverage

(Income per household NA = 1.00)

| Country | Survey | Type of survey ^{d/} | Coverage ^{b/} | | Year | Totals ^{d/} | Current income of households | | | |
|------------|--------|------------------------------|------------------------|--------------|------|----------------------|------------------------------|------------------------|-----------------|----------------------------|
| | | | Survey | Estimates NA | | | Wages and salaries | Entrepreneurial income | Property income | Transfers and other income |
| Argentina | 6 | PF | MA | N-T | 1970 | 1.05 | 9.89 | 0.80 | 1.95 | 1.42 |
| | 7.20 | Y | MA | N-T | 1970 | 0.76 | 0.98 | 0.68 | 0.13 | 1.17 |
| | 7.20 | Y | MA | N-NA | 1970 | ... | 0.92 | 0.72 | ... | ... |
| Colombia | 3 | PF | 4 MC | N-T | 1967 | 1.66 | 1.60 | 1.20 | 2.44 | 8.42 ^{e/} |
| | 3 | PF | 4 MC | N-NA | 1967 | ... | 1.18 | 1.18 | ... | ... |
| | 4.2 | PF | 7 MC | N-T | 1970 | 1.67 | ... | ... | ... | ... |
| Costa Rica | 2.7 | E | U | N-NA | 1971 | ... | 0.94 | 0.76 | ... | ... |
| Chile | 6 | PF | MA | N-T | 1968 | 0.94 | ... | ... | ... | ... |
| Peru | 7 | PF | MA | N-T | 1968 | 1.84 | 2.12 | 1.94 | 3.30 | 1.32 ^{e/} |
| | 7 | PF | MA | N-NA | 1968 | ... | 1.28 | 1.01 | ... | ... |
| | 4.1 | E | U | N-T | 1970 | ... | 1.28 | 0.64 | ... | ... |
| | 4.1 | E | U | N-NA | 1970 | ... | 0.78 | 0.54 | ... | ... |
| Uruguay | 2 | PF | MA | AM-NA | 1967 | 0.88 | 1.02 | 0.63 | 0.65 | 0.97 |
| | 3.1 | E | MA | AM-NA | 1968 | ... | 0.76 | 0.29 | ... | ... |
| Venezuela | 3.4 | PF | MA | N-T | 1966 | 1.52 | 1.43 | 1.14 | 5.90 | 1.70 |
| | 3.4 | PF | MA | N-NA | 1966 | ... | 1.06 | 0.98 | ... | ... |
| | 6.4 | E | MA | N-T | 1970 | ... | 2.04 | 1.78 | ... | ... |
| | 6.4 | E | MA | N-NA | 1970 | ... | 1.50 | 1.47 | ... | ... |
| | 10 | Y | U | N-T | 1970 | 0.94 | ... | ... | ... | ... |
| | 10 | Y | MA | N-T | 1970 | 1.37 | ... | ... | ... | ... |

Source: Annex H.

^{a/} Adjusted by price changes, to the average of the year for which the comparison was made.

^{b/} Symbols: N : National (n) MC : (number of) main cities, including MA

U : Urban area

T : All activities

MA : Metropolitan area of capital city

NA : Non-agricultural activities.

^{c/} Symbols: E : Labor survey

Y : Income survey

PF : Household budget survey.

^{d/} The estimates of the surveys exclude inter-person transfers where it has been possible to discriminate.

^{e/} The estimates of the survey include inter-person transfers and income from property.

/Table 16

Table 16
ESTIMATED FISCAL DEDUCTIONS FROM CURRENT HOUSEHOLD INCOME, BY TYPE OF INCOME
(Percentages over total estimated for each type of income)

| Country | Year ^{a/} | Deduction from total current household income | Deductions from wages and salaries | | Direct taxes attributable to: | |
|------------------------------|--------------------|---|---|--------------|-------------------------------|-----------------|
| | | | Personal contributions to social security | Direct taxes | Entrepreneurial income | Property income |
| <u>Argentina</u> | 1970 | 2.5 | 5.7 | 1.1 | 4.1 | 3.3 |
| <u>Brazil</u> | 1970 | ... | 5.0 | 2.5 | 4.0 | ... |
| | 1972 | ... | 5.0 | 2.5 | 4.0 | ... |
| <u>Colombia</u> | 1967 | 2.5 | 1.6 | 1.2 | 3.9 | 2.8 |
| | 1970 | 3.0 | 2.0 | 1.8 | 4.9 | 3.6 |
| <u>Costa Rica</u> | 1966 | 0.7 | 2.2 | 0.5 | 0.8 | 1.5 |
| | 1967 | 0.9 | 2.4 | 0.6 | 0.9 | 1.8 |
| | 1971 | 1.1 | 3.0 | 0.7 | 1.2 | 2.2 |
| <u>Chile</u> | 1968 | 4.4 | 6.8 | 3.7 | 5.0 | 8.8 |
| <u>Honduras</u> | 1967 | 1.7 | 0.3 | 0.9 | 2.5 | 2.2 |
| <u>Mexico</u> | 1967 | ... | 2.2 | 2.0 | 3.0 | ... |
| | 1969 | ... | 2.2 | 2.0 | 3.0 | ... |
| <u>Panama</u> | 1970 | 2.6 | 4.5 | 2.0 | 4.5 | ... |
| | 1972 | 2.5 | 4.8 | 2.0 | 5.0 | ... |
| <u>Peru</u> | 1968 | 3.2 | 1.6 | 2.3 | 4.2 | 4.3 |
| | 1970 | 3.9 | 1.8 | 2.8 | 5.0 | 5.1 |
| <u>Uruguay ^{b/}</u> | 1967 | 2.1 | ... | 1.6 | 2.7 | 4.0 |
| | 1968 | 2.1 | ... | 1.6 | 2.5 | 4.0 |
| <u>Venezuela</u> | 1966 | ... | 2.0 | 2.0 | 4.0 | ... |
| | 1970 | ... | 2.0 | 2.0 | 4.0 | ... |
| | 1971 | ... | 2.0 | 2.0 | 4.0 | ... |

^{a/} Corresponds to year of comparison of surveys with national accounts.
^{b/} Percentages referring to Department of Montevideo.

/Ratios of

Ratios of this kind obtained from nation-wide surveys, as shown in table 17, and the context provided by the estimates of the regional product available for each country,^{37/} are useful for this purpose. The notions to which both these pieces of information may give rise tend to under-estimate the regional differences in income^{38/} and, therefore, the discrepancies between sub-national surveys and the macroeconomic aggregates. Comparison of the results of sub-national surveys with national accounts aggregates for non-agricultural activities helps to determine the margins of discrepancy in primary income, since the varying effect of agricultural income is eliminated (see again table 15).

In table 18 an attempt is made to provide a quantitative assessment of the discrepancies in table 15 which cannot be reasonably accounted for by differences of concept or coverage. These differences have been considered with largesse and some margin has also been left to allow for factors that may have escaped the analysis of comparability; thus minimum magnitudes attributable to measurement discrepancies have been estimated in each case. In employment surveys and censuses, this lowest limit nature of the discrepancies is, moreover, strengthened by the over-estimative bias attributable to the procedure used for obtaining aggregate and mean incomes from grouped data. The final discrepancies of up to 5 per cent have, in general, been considered as indicative of consistency between the results of the survey or census and the macroeconomic statistics taken as a yardstick.

The adoption of this conservative position in assessing the discrepancies in measurement is in line with the aim of basing the analysis of reliability of the survey and census results beyond most of the limitations so far indicated.

^{37/} See, in this respect, [62].

^{38/} The differential under-estimation by type of income in surveys with national coverage very probably diminishes the differences in income between the central areas and the rest of the country. Estimates of the regional product, for their part, do not include transfers of net income to the central areas.

Table 17
INCOME PER HOUSEHOLD, FOR DIFFERENT TYPES OF INCOME, IN SUB-NATIONAL
SEGMENTS OF HOUSEHOLD SURVEYS OF NATIONAL COVERAGE
(National average = 1.00)

| Country, survey and types of income | Year | All activities | | | Non-agricultural activities | | |
|---|-----------|----------------|-------|--------------|-----------------------------|-------|--------------|
| | | Rural | Urban | Metro | Rural | Urban | Metro |
| | | | | politan area | | | politan area |
| <u>Brasil</u> (5.2.2) | 1972 | | | | | | |
| (a) Distributed factor income, in cash | | 0.48 | 1.31 | | | | |
| (b) Transfers | | 0.39 | 1.36 | | | | |
| <u>Colombia</u> (4.1) | 1970 | | | | | | |
| (a) Total money income of households | | 0.48 | 1.41 | | | 1.07 | |
| (b) Total personal income of employees | | 0.39 | 1.49 | | | | |
| (c) Total personal income of self-employed | | 0.67 | 1.26 | | | | |
| <u>Costa Rica</u> (2.1) | 1966-1967 | | | | | | |
| (a) Estimated primary incomes of households | | ... | ... | ... | 0.73 | 1.12 | 1.19 |
| <u>Costa Rica</u> (4) | 1971 | | | | | | |
| (a) Total household income | | 0.68 | 1.45 | 1.57 | ... | ... | ... |
| <u>Chile</u> (5.6) | 1968 | | | | | | |
| (a) Total household income | | 0.63 | 1.23 | 1.44 | 0.65 | 1.10 | 1.28 |
| (b) Wages and salaries | | 0.59 | 1.25 | 1.40 | ... | ... | ... |
| (c) Entrepreneurial income | | 0.29 | 1.07 | 1.28 | ... | ... | ... |
| (d) Property income | | 0.39 | 1.39 | 2.12 | ... | ... | ... |
| (e) Transfers and other income | | 0.46 | 1.32 | 1.41 | ... | ... | ... |
| <u>Honduras</u> (1) | 1967-1968 | | | | | | |
| (a) Total household income | | 0.45 | 2.34 | 2.99 | ... | ... | ... |
| (b) Agricultural incomes | | 1.07 | 0.60 | 0.23 | - | - | - |
| (c) Non-agricultural incomes | | - | - | - | 0.21 | 3.02 | 4.06 |
| (c1) Wages and salaries | | | | | 0.25 | 2.85 | 3.63 |
| (c2) Entrepreneurial income | | | | | 0.14 | 3.09 | 4.39 |
| (c3) Property income | | | | | - | 3.41 | 5.66 |
| (c4) Transfers and other income | | | | | 0.22 | 2.90 | 4.15 |
| <u>Mexico</u> (6) | 1968 | | | | | | |
| (a) Total household income | | 0.53 | 1.44 | 2.33 | | | |
| (b) Wages and salaries | | 0.39 | 1.56 | 2.66 | | | |
| (c) Entrepreneurial income | | 0.86 | 1.12 | 1.51 | | | |
| (d) Property income | | 0.40 | 1.57 | 3.08 | | | |
| (e) Transfers | | 0.50 | 1.47 | 1.86 | | | |
| <u>Panama</u> (2.8) | 1970 | | | | | | |
| (a) Wages and salaries | | | | 1.16 | | | ... |
| <u>Panama</u> (2.10) | 1972 | | | | | | |
| (a) Wages and salaries | | | | 1.08 | | | ... |
| <u>Panama</u> (3) | 1970 | | | | | | |
| (a) Total household income | | | | 1.44 | | | 1.14 |
| (b) Wages and salaries | | | | 1.53 | | | 1.18 |
| (c) Entrepreneurial income | | | | 0.93 | | | 0.91 |
| (d) Property income | | | | 1.67 | | | 1.23 |
| (e) Transfers | | | | 1.45 | | | 1.07 |
| (f) Imputed rent from own-occupied dwelling | | | | 1.37 | | | 1.10 |
| <u>Uruguay</u> a/ | 1967 | | | | | | |
| (a) Total household income | | | | | | | 1.16 |
| (b) Wages and salaries | | | | | | | 1.14 |
| (c) Entrepreneurial and property income | | | | | | | 1.30 |
| (d) Transfers | | | | | | | 1.23 |

a/ Ad hoc estimates from national accounts

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Table 18

QUANTITATIVE ASSESSMENT OF THE MINIMUM MEASUREMENT DISCREPANCIES BETWEEN SURVEYS^{a/} AND CENSUSES^{b/} RESULTS AND COMPARABLE MACRO-ECONOMIC ESTIMATES^{a/}

(Percentages)

| Country | Survey | Coverage b/ | Total household income | Wages and salaries | Entrepre- neurial income | Property income | Transfers |
|---------------------------|--------|----------------|------------------------------|--------------------------|--------------------------------|--------------------|-----------|
| (a) Family budget surveys | | | | | | | |
| Costa Rica | 4 | N(T) | -15 | ... | ... | ... | ... |
| Honduras | 1 | N(T) | -30 | ... | ... | ... | ... |
| Mexico | 6 | N(T) | ... | +15 | -45 | ... | ... |
| Uruguay | 2.1 | MA(T) | -12 | C | -35 | -35 | C |
| Argentina | 6 | MA(T) | -18 | -30 | -35 | +50 | +15 |
| Chile | 6 | MA(T) | -30 | ... | ... | ... | ... |
| Peru | 7 | MA(T) | -5 | C | -15 | +10 | -20 |
| Venezuela | 3.4 | MA(T) | -10 | -15 | -25 | +100 | C |
| Colombia | 3 | MA(T) | +10 | C | C | +50 | +100 |
| Colombia | 4.2 | MA(T) | +10 | ... | ... | ... | ... |
| (b) Income surveys | | | | | | | |
| Brazil | 5.2.2 | N(T) | ... | C | -15 | ... | ... |
| Chile | 5.6 | N(T) | -27 | -10 | -45 | C | -50 |
| Panamá | 3 | N(T) | - | C | -40 | +40 | C |
| Argentina | 7.20 | MA(T) | -29 | -15 | -40 | -70 | -15 |
| Venezuela | 10 | MA(T) | -10 | ... | ... | ... | ... |
| Venezuela | 10 | U(T) | -15 | ... | ... | ... | ... |
| (c) Labor surveys | | | | | | | |
| Brazil | 4.12 | N(MA) | ... | C | -30 | ... | ... |
| Brazil | 5.2.1 | N(MA) | ... | C | -30 | ... | ... |
| Chile | 5.5 | H(MA) | ... | -20 | -50 | ... | ... |
| Colombia | 4.1 | N(T) | ... | C | -35 | ... | ... |
| Costa Rica | 2.1 | N(MA) | ... | -10 | -10 | ... | ... |
| Costa Rica | 2.7 | U(MA) | ... | -10 | -20 | ... | ... |
| Peru | 4.1 | U(T) | ... | -15 | -45 | ... | ... |
| Uruguay | 3.1 | MA(T) | ... | +25 | -45 | ... | ... |
| Venezuela | 5.12 | N(MA) | ... | C | +15 | ... | ... |
| Venezuela | 6.4 | MA(MA) | ... | +15 | +10 | ... | ... |
| (d) Demographic censuses | | | | | | | |
| Brazil | 1970 | N(T) | ... | -25 | -40 | ... | ... |
| Mexico | 1970 | N(T) | ... | C | -45 | ... | ... |

Note: C: Indicates general consistency between both kinds of estimate; corresponds to discrepancies of 5 per cent or less.

a/ Taking into consideration differences of concept and of levels of measurement.

b/ Areas: N: National; MA: metropolitan area; U: urban; MC: main cities.

Activities: (T) All activities; (NA): non-agricultural activities.

/Therefore, the

Therefore, the percentages in table 18 may be considered as the lowest limits of the discrepancies between the estimates of aggregate household income based on the national accounts and those which would be obtained alternatively on the basis of the surveys or censuses, with the appropriate conceptual content and coverage, assuming that the households or income recipients not reporting income would not introduce any bias into the results.

(d) Highlights

Later in this study some caveats are made regarding the measurement of income in each type of survey. Subject to that more detailed analysis, and without overlooking the basic fact that each survey is a measurement experience of unique characteristics, it is possible to indicate the highlights of the comparisons made.

(i) A glance at the discrepancies involved reveals a generalized tendency for the estimates obtained from surveys and censuses to be lower than the macroeconomic aggregates. This pattern is clearly observable in nation-wide surveys and population censuses; but it may also be discerned in surveys with sub-national coverage, if some consideration is given to the magnitude of the ratios for these surveys shown in table 15, and to the regional differences in income and possible differences in concept, as in table 18.

This verification is not new in consistency controls, between survey results and national accounts totals. The findings are more interesting, however, when comparisons of the different forms of income in different types of surveys are analysed.

(ii) Perhaps the most striking fact that emerges is that, quite apart from the type of survey, the questioning technique, or the concepts used, household surveys and population censuses estimate a significantly lower entrepreneurial income received by households than that obtained from the national accounts. In only one-third of the cases considered the minimum discrepancy has been estimated at between 15 and 20 per cent; in most of the surveys, it is as high as 30 to 50 per cent. These percentages are higher than any estimate of the differences there may be, on average, between withdrawals and current income net of depreciation.

/(iii) As

(iii) As regards the estimates of aggregate wages and salaries, the results of half of the surveys reveal negligible discrepancies with respect to the national accounts totals; the results of other surveys, in contrast, fall some 10 to 30 per cent below those totals; very few surveys, on the other hand, provide estimates of wages and salaries higher than the macroeconomic estimates. The first group includes some of the family budget surveys, the two "sensa stricto" surveys of income, one of the population censuses, and half of the employment surveys considered. In contrast, discrepancies indicating under-estimation of wages and salaries appear in the other population census, in half of the employment surveys considered, in the two income surveys undertaken as supplement to employment surveys, and in the rest of the family budget surveys.

(iv) Another remarkable fact is that in most of the surveys investigating property income for which comparisons were possible, the results obtained under this head tend to be significantly higher than the corresponding national accounts estimates.^{39/} Although the effect of possible biases in the composition of samples in favour of the middle strata cannot be completely discounted, it is difficult not to believe that the property income received by households as shown in the national accounts is in most cases under-estimated, particularly in view of the probable tendency to under-report this kind of income in the surveys.

(v) The measurement of transfers received by households would seem to follow the same course as the measurement of wages and salaries: in the surveys in which there is little discrepancy between these and the corresponding national accounts aggregates, so also is there little difference between aggregate transfers and the corresponding macroeconomic estimates; significant discrepancies emerge, in contrast, in aggregate transfers in the same surveys as those in which the aggregate wages and salaries are under-estimated.

^{39/} In the comparisons effected in table 15, these estimates included gross rents, without deducting imputed depreciation of dwellings.

/(vi) The

(vi) The measurement discrepancies of income with respect to the national accounts are more closely associated with the overall quality of the inquiry than with its type. Among surveys of comparable quality, those especially designed to measure income and the family budget surveys constitute more accurate measurement techniques than the questionnaires or questions on income included in employment surveys. Defects in the samples and inadequate controls in carrying out the survey may reverse this situation, however.

(vii) In a couple of instances it is possible to verify more clearly the relative superiority of income surveys over the income results of employment surveys. In both instances ^{40/} the same sample and the same operational organization were used to carry out, on the one hand, the income survey by means of a special questionnaire and on the other hand the employment survey which included a question about income. Judging by the discrepancies with respect to the national accounts totals in both instances, the results of the income survey were found to be less biased than those of the employment survey, particularly in the measurement of entrepreneurial income.

(viii) It is rash to make blanket statements regarding the measurement of income in population censuses on the basis of the two cases analysed, particularly as they differ as regards their discrepancies with respect to the macroeconomic estimates. The feeling cannot be concealed, however, that as regards the reliability of their results they could be grouped together with the employment surveys of doubtful quality.

The situation depicted by these highlights from the comparison of household income may be amplified by those arising from the comparison of the mean incomes of recipients in different socio-economic groups.

^{40/} These are, in the first case, the income survey (5.2.2) and the employment survey (5.2.1) which formed part of the second wave of the PNAD (5.2) in Brazil, and in the second case the supplementary income survey (5.6.2) and employment survey (5.5) carried out as part of the Continuous Manpower Survey (5) in Chile.

12. Comparison of mean incomes of recipients in different socio-economic groups

(a) Information used

The data available for most of the employment surveys, income surveys and population censuses considered enable the mean income of employees (table 19) and of self-employed persons (table 20) in different sectors of activity to be compared with the estimates of primary income for the same groups of income recipients obtained from the national accounts.

The mean sectoral incomes of employees and self-employed in each survey appears in detail in annex G and was estimated on the basis of the frequency distribution grouped by income size intervals for each occupational status in each kind of economic activity. The comparison is effected with the corresponding mean incomes obtained, relating the macroeconomic estimates of wages and salaries originated in each sector (annex C) and of entrepreneurial income of households (annex D) to the corresponding estimates of the labour force of employees and self-employed in each sector, which are shown in annex A; the resulting mean incomes are included in detail in annex E.

In the comparisons made in tables 19 and 20, the income recipients were grouped in such a way as to obtain similar classifications from all of the three sources used and groups in which the sampling errors were not excessive.

(b) Comparability problems

This confrontation is affected by the same sort of problems of comparability as arose for the estimates of household incomes, and some more.

Like the aggregate household incomes in annex F, the average incomes in annex G are annual estimates relating to the whole calendar year for which the comparison is made; they include corrections for the price changes between the reference period used in each case to measure income and the average for the calendar year.

/Table 19

Table 19
RELATION BETWEEN MEAN INCOMES OF EMPLOYEES FROM SURVEYS AND CENSUSES AND THOSE ESTIMATED FROM NATIONAL ACCOUNTS (NA) 1/2/
(Mean incomes MA = 1.00)

| | Household survey of national coverage | | | | Household surveys of sub-national coverage | | | |
|--|---------------------------------------|--------------------------------|--------------------------------|--------------------------------|--|--------------------------------|--------------------------------|--------------------------------|
| | Brazil | Costa Rica | Chile | Mexico | Venezuela | Argentina | Costa Rica | Venezuela |
| | 5-2-1 1972 | 2-1 1967 | 5-5 1966 | Census 1969 | 5-12 1971 | 7-20 (MA) 1970 | 2-7 (U) 1971 | 6-4 (MA) 1970 |
| (a) Relations between mean incomes | | | | | | | | |
| I. Agricultural activities | 0.38 | 0.42 | 0.42 | 0.42 | 0.22 | 0.22 | 0.22 | 0.24 |
| II. Non-agricultural activities | 0.80 | 0.90 | 0.74 | 0.74 | 0.92 | 0.92 | 0.92 | 0.92 |
| Mining and quarrying | | | 0.64 | 0.64 | | | | |
| Manufacturing | 0.91 | 1.10 | 0.74 | 0.74 | 1.25 | 0.84 | 0.91 | 1.49 |
| Electricity, gas, water | | | 0.98 | 0.68 | 0.69 | 0.83 | 1.07 | 0.94 |
| Construction | 0.84 | 0.52 | 0.75 | 0.66 | 0.75 | 0.95 | 1.10 | 1.05 |
| Transport, storage and communications | 0.67 | 0.84 | 0.75 | 0.66 | 0.59 | 1.01 | 0.96 | 0.86 |
| Commerce, financial establishments | | | 0.73 | 0.83 | 0.98 | 0.98 | 0.96 | 1.49 |
| Other services | | | | 0.93 | | | | |
| III. All employees | 0.74 | 0.80 | 0.74 | 0.74 | 0.92 | 0.92 | 0.92 | 0.92 |
| | Total income of each recipient | Total income of each recipient | Total income of each recipient | Total income of each recipient | Total income of each recipient | Total income of each recipient | Total income of each recipient | Total income of each recipient |
| (b) Income concept of surveys | | | | | | | | |
| (c) Approximate magnitudes of the differences in the conceptual content of the surveys compared with the macro-economic estimates | | | | | | | | |
| Plus: | | | | | | | | |
| i. Deductions | 0.08 | 0.08 | 0.08 | 0.08 | 0.04 | 0.07 | 0.04 | 0.04 |
| ii. Earnings in kind | 0.08 | 0.08 | 0.08 | 0.08 | 0.04 | 0.03 | 0.04 | 0.03 |
| iii. Earnings from secondary occupations | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 |
| Less: | | | | | | | | |
| iv. Other types of income | 0.07 | 0.07 | 0.07 | 0.05 | 0.01 | 0.01 | 0.01 | 0.01 |
| (d) Estimated yardstick relations between mean incomes of the areas covered by each survey and those of all non-agricultural activities d/ | | | | | | | | |
| 1/ Annex G. | | | | | | 1.20-1.30 | 1.10-1.15 | 1.30-1.40 |
| 2/ Annex E. | | | | | | | | |
| 3/ Estimated conjunctually on the basis of the regional differences available from surveys and calculations of the regional products. | | | | | | | | |

Table 20

Table 20
RELATION BETWEEN MEAN INCOMES OF SELF-EMPLOYED FROM SURVEYS AND CENSUSES AND THOSE ESTIMATED FROM NATIONAL ACCOUNTS (NA)
(Mean income NA = 1.00)

| | Household surveys of national coverage | | | | Household surveys of sub-national coverage | | | |
|--|--|--------------|-------------|--------------|--|-------------------|-----------------|------------------|
| | Brazil | Costa Rica | Chile | Mexico | Venezuela | Argentina | Costa Rica | Venezuela |
| | 4.12 1970 | 5.21 1972 | 5.5 1968 | 7.20 1970 | 5.12 1971 | 7.20 (NA) 1970 | 2.7 (U) 1971 | 6.4 (NA) 1970 |
| (a) Relations between mean incomes | | | | | | | | |
| I. Agricultural activities | 0.81 | 1.68 | 0.47 | 0.74 | 1.12 | 0.51 ^b | 1.05 | 1.72 |
| II. Non-agricultural activities | 0.27 | 0.47 | 0.25 | 0.64 | 1.31 | 0.40 ^b | 0.71 | 1.72 |
| Manufacturing | 0.40 | 0.52 | 0.25 | 0.33 | 1.06 | 0.52 | 0.31 | 1.86 |
| Electricity, gas, water | 0.60 | 0.68 | 0.77 | 0.32 | 1.06 | 0.62 | 1.20 | 1.86 |
| Transport, storage and communications | 0.59 | 0.45 | 0.77 | 0.32 | 1.06 | 0.51 | 1.05 | 1.86 |
| Commerce, financial establishments | 0.50 | 0.45 | 0.77 | 0.32 | 1.06 | 0.51 | 1.05 | 1.86 |
| Other services | 0.50 | 0.45 | 0.77 | 0.32 | 1.06 | 0.51 | 1.05 | 1.86 |
| III. All self-employed | 0.60 | 0.68 | 0.77 | 0.32 | 1.06 | 0.51 | 1.05 | 1.86 |
| (b) Income concept of surveys | | | | | | | | |
| Total income of each recipient | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| Total income of each recipient | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| Total income of each recipient | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| Total income of each recipient | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| (c) Approximate magnitudes of the differences in the conceptual content of the surveys compared with the macro-economic estimates ^{a/} | | | | | | | | |
| Plus: | | | | | | | | |
| i. Deductions | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| ii. Earnings in kind | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| iii. Earnings from secondary occupations | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| Less: | | | | | | | | |
| iv. Other types of income | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
| (d) Estimated Yarek relationship between mean incomes of the areas covered by each survey and those of all non-agricultural activities ^{d/} | | | | | | | | |
| Annex a. ^{b/} Excluding mining and quarrying ^{c/} | 1.20-1.30 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 |
| Annex b. ^{b/} Excluding mining and quarrying ^{c/} | 1.20-1.30 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 |
| Annex c. ^{b/} Excluding mining and quarrying ^{c/} | 1.20-1.30 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 |
| Annex d. ^{b/} Excluding mining and quarrying ^{c/} | 1.20-1.30 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 | 1.10-1.15 |

^{a/} For non-agricultural self-employed. ^{b/} Estimated
^{c/} For non-agricultural self-employed.
^{d/} Included in "Manufacturing".

The comparison

The comparison may also be influenced by conjunctural factors particularly in surveys in which the entire samples was investigated in a period of less than one year. In order to measure the approximate magnitude of the effect of conjunctural variations in the employment situation on the measurement of primary income in this type of survey, an analysis was made of the results of three continuous employment surveys for two different periods in the same year, between which there had been no adjustment of legal wages. The differences between those intra-annual estimates varied between 3 and 7 per cent for mean wages and salaries and between 4 and 10 per cent for mean entrepreneurial incomes, the differences at the sectoral level are of a similar order.^{41/} As was pointed out earlier, it is hoped that the differences between mean incomes measured in a specific conjunctural situation and the annual averages will be less than those shown, which correspond to two specific situations within the same year.

The comparison of mean incomes of recipients belonging to different socio-economic groups presents some further problems which do not arise in the comparison of estimated household incomes.

With the combination of two different sets of data (national accounts estimates and demographic censuses results on the labour force) it is inevitable that some inconsistencies may remain in

^{41/} The differences between the mean incomes obtained in each instance were as follows:
(i) Brazil: between survey (5.3) covering March-June 1967 and survey (5.4) covering July-October 1967: non-agricultural self-employment 5 per cent; non-agricultural employees: 7 per cent.
(ii) Costa Rica: between survey (2.4) of the first half of 1969 and survey (2.5) of the second half of that year: non-agricultural self-employed: 10 per cent; employees: 4.4 per cent.
(iii) Venezuela: between survey (5.12) of February-March 1971 and survey (5.13) of June-September of the same year: non-agricultural employees: 3 per cent.

/the sectoral

the sectoral classification of the two sources, which will affect the calculation of the sectoral mean incomes used as a yardstick.^{42/} This problem does not appear in survey results, in which possible errors of classification equally affect the recipients and their incomes.

In some cases comparability is also affected to a certain extent by the fact that the mean incomes used as yardsticks had to be calculated on the basis of estimates of the economically active population, total and by sectors (see annex E), while the survey results (annex G) refer to employed recipients. This conceptual difference scarcely affects the calculation of average entrepreneurial income, and will rarely lead to an under-estimation of the reference mean wages of over 2 per cent.^{43/}

The income concepts used in surveys for each recipient do not wholly coincide with those corresponding to the mean sectoral incomes obtained from national accounts. This circumstance conditions the interpretation of the relations in tables 19 and 20. However, it is possible to estimate the approximate magnitude of each of the main conceptual differences for the economy as a whole, although not by sector. Such estimates are included in those tables to facilitate the interpretation of the sectoral relations between mean incomes obtained in each case. With the same object, the estimated range of the relation between average incomes in the areas covered and the national averages for non-agricultural activities is included for each survey of sub-national coverage.

^{42/} A source of possible inconsistencies between the sectoral labour force and the income originated in each sector may lie in the unavoidably arbitrary allocation of persons whose sectoral attachment is unknown in order to obtain the estimates in annex A. The margin of error in sectoral estimates which may be attributed to this operation is not very important, however: in the great majority of the censuses used the undetermined segment of the labour force does not represent more than 4 per cent of employees or 2 per cent of the self-employed.

^{43/} It is unusual for the census measurements of the rate of unemployment to be higher than this, for the reasons given in paragraph 7.

(c) Highlights

(i) The few inquiries which include agricultural wages appear to have measured them with varying success. Three surveys which investigate the incomes of agricultural employees ^{44/} obtained results which were considerably lower than those of the national accounts, even taking into account the importance of wages in kind in those groups. The Brazil census shows an even greater under-estimation, and perhaps fails to measure wages in kind. The results of the Mexico census are higher than those of the national accounts, probably because of biases in the internal composition of the agricultural employees included.

(ii) Among the groups of urban employees, the majority of the surveys and censuses considered show less under-estimation of the incomes of employees in industry and other goods-producing sectors than in the service activities. To the extent that these few cases may represent a general tendency, over and above the sampling errors, this fact may either reflect different forms of operation of the response biases among the groups of employees, or may be connected with the differential representation of these groups in the sample.^{45/}

(iii) It has only been possible to compare the incomes of farmers obtained from the two population censuses and two income surveys. It appears from the results of these few cases that the discrepancies with regard to the national accounts, while considerable, are not as serious

^{44/} The surveys (5.2.1) and (5.2.2) in Brazil and the survey (3) in Panama (see table 19).

^{45/} In the surveys analysed, the groups of urban employees whose incomes show the greatest discrepancies in comparison with the reference incomes are usually under-represented in the sample and the groups whose income under-estimation is below the average for urban employees are usually over-represented. If the response biases to a survey were uniform for all urban employees, there would be support for the hypothesis that the differential representation of the different groups of employees in the samples is concentrated among those with higher incomes. The only instance in which the results are clearly consistent with the contrary hypothesis is the survey (7.20) in Argentina.

/as those

as those which the same censuses and surveys show for the self-employed in non-agricultural activities. The discrepancies are still smaller if the results are viewed as measurements of money incomes, since at least one-fifth of the total farm income estimated independently must correspond, in those countries, to production for own-consumption and to investment in the farms.

(iv) Behind the generalized under-estimation of the incomes of the self-employed in urban activities is the equally generalized but far more acute under-estimation of the income of the self-employed in industry and other goods-producing activities;^{46/} the demographic census in Mexico is the only case among those analysed in which the opposite occurs. This might indicate differential response biases of those groups; but it is nevertheless possible that the self-employed in the production of goods earmark a higher proportion of the operating surplus for capital formation and that they compute their deductions with greater accuracy while in other respects incurring in response biases of similar size to that of the other groups of urban self-employed.

(v) The discrepancies with regard to the corresponding reference mean incomes taken from the national accounts are relatively less uneven among employees engaged in various non-agricultural activities than among the non-agricultural self-employed. This may well be attributable to the lesser accuracy of the macroeconomic estimates of entrepreneurial income taken as a yardstick, or to greater sampling errors in the self-employed groups; but there are still sufficient grounds for supporting the hypothesis that the biases of response or of internal composition are relatively more uniform among the groups of employees than among the groups of urban self-employed.

These discrepancies in the estimates for various groups of employees and self-employed provide some insight into the factors underlying the discrepancies in the estimates of the various forms of household income.

^{46/} To the extent that for the surveys (2.1) and (2.7) in Costa Rica and (3) in Panama this may be the only source of under-estimation of non-agricultural entrepreneurial incomes.

13. Caveats on the measurement of income in the different types of surveys and in population censuses

It must be stressed that the minimum discrepancies obtained in comparing survey and census results with the reference framework provided by the national accounts (table 18) cannot constitute a final evaluation of measurement errors, in view of the limitations imposed by the conceptual differences and by the degree of inaccuracy in any case retained by the national accounts estimates. Interpreted with caution in conjunction with the biases in the composition of the samples, these discrepancies nonetheless render possible to make some caveats on the reliability and the likely biases of the income measurements which may be obtained from the various surveys and censuses analysed and, therefore, from other inquiries of those same types.

(a) Estimation of household incomes in family budget surveys

In interpreting the comparison of such estimates, it must be borne in mind, that in this kind of survey the aggregates have been obtained by direct computation and are therefore not subject to the overestimation associated with computation on the basis of grouped data. There exists, however, an overestimation factor with respect to the national accounts, consisting of the capital receipts and interpersonal transfers which have not been possible to disaggregate from the total estimated household income in these surveys.

In the three nation-wide surveys (see table 15, part a, and table 18) there is a clear underestimation of total household income with respect to the national accounts aggregates which varies, according to each case, between 15 per cent (survey (4) in Costa Rica) and 30 per cent of total aggregate income (survey (1) in Honduras), even taking the deductions into consideration (table 18). In survey (6) in Mexico, the underestimation of household income may be over 20 per cent and may be attributed almost entirely to entrepreneurial income.^{47/}

^{47/} Wages and salaries, which are recorded net of deductions, appear to be overestimated; this might indicate that the sample is biased in favour of the middle strata of employees.

/The most

The most typical family budget surveys, however, have subnational coverage (see table 15, part b). As far as may be judged, in some of these surveys there would also be significant underestimations of household income. The degree and sources of underestimation vary from one survey to another, according to the final appraisal of the measurement discrepancies made in table 18.

In survey (2.1) conducted in Uruguay, household incomes are 12 per cent lower than the independent macroeconomic estimates made for the Montevideo area. The underestimation may be attributed entirely to entrepreneurial and property incomes.

Mean incomes per household estimated on the basis of survey (6) in Chile and (6) in Argentina are 6 per cent and 5 per cent lower, respectively, than the corresponding national averages (table 15, part b). If the known relationships between the mean incomes in metropolitan areas and those of the respective national economies are taken into account, however, it is highly probable that in both these countries the income differential in the metropolitan areas will be over 35 per cent.^{48/} That is why in table 18 it is conservatively assumed that these surveys underestimate the household incomes that would be obtained from the national accounts by 30 and 18 per cent, respectively. In the case of survey (6) in Argentina, an equal underestimation of about 30 per cent is noted in wages and salaries and in entrepreneurial income, as well as the usual positive discrepancy with respect to the macroeconomic estimates of property income, which in this case is about 50 per cent.

In other family budget surveys, also with less than national coverage, the underestimation seems to be less. Surveys (7) in Peru and (3.4) in Venezuela provide household income totals whose relations to the corresponding national averages almost fall within the range of regional differences in table 17. The relations of primary incomes

^{48/} In survey (5.6) carried out in Chile, household incomes in the metropolitan area are 44 per cent higher than those for the whole country (table 17). Although these results may to some extent be affected by the differential underestimation by area, the magnitude of this relationship is indicative enough.

/estimated from

estimated from these surveys with the corresponding average incomes for all non-agricultural activities (table 15, part b) indicate that in both cases there may be underestimations of at least 15 per cent in aggregate entrepreneurial income; in survey (3.4) in Venezuela there may also be an underestimation of the same order in aggregate wages and salaries. The discrepancies in total household income are smaller, because of the higher levels of property income.

The results of survey (3) in Colombia are probably those most consistent with the national accounts. The relation between total household income in the four cities and the national accounts estimates for the whole country is at the upper limit of the relations in table 17. This is due, however, to the inclusion of capital receipts and interpersonal transfers, and to the greater property incomes. Comparison with primary income from all non-agricultural activities obtained from the national accounts shows that the estimates of wages and salaries and of entrepreneurial income from the two sources are fairly consistent if the corresponding interregional differences in incomes are taken into account.

Something similar may have occurred in survey (4.2) in Colombia, although information on forms of income is not available to assert this more positively.

According to the evidence collected, family budget surveys show only a moderate tendency to underestimate wages and salaries. The possibility that this is primarily due to the failure in recording the incomes in gross form and to register accurately all income in kind, cannot be ruled out. Understatement of entrepreneurial income is usually more significant; only a minor part of the discrepancies noted can be attributed to reporting incomes net of direct taxes (see table 16); more important is the possibility that reported incomes do not take into account deductions for depreciation, which are computed in the entrepreneurial income obtained from national accounts. Although it cannot be verified through the information available from these surveys, it would not be surprising if the mean incomes of employees and self-employed in various sectors have biases similar to those found in employment surveys.

/The measurement

The measurement of transfers in these surveys appears to have a similar level of accuracy to that of wages and salaries. The high relations with respect to national accounts totals which appear in table 15 for this form of income may be largely attributable to the inclusion, in the same aggregate, of interpersonal transfers and of capital receipts.

It has already been pointed out that estimates of property income based on family budget surveys are almost always considerably higher than the property incomes received by households estimated from the national accounts, and the probable causes of this fact have been given. It is worth repeating that this observation does not wholly exclude the presence of underestimating biases in the measurement of property income by surveys; the national accounts underestimation may in some cases be sufficiently large to overcome the effect of such biases. Among other possible reasons for the discrepancies, it is probable that the majority of family budget surveys are more accurate than the national accounts in determining the value of imputed rent for owner-occupied dwellings.

(b) Measurement of the different forms of income in income surveys

What we have called income surveys constitute a rather heterogeneous collection. Only surveys (5.2.2) in Brazil and (3) in Panama are, strictly speaking, surveys specifically designed to measure the incomes of the population.^{49/} Surveys (7.20) in Argentina, (5.6) in Chile and (10) in Venezuela, on the other hand, obtained income results on a supplementary basis, although a special questionnaire was used for the purpose. This is perhaps the reason why the results of the first two surveys are closer to the national accounts totals than those of the second group of surveys (see table 18).

^{49/} These estimates take into account mean wages obtained from the labour force continuous survey (2), which is carried out with the same sample used for survey (3).

/Survey (3)

Survey (3) in Panama underestimates total household income to a certain extent. The estimates of wages and salaries used as a yardstick are not wholly independent of the survey results;^{50/} the full consistency between both totals is therefore not surprising. In any event, they serve to show the considerable underestimation of entrepreneurial incomes in the survey. On the other hand, this survey gives transfers which are consistent with the totals estimated independently, and property incomes higher than those of the national accounts, as do the family budget surveys.

Survey (5.2.2) in Brazil also undervalues total household income to some extent, owing to the overall underestimation of entrepreneurial income. However, this is the net result of an appreciable underestimation of the incomes of the urban self-employed, and of a still greater, but positive discrepancy ^{51/} in the income of farmers, which might indicate under-representation of small farmers in the sample (see table 9). On the other hand, total wages and salaries are consistent with the macroeconomic estimates. The underestimation is concentrated in agricultural wages, which remain below the reference estimates even if wages in kind are taken into account.

Income surveys (7.20) in Argentina and (5.6) in Chile, which were carried out as supplementary to employment surveys, provide estimates of household incomes which are quite lower than those of the national accounts. In both cases, the overall under-estimation is most likely over 25 per cent (perhaps even higher than 30 per cent), and originates in all forms of income. The interpretation of the relations in table 15 leads to minimum discrepancies with respect to

^{50/} Survey (3) in Panama, in particular, was designed with special attention to conceptual consistency with the SNA (see ^{51/}).

^{51/} This is quite clear if it is considered that the income in kind of farmers, which may well constitute 25 per cent of their total income, would have to be added to the survey results.

the macroeconomic estimates (table 18) which are notably similar in both surveys. Entrepreneurial income may be underestimated in both cases by more than 40 per cent. Aggregate wages and salaries are about 10-15 per cent below those obtained from the national accounts. Transfers too appear to be underestimated in both surveys, and considerably more than wages and salaries in the case of survey (5.6) in Chile. Survey (7.20) in Argentina only registers a very small proportion of property incomes, even of those actually received (see annex H). Survey (5.6) in Chile, on the other hand, gives property income estimates which are consistent with those of the national accounts, although both sources probably underestimate imputed rents.^{52/}

The comparison of the mean incomes of recipients of different socio-economic groups in survey (7.20) in Argentina (tables 19 and 20) shows that the negative discrepancies in mean wages with regard to those of the national accounts are greater for employees in industry and construction, and that the underestimation of entrepreneurial incomes is also greater in the case of the self-employed in the same activities. In both cases the discrepancy exceeding the average could be related to the relative under-representation of the group in the sample (see tables 8 and 9 respectively) and give rise to the suspicion that this could imply a bias in the internal composition of the group towards the lower strata, whose effects might be superimposed over those of the response biases which are more uniform within each occupational category.

Survey (10) in Venezuela probably underestimates the total income of urban households by over 15 per cent; the underestimate of the results for the metropolitan area, however, would appear to be rather less.

(c) The measurement of primary incomes in employment surveys

Half of the nation-wide household surveys are employment surveys. Some of the surveys of subnational coverage considered are also of this type.

^{52/} See for illustration, the data in annexes C and H.

/Nearly all

Nearly all were designed in accordance with the Atlantida model.^{53/} Consequently, they only measure primary cash incomes of non-agricultural income-recipients; it is also probable that these incomes are net of deductions, owing to the question technique used (see table 13). Furthermore, the income recorded corresponds only to main occupations, which means that both the aggregate wages and salaries and the aggregate entrepreneurial income exclude a certain proportion of income corresponding to secondary occupations of income-recipients, which are naturally computed in the national accounts aggregates.

Once these factors conditioning measurements have been taken into account in each case, and the relationships of table 15 converted into the minimum measurement discrepancies of table 18, it may be observed that nearly all the employment surveys underestimate the aggregate entrepreneurial income by considerable amounts, but differ among themselves as regards the consistency of the aggregate wages and salaries resulting from them vis-à-vis the respective national accounts totals.

A first group of surveys ^{54/} give estimates of wages and salaries consistent with those of national accounts, at the aggregate level; when the results of some of these are compared by groups of employees (see table 19) positive discrepancies appear in the income of industrial employees, which offset the underestimate of the income of employees in service activities. These same surveys underestimate entrepreneurial income to a lesser degree than the rest: 30-35 per cent below the macroeconomic total instead of 45-50 per cent. Both features could be interpreted - somewhat boldly - to mean that the employment surveys of this group are those of relatively greater accuracy (:) for the measurement of income.

^{53/} In fact, only survey (4.1) in Colombia and (4.1) in Peru depart somewhat from this model.

^{54/} (4.12) and (5.2.1) in Brazil, (4.1) in Colombia and (5.12) in Venezuela.

Surveys (2.1) and (2.7) in Costa Rica are in a similar predicament. In both surveys the estimates of wages and salaries come at least 10 per cent below national accounts totals, with a certain degree of uniformity through the main groups of employees, but the aggregate entrepreneurial income differ rather less from the reference totals than in the other surveys, owing to the apparently more accurate measurements of self-employed persons in service activities.

Surveys (5.12) and (6.4) in Venezuela estimate industrial wages and the income of all groups of urban self-employed persons at a level above the respective totals adopted as yardsticks. The former may be due to biases in the structure of the group of industrial employees, but the second could well be attributed to a general underestimate of the entrepreneurial income received by private persons that was obtained from the national accounts.

Other employment surveys ^{55/} give total wages and salaries around 15-20 per cent below national accounts totals, and total entrepreneurial income underestimated by about 45-50 per cent. Survey (3.1) in Uruguay could also be included in this category, if it is considered that the positive discrepancy in aggregate wages and salaries may be the result of sizeable biases in the structure of urban employees, which more than offset response biases.

(d) The measurement of income in population censuses

The two population censuses considered provide frequency distributions of active income recipients by size of income, which makes it possible to estimate the total personal income of employees and self-employed persons (Annexes F and G), with the positive likely bias of 1-5 per cent already referred to, which may be attributed to the procedure for estimating mean class incomes.

Once the corresponding imputations have been made for the conceptual differences vis-a-vis the macroeconomic estimates adopted as yardsticks, the minimum discrepancies of the census results compared with these estimates may be seen as indicated in table 18.

^{55/} Among those considered, the surveys (5.5) in Chile and (4.1) in Peru; of the latter only the results for urban areas have been used.

/The aggregate

The aggregate income of the employees obtained from the results of the 1970 demographic census in Brazil is probably at least 25 per cent below the macroeconomic estimate of comparable conceptual content. The largest underestimate appears in agricultural wages; even assuming that the census results actually correspond to wages in cash, it would be over 30 per cent. The underestimate of the income of non-agricultural employees, put at not less than 20 per cent, would be rather less if it is also assumed that the census fails uniformly in registering the wages in kind of these groups, and that its measurements thus correspond to wages in cash. In any case, the census underestimate of industrial wages would not be very great; it is in the income of service employees where the discrepancies are of considerable importance (see table 19).

The discrepancies in the aggregate income of self-employed persons obtained from the Brazilian census, compared with the reference estimate, are mainly to be found in urban activities; in these groups of self-employed persons, the income according to the census measurements may prove to be less than half the value estimated independently. The income of farmers obtained from the census, would, however, only be 10 per cent below the reference totals. This notable result leaves room for speculation. To what extent the overall question in the census on total income may have succeeded in covering, in the case of farmers, production for own-consumption and investment in the farm, is a matter of doubt. Insofar as it does not achieve this and the results of the census actually only refer to money income, the results could be consistent overall with the macroeconomic estimates; furthermore, they could suggest that these are underestimated if the importance of production for own-consumption is taken into consideration (perhaps more than one-fifth of the net incomes of the farmers). But there may exist another possible bias associated with the question techniques used - this would originate in the fact that the large proportion of respondents may have declared the total money receipts (or sales) of their farms, instead of net income. On the other hand, the possibility
/of large-scale

of large-scale biases because of lack of response to the question on income is ruled out.^{56/}

To interpret the results of the Mexico population census taken in 1970 it is necessary to take into account the biases in the structure of the groups which could be associated with non-response.^{57/} The estimates of the aggregate money income of employees obtained from these results are consistent with the reference total. Beyond this overall consistency, however, they show positive discrepancies for agricultural and industrial employees and negative discrepancies in the income of service employees. The large agricultural wages of the census probably reflect biases in the structure of the group, to the detriment of those with smaller incomes, owing to non-response and the exclusion of temporary workers. The higher industrial wages could indicate, however, a weakness in the estimates adopted as a yardstick.

The money income of farmers obtained from this census is also close to the estimates based on national accounts, if the importance of subsistence agricultural output in Mexico is taken into account. Before taking this fact as indicative of the accuracy of census results for this group, the possibility of biases with offsetting effects should be considered. It is difficult to accept that in this case response biases underestimating entrepreneurial income, found in so generalized a form in the inquiries reviewed, are not present here. On the contrary however, an overestimate of 6.8 per cent in aggregate agricultural income may exist owing to the grouping of census distributions. The considerable rate of non-response to the question on income may also have overestimating effects, insofar as it is concentrated among farmers with lower incomes. Finally, the presence of overestimative response biases of the same type as those suggested for the Brazil census cannot be completely ruled out.

^{56/} Percentages of income-recipients who did not declare income to the 1970 Brazilian census: agricultural employees 1.7 per cent; non-agricultural employees 3.3 per cent; farmers 2.3 per cent; self-employed in non-agricultural activities 1.5 per cent.

^{57/} In the 1970 Mexico census, percentages of income-recipients who did not declare income were: agricultural employees 10.8 per cent; non-agricultural employees 4.4 per cent; farmers 15.4 per cent; self-employed in non-agricultural activities 7.4 per cent.

14. Summary of findings

Professional statisticians would probably have preferred the use of stricter methods to evaluate the results on income distribution obtained from household surveys and demographic censuses. At the other end of the scale, the social scientists are compelled to choose between making their analysis on an empirical basis or remaining in the plane of more or less general abstractions. The commonest solution to this conflict consists in resorting to the most accessible data which can also exhibit as a footnote a reputable source, relegating doubts on the reliability of such data to the subconscious. The present study has endeavoured to bring back the reliability problem to the conscious level, which at the same time makes it possible to cream off its more exaggerated overtones. The fact that recourse has been had for this purpose to heuristic rules of common sense rather than statistical precision is a factor imposed by the situation prevailing in Latin American statistics. The approach to evaluating the results of the surveys in terms of their discrepancies with respect to the population censuses and the national accounts estimates, adopts the current assumption that the latter are all in all more accurate than the former and follows an operational rationale: it is these discrepancies finally which turn up in any attempt to use these results for macroeconomic analysis. Furthermore, for the sake of the validity of this approach, it has to be pointed out that, according to country practices in Latin America, national income estimates do not make use of available household survey results, and that therefore estimates from the two sources are independent.

The main obstacle is constituted by the underestimate of income in surveys and censuses, and by the fact that this underestimate differs according to socio-economic groups. The biases in the sample structure are less important vis-à-vis the magnitude of the above. All in all, both problems affect the validity of overall income distribution, both by size and by socio-economic groups, obtained from most of the surveys.

/The analysis

The analysis of the demographic and occupational structure of the samples shows up biases, but these are not so important as to invalidate the results of the surveys. The biases detectable in the structure by major socio-economic groups of some surveys would not give differences of more than 4 per cent in the aggregate incomes, and their effect on the overall size distribution of income would hardly produce variations of more than one-tenth in the share of any quintile in the aggregate income. However, they may significantly alter the share of the groups most affected by the biases, in the overall distribution of income by socio-economic group. The results of the population censuses are naturally exempt from this particular kind of bias.

The possible biases associated with the lack of response to income questions perhaps have more serious consequences on the measurement of income and its distribution; they also affect both the results of the censuses and those of the surveys. Their effects on these results constitute one of the factors which may explain the discrepancies in the results compared with macroeconomic estimates, together with possible biases in the internal structure of the socio-economic groups and the multiple response biases which may be present.

The measurement discrepancies outlined show a considerable underestimate of incomes in the majority of the inquiries reviewed, beyond the sampling variability of surveys and the degree of inaccuracy which may be attributed to national accounts estimates, and even after taking into account the differences in concepts and coverage as regards the aggregate and mean incomes obtained from these estimates.

It is frequent to find that this underestimate constitutes between 10 and 20 per cent of the total household income; in quite a few surveys, however, it may reach 25 per cent and in some even exceed 30 per cent of the total income. Very few of the surveys analysed, in contrast, can show results which are reasonably consistent with the macroeconomic estimates.

/To make

To make things worse, these overall discrepancies nearly always conceal dissimilar discrepancies in the measurement of the different forms of income. The property income obtained from the surveys is, as a general rule, greater than the estimates based on national accounts, which tend to undervalue this item. Wages and salaries in most of the cases are consistent with the national accounts totals; in other surveys, they turn out to be 10 to 20 per cent below these totals. Entrepreneurial income usually turns out to be between 25 and 45 per cent below the corresponding comparable macroeconomic estimates. Although a few surveys show an underestimate of entrepreneurial income similar to that of wages and salaries, the most common situation is for the minimum discrepancy found in the aggregate entrepreneurial income of the survey to have a relative magnitude of 2 and even 3 times that of the underestimate attributed to aggregate wages and salaries.

The discrepancies found in the income of recipients belonging to different socio-economic groups give an even more varied picture. However, there are some general features. The first is that the underestimate in the income of the different socio-economic groups is relatively more homogeneous by occupational status than by sector of activity; in nearly all the inquiries considered, the discrepancies calculated for the main groups of employees compared with the corresponding national accounts totals are of an order of magnitude more in line with the overall discrepancy in aggregate wages and salaries, while the underestimates of the income of the groups of self-employed are closer to the overall underestimate of aggregate entrepreneurial income; this is also the case of the dispersion of the discrepancies. This pattern could be indicative of broad-based differences in the response biases between the two main categories of occupational status. The second feature is that the income of the groups of industrial employees tend to show a smaller underestimate than the other groups of urban employees, and even a certain degree of overestimate; this could both be

/associated with

associated with differential response biases among the groups of employees and the differential representation of these groups in the sample. Finally, the results of the few inquiries which record agricultural incomes do not make it possible to draw conclusions which may be generalized; the greater relative underestimate which could be expected in these incomes is seen only in some of the cases analysed; in the other cases, nevertheless, there are reasons to suspect also the inaccuracy of the results.

The discrepancies in the measurement of the income of each socio-economic group may be due both to the accumulation of response biases and to the existence of biases in the internal structure of the groups. But any further investigation, with more disaggregated comparisons, meets with growing differences in the classification of the different sources of data and the magnitude of sampling errors, which make any conclusion on the accuracy of results delusive.

These biases underestimating income definitely constitutes the main obstacle which should be tackled when the results of surveys and censuses are used in the analysis of income distribution. In addition to these, there are the limitations imposed by the actual income content of each inquiry. First, the fact that most of the surveys available do not include agricultural incomes, be it because they do not record them or because their coverage is urban. Second, the fact that employment surveys usually only measure primary income from the main occupation of each active recipient. Third, the recording of incomes only customary and in net form, let alone in the surveys which define income in this form, but also in those which aim at measuring gross incomes, customary or not; in the second case, the presence of this type of bias may partly explain the measurement discrepancies discovered on the basis of the manifest conceptual content of the survey. Fourth, inevitable doubts arise as to the interpretation of the incomes of self-employed persons - whether as net current income originated in the activity or as financial withdrawals from the business. Fifth, the surveys which

/investigate property

investigate property income would appear to achieve overall more accurate results than the national accounts estimates, especially in the calculation of imputed rents; but doubts continue to exist as to the extent to which this is due in each case to biases towards the medium strata. Last, but not least, is the actual registration of incomes in kind; wages in kind are not investigated by some surveys, and those which do it probably do not register them in their entirety or either undervalue them; the income of farmers corresponding to production for own consumption are undercovered and undervalued in the few inquiries which attempt to register them. The failure to register adequately incomes in kind may perhaps explain in these cases too some of the discrepancies found between the incomes of the corresponding groups of recipients and the totals obtained from national accounts, even when the latter also tend to undervalue this type of income.

It is possible to advance some general reflections on the aptitude of the different types of survey as instruments for measuring income. The factor of most weight is, naturally, the overall quality of the investigation; in this sense, the income results of the population censuses lag behind those of any survey of reasonable quality. Of the inquiries of comparable quality, the surveys especially designed to measure incomes and the family budget surveys constitute more accurate measurement techniques than the questionnaires or questions on income included in the employment surveys, owing to the greater resources (in the form of questionnaire detail, interviewers' training, controls) which can be devoted to measuring income. The advantage of the former is the possibility of larger sample sizes and of investigating a number of socio-economic features which may be related to income; the family budget surveys in turn offer the advantage of providing additional control on income data by means of data on outlays and the fact that the smaller sample size is usually counterbalanced by a more intensive interview.

15. Main consequences for the analysis of
income distribution

The conclusions extracted in connexion with the contents and reliability of income distribution measurements that are obtained from household surveys and population censuses have exposed that overall distributions of income resulting from those sources can hardly be considered and analysed simply as "the" income distribution of the country. The coverage problems as well as those of content and underestimation of incomes invalidate such an approach.

The lack of national coverage of a large part of the available surveys can be made up only partially, using complementary sources. The exclusion of the agricultural sector obliges recourse to the surveys of establishments and to agricultural censuses which may be available. But even the analysis of urban income distribution in countries which only count on surveys for the main cities, would encounter the risk of using more or less firm assumptions on the incomes of the areas not covered, due to the lack of estimates of income originated in small geographic areas.

The conceptual content of the income measurements that are obtained from different types of surveys and censuses, impose further limitations to the analysis. To analyse the distribution of welfare, the measurements should refer to the available household income from all sources and accrued in cash or kind during a period of time as long as to incorporate conjunctural variations.

The income and family budget surveys and some censuses try to register the incomes from all sources. But the surveys which only record primary incomes - typically the employment surveys - constrain the analysis to the distribution of earnings, all or only those originating in the main occupation; this not only implies to ignore the eventual contribution of property income and of transfers to the formation of personal income of active recipients, but also that the passive recipients have to be left aside. The distribution of households size of income which are obtained in these cases correspond

/to the

to the primary incomes of households, which can only be used as proxy to the distribution of total household income for a fairly limited spectrum of analytical purposes. Furthermore, when the survey only records earnings in the main occupation of each active recipient, it also excludes from analysis the contribution that secondary earnings make to the formation of personal income; although this item may not be of great overall significance, its distribution is far from being homogeneous and there are no alternative sources for measuring it. The exclusion of passive recipients not only limits the coverage of the distribution by size; it also results, on the other hand, in a truncated distribution by socio-economic groups.

The inquiries which exclude income in kind from the measurements leave the problem of which could be the eventual distribution of these incomes by socio-economic groups and by size, unsolved. Salaries in kind are concentrated in the agricultural employees and, to a lesser extent, the services employees; they therefore generally correspond to the lower income strata. The incomes in kind received by industrial employees in modern enterprises, however, are not negligible. The fringe benefits of high level employees, which are probably measured among wages and salaries in national accounts either, are even less negligible. The portion in kind of entrepreneurial incomes is more clearly concentrated in the farmers group. There is not much doubt that those which correspond to production for own-consumption almost exclusively affect the total income of the farmers in subsistence agriculture, although not in an entirely homogeneous way as to the resulting total income levels. The imputed incomes related to the production for investment in the farm are usually spread, however, among the farmers of all income levels, with a greater relative importance in the case of ranches and medium and large planters.

The rents imputed for the own dwelling services increase total income of the medium and high level income groups; however, they can modify, more than proportionally the incomes of one group or another,
/depending on

depending on the institutional conditions of the housing market in each country.

Finally, inquiries which attempt to measure incomes in kind may fail to attain that purpose in a certain number of cases. The resulting underestimation would be comprised in the overall percentages of underestimation of the aggregate incomes we have been assessed in each case. Its differential effect by income groups is uncertain, as it depends on the characteristics to which those response biases may be associated, but it is not unlikely that they tend to concentrate in the lower income units since these may have considerable difficulties in evaluating them. Something similar could be said of the other types of income investigated the actual registration of which is uncertain: the extraordinary or non-customary incomes, some property incomes, etc.

The money income of the self-employed also poses problems for the interpretation of the distribution actually measured. To the extent to which the measurements correspond to withdrawals made from the own business and to which the portion of current incomes capitalized in it exceed the imputations for depreciation, the corresponding underestimation would be part of the discrepancy observed in aggregate entrepreneurial incomes. The net capital formation in the own business could be of much greater relative importance in the high income strata than in the low income ones, in which it could even be negative; its relative importance also varies among the self-employed in different activities. This eventual distortion of the income distribution by size and by socio-economic groups due to the lack of coverage of undistributed net incomes in personal enterprises is one aspect of the more general problem involved in the exclusion from the analysis of capitalized profits, mainly in corporations which accrue the wealth and economic power of their owners without affecting their available income; if they were to be taken into consideration, their final effect would be to increase the participation of the higher income strata.

/A fairly

A fairly large part of survey and census results approximate, although imperfectly, towards another of the analytical "desiderata" for welfare purposes: the measurement of available income after payments of taxes and transfers. In some instances they approximate more than the manifest conceptual content of the surveys would indicate, owing to the relatively generalized action of the response biases towards reporting incomes in net form. Insofar as the wages and salaries are concerned, some of the surveys record them net of deductions. Others attempt to measure them, at any rate, gross; but in those cases it is hard to know to what extent the action of the biases towards net reporting can affect the resulting size distribution. In those family budget surveys which in addition investigate deductions the action of these biases is probably reduced; to the extent in which this is not attained for all observations, however, the distributions of available income could be distorted by the biases, which act together with the deductions.

The interpretation of the results referring to entrepreneurial income is also uncertain in this respect. Surveys tend to enquire about income net of outlay; the current practices among manufacturers and merchants in most of the Latin American countries can induce them to include payments of direct taxes among the outlay of the business. The resulting underevaluation can contribute, although not very significantly, to the overall discrepancies found in the measurement of entrepreneurial income; however, it could have differential effects of greater significance by income groups.

Finally the reference period of the measurements limits the validity of the analysis beyond given conjunctural situations. This is clearly seen in the case of surveys utilizing a less than annual reference period, which is influenced by seasonal factors and which do not cover non-customary incomes or receipts of annual frequency; both facts could affect differently the measurement of income in some groups, particularly those at the bottom of the distribution depending on intermittent sources of livelihood, and possibly also high level /employees, which

employees, which receive part of their earning in the form of bonuses and participation in the profits. Most of the household budget surveys and a few of the employment surveys divide, on the other hand, the total sample in sub-samples distributed throughout a year; in this way, they incorporate the seasonal variations and the intra-annual conjunctural variations, although it is not so certain that they grasp the whole of the non-customary incomes. Only the use of the results of successive surveys of the same permanent programme can incorporate, however, the whole of the variations that could be considered conjunctural in countries where the economic policies' different redistributive sign alternate every two to five years. This affords, on the other hand, an indication of the difficulties in obtaining measurements approximating the concept of permanent income, required by some analytical purposes. Beyond the limitations that could impose on the analysis the actual conceptual content of the measurements, the most serious problems are found, linked to their representativeness and their accuracy.

The statistical precision of the results is naturally affected by sampling errors associated to the size of the sample and to whether they are stratified or not, as well as by the very dispersion of the income variable. But the many non-sampling errors exert a far greater influence on the accuracy of those results. Throughout this paper attempts have been made to discriminate the effects of those errors, according to whether they originated in composition biases of the sample, which affect its representativeness, or in response biases, which affect the accuracy of the measurements.

It has already been pointed out that the detectable biases in the composition by broad socio-economic groups of some samples would not result in differences greater than 4 per cent in the aggregate income; in other surveys this type of biases has an effect of even less significance on income estimates. Perhaps these distortions would eventually change somewhat the share of a quantile group in the global size distribution of income, without major consequences for the

/analysis, at

analysis, at that level of generality, that would justify the reweighting of the results by means of the composition by socio-economic groups which could eventually be considered more correct. This type of biases affect, on the other hand, income distribution by socio-economic groups, through more significant changes in the shares of some groups in population and in income. The correction required could be simple, however, so far as it will be possible to assume that these biases in the composition by broad socio-economic groups are not associated to biases in the internal composition of those groups. If this were to be what really happens, it would not be possible to correct the income distribution by socio-economic groups in any direct fashion and the distortions in the size distribution of those groups could have altogether even more serious implications than the ones mentioned on the overall distribution of income by size.

But, in accordance with the line of reasoning followed up to here, such biases in the internal composition of the groups could underlie together with response biases, the discrepancy margins observed in the aggregate and mean income measurements from surveys and censuses. To the extent in which these underestimates have been mainly determined by the first type of bias, the size distribution of the socio-economic groups would be seriously distorted and would be of little help, jointly or separately, for the analysis of income distribution. Throughout this paper we have been acquiring the feeling, however, that in most of the cases, the biases in the internal composition of the groups tend to the over-representation of middle strata, which brings about a moderate tendency to the over-estimation of the aggregate and mean incomes of the group. If this were actually so, the discrepancies indicative of underestimation would be determined, in most of the cases, by the more than offsetting effect of even more intense response biases.

/The manner

The manner in which these response biases - of diverse kinds - distort the size distribution of income of each socio-economic group belongs to the reign of untested hypothesis. Generally, it is implicitly assumed that under-reporting is a fixed proportion of the income recorded. It could also be assumed, more credibly, that it is an increasing proportion of this income. But there are reasons to assume that the response biases finally affect both ends of the income pyramid; in this paper a number of cases have been mentioned, with reference to different socio-economic groups, where under-valuation of income in the lower strata or the under-reporting of income in the higher strata appear as most likely.

But which ever hypothesis may be nearer to the truth, the fact that the magnitude of the under (or over) estimation of aggregate incomes is significantly different from one socio-economic group to another, invalidates the direct adjustment of the overall income distribution by size in accordance with the hypothesis chosen. This fact at the same time conditions the analysis of the relationships between the income distribution and other characteristics on the basis of the groups of the observed overall income distribution by size, for these are composed of units actually belonging to different income groups, which have turned out to be grouped together owing to measurement biases of different magnitudes.

Both the analysis and the eventual adjustments should be carried out for each broad socio-economic group; how broad are the groups to be considered depends ultimately on the way in which the data are found available. Owing to the marked discriminating line between the degrees of under-reporting in the groups of employees, on the one hand, and the groups of self-employed, on the other, it is at least necessary to carry out the analysis of the characteristics of the income distribution for each one of these two comprehensive groups. In the same way, any adjustment exercise aimed at correcting the overall income distribution by size should be carried out through the adjustment of size distributions of each socio-economic groups.

/As could

As could be noted already through the detailed analysis of results, the adjustment hypothesis more adequate for a specific group could not be so in the case of another group; even though the ultimate effect of the biases on the overall income distribution by size is most likely to underestimate income at both ends of the distribution, the biases that affect the lower strata are concentrated in some groups of recipients, whereas those that imply under-reporting in the higher strata can be found more concentrated in other socio-economic groups. This circumstance underlines, on the other hand, the necessity of having recourse to all the partial information available from other sources to figure out with a greater degree of likelihood which of the basic hypotheses indicated corresponds better to the actual distortions which could be present in the size distribution of income of each socio-economic group.

It is hoped that this elaborate piece of guesswork serve the purpose at least, of showing the risks involved in looking at the income distribution process through the concentration in the observed overall income distribution obtained from household surveys and population censuses, and the need for carrying out hypothesis testing and analysis of relationships through the size distribution of income of broad socio-economic groups. This approach to analysis is better adapted to the most reliable features of the data reviewed, as it only has to resort to the weaker assumption that underestimating biases in each socio-economic group may affect income estimates in that group, and their concentration, but does not significantly affect the array of units in the group according to income; that enables to treat each income group more as a class of an attribute than as an interval in a variable, taking advantage of the reliability of the results in respect of the other socio-economic characteristics of the income class, and beyond the not so firm reliability of income measurement.

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Annex A

ESTIMATES OF THE ECONOMICALLY ACTIVE POPULATION BY
OCCUPATIONAL STATUS AND KIND OF ACTIVITY,
BASED ON DEMOGRAPHIC CENSUSES

A comparison of the results of household surveys with those of demographic censuses and estimates of national accounts makes it necessary to convert the census data on the occupational structure of the labour force to bases comparable with the surveys and the estimates of macro-economic aggregates.

The estimate and analysis of the recent evolution of mean incomes by occupational groups in the main countries of Latin America also makes it a matter of necessity to have access to estimates of the labour force in each sector and occupational status which can be compared with the estimates of the income generated.

To satisfy both aims, and in view of the fact that reliable series were only available for a couple of countries, estimates were made on the basis of the ten-yearly demographic censuses; these reflected in approximate terms the evolution of the sectoral labour force during the period 1960-1972.

The general method applied in carrying out this work ^{1/} consisted in using as a basic source of data the population censuses for around 1960 and 1970, readaptating their sectoral classification and making interpolations for the intercensus years, or extrapolations based on the indicators available for each country.

The classification by kind of economic activity used in each case was brought into line with those given in the respective estimates of national accounts. It was necessary in some cases to reclassify census data for a specific year, to make it comparable with the previous census.

^{1/} Mrs. Mabel Bullemore was responsible for its implementation.

The censuses give a proportion of the population where the kind of activity or the occupational status is unspecified, or both of these. These classes were distributed in each case in proportion to the subtotal of the population with that specification. First the population whose activity was unspecified was distributed and then the population corresponding to an unspecified occupational status.

For Colombia and Chile the concept of employed population by kind of activity and occupational status was used, owing to the fact that in the former case the economically active population did not show the required disaggregation, and in the latter case the 1970 population census had considerable coverage deficiencies.

For the purpose of comparing the occupational structure of the household surveys with that of the demographic censuses, these estimates on a census basis are fairly adequate in so far as they include the re-classifications required to make the comparison and in so far as they are not calculated for a year too far removed from the census year which served as a base. This last does, however, occur in some of the cases considered.

These estimates also served to calculate mean earnings (Annex D), and conditioned the results of these estimates in so far as they represent medium-term trends instead of measurements of actual levels of employment and also in so far as the concepts of economically active population and employed population differ from the occupations.

The sources used to prepare each table of this Annex are detailed below.

Table A-1

Country: Argentina
Estimate years: 1970 and 1972
Basic source: (1) 1970 population census
(2) 1960 population census
Procedures: Proportional distribution of the unclassified and not clearly specified population, by kind of economic activity and by occupational status 1972. Projection base 1970 with average rates of variation for economic activity during the period 1960 to 1970.

Table A-2

Country: Brazil
Estimate years: 1970 and 1972
Basic source: (1) 1970 population census
(2) 1960 population census
Procedure: 1970. Readaptation of the economically active population by kind of activity, to make it comparable with 1960; proportional distribution of the unclassified and not clearly specified population. 1972. Projection base 1970 with average growth rates for economic activity during the period 1960 to 1970.

Table A-3

Country: Colombia
Estimate years: 1967 and 1970
Basic source: (1) Employment and the utilization of human resources in Latin America, Economic Bulletin for Latin America Nos. 1 and 2, 1973
(2) 1964 population census
(3) Trends and structure of the economy in Colombia
(4) CELADE, Population Projections
(5) Towards Full Employment, ILO, Geneva, 1970
(6) Colombia, Development Plan, December 1970
Procedure: Employed population by kind of activity 1960 and 1970 Source (1), unpublished figures. 1967 interpolated for economic activity. Occupational structure 1964 census, proportional distribution of unspecified population and population for which no data is available.
Note: The classification, employed population was used since it provided data by kind of economic activity.

Table A-4

Country: Costa Rica
Estimate years: 1966, 1967 and 1971
Basic source: (1) Population census 1-IV-63
(2) Situación y perspectivas del empleo, ILO, Geneva, 1972
(3) CELADE, Population projections
Procedure: 1967 occupational structure and kind of activity of the economically active population according to source (2), complemented by population census; 1966 - estimated according to variation in the economically active population 1963-1967 of 3.6 per cent annually, source (2); 1971 - estimated according to the variation in the economically active population 1967-1970 of 4.3 per cent annually, source (2); and kind of activity according to data for 1967.

Table A-5

Country: Chile
Estimate years: 1968 and 1971
Basic source: (1) "Balance de Población Ocupada por Sectores Económicos 1960-1970", ODEPLAN
(2) "Informe Económico Anual 1971", ODEPLAN
Procedure: The employed population in 1968 corresponds to that estimated in source (1), which used data from the 1960 census, household census and direct data for some sectors. It was not possible to make an interpolation between the censuses of 1960 and 1970 since the latter gave rise to some difficulties, particularly an underestimate of approximately 9 per cent.
1971 - Projection base 1970, with rates of sectoral variation and by occupational status according to source (2) and source (1).
Complemented by independent data for the agricultural and mining sectors.

Table A-6

Country: Mexico
Estimate years: 1968, 1969 and 1970
Basic source: (1) 1970 population census
(2) 1960 population census
(3) La medición de la población económicamente activa de México, 1950-1970, CEPAL/MEX/73/15
Procedure: The economically active remunerated population, by economic sector and occupational status for 1970 was obtained from source (3), which also gave comparable estimates for 1960. The years 1968 and 1969 were interpolated, thus obtaining the total and employee population by sectors.

Table A-7

Country: Panamá
Estimate years: 1970 and 1972
Basic source: (1) 1970 population census
(2) 1960 population census
Procedure: 1970. The activities not clearly specified were distributed proportionally among the different kinds of activity.
1972. Projection base 1970 of the total economically active population according to average growth 1960-1970. Distribution by kind of activity and occupational status in accordance with 1970.

Table A-8

Country: Peru
Estimate year: 1970
Basic source: (1) "La Población del Perú", CIGRED, Series. World Population Year, 1974
(2) Yearbook of Labour Statistics, ILO, 1973
(3) 1971 population census
Procedure: The economically active population by kind of activity for the year 1970 was obtained from source (1). The disaggregation by occupational status was estimated according to the proportions for 1967, the official estimate presented in source (2) and compared with source (3).

Table A-9

Country: Dominican Republic
Estimate year: 1970
Basic source: Statistical Yearbook, ILO, 1973
Procedure: The economically active population was obtained from the source indicated by kind of activity and occupational status according to the population census of 9 January 1970.^{1/} Activities not clearly specified were distributed proportionally among the different kind of activity.

Table A-10

Country: Uruguay
Estimate years: 1967-1968
Basic source: (1) Yearbook of Labour Statistics, ILO, 1973
(2) CELADE, Boletín Demográfico Nº 13, January 1974
(3) Rates of activity, CELADE estimate
Procedure: Source (2) provides estimates of the total population for the years 1967 and 1968. To obtain the economically active population, the rates of activity estimated by CELADE were applied. From source (1) the economically active population was obtained by kind of activity and occupational status according to the census of 16 October 1963. The status not clearly defined were estimated and then distributed proportionally as were also the activities not clearly specified, thus determining the structure applied to the total economically active population, previously estimated for 1967 and 1968.

^{1/} Provisional figures.

Table A-11

| | |
|-----------------|---|
| Country: | Venezuela |
| Estimate years: | 1970 and 1971 |
| Basic source: | (1) 1961 population census (2) Statistical yearbook 1972, Venezuela, provisional figures 1971 census |
| Procedure: | The preliminary estimates of the economically active population by kind of activity of the 1971 population census, were obtained from source (2). The economically active population by kind of activity for 1970 was estimated according to the average growth between 1961 and 1971. To obtain the economically active population by occupational status, the structure by kind of activity of the 1961 census was applied in 1970 and 1971, following the proportional distribution of the activities not clearly specified and of the occupational status not clearly defined. |
| Note: | The sector hydrocarbons and mining and quarrying shows a decrease in the economically active population between the 1961 and 1971 censuses. |

Table A-1

ARGENTINA: ECONOMICALLY ACTIVE POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS
(Thousands of persons)

| Kind of economic activity | Occupational status | | | | |
|---|---------------------|----------------|--------------|---------------------|-----------------------|
| | Total | Employee | Employer | Own-account workers | Unpaid family workers |
| <u>1970</u> | | | | | |
| 1. Agriculture, forestry, hunting and fishing | 1 455.5 | 783.3 | 129.3 | 352.1 | 190.8 |
| 2. Mining and quarrying | 70.7 | 69.2 | 1.4 | - | 0.1 |
| 3. Manufacturing | 1 911.0 | 1 590.3 | 96.6 | 203.2 | 20.9 |
| 4. Construction | 781.4 | 593.8 | 29.5 | 149.9 | 8.2 |
| 5. Electricity, gas and water | 126.4 | 125.0 | 0.3 | 1.0 | 0.1 |
| 6. Transport, storage and communications | 655.5 | 523.6 | 31.5 | 95.4 | 5.0 |
| 7. Commerce, restaurants and hotels | 1 431.8 | 754.3 | 188.0 | 450.7 | 38.8 |
| 8. Financial establishments | 292.3 | 232.3 | 17.3 | 41.5 | 1.2 |
| 9. Government and defence | 604.7 | 602.5 | 0.6 | 1.3 | 0.3 |
| 10. Social and other services | 1 682.1 | 1 394.7 | 38.6 | 219.8 | 29.0 |
| <u>Total</u> | <u>2 011.4</u> | <u>6 669.0</u> | <u>533.1</u> | <u>1 514.2</u> | <u>294.4</u> |
| <u>Metropolitan area</u> | | | | | |
| 1. Agriculture, forestry, hunting and fishing | 37.0 | 21.7 | 6.7 | 6.3 | 2.3 |
| 2. Mining and quarrying | | | | | |
| 3. Manufacturing | 1 122.7 | 973.5 | 56.0 | 87.0 | 6.2 |
| 4. Electricity, gas and water | 314.7 | 232.7 | 12.6 | 66.4 | 3.0 |
| 5. Construction | 786.5 | 476.6 | 100.7 | 198.9 | 10.3 |
| 6. Commerce and financial establishments | 251.3 | 204.0 | 10.7 | 36.0 | 0.8 |
| 7. Transport, storage and communications | 873.6 | 750.7 | 17.8 | 93.2 | 11.9 |
| 8. Services | | | | | |
| <u>Total</u> | <u>2 385.8</u> | <u>2 659.2</u> | <u>204.5</u> | <u>487.8</u> | <u>34.3</u> |
| <u>1972</u> | | | | | |
| 1. Agriculture, forestry, hunting and fishing | 1 452.6 | 791.1 | | 461.8 | 199.7 |
| 2. Mining and quarrying | 77.5 | 75.4 | | 2.0 | 0.1 |
| 3. Manufacturing | 1 914.8 | 1 590.3 | | 302.6 | 21.9 |
| 4. Construction | 863.4 | 657.3 | | 197.5 | 8.6 |
| 5. Electricity, gas and water | 134.6 | 133.4 | | 1.1 | 0.1 |
| 6. Transport, storage and communications | 672.5 | 529.9 | | 137.4 | 5.2 |
| 7. Commerce and financial establishments | 1 918.9 | 1 118.8 | | 758.2 | 41.9 |
| 8. Services | 2 424.0 | 2 115.0 | | 278.3 | 30.7 |
| <u>Total</u> | <u>2 486.3</u> | <u>7 011.2</u> | | <u>2 138.9</u> | <u>308.2</u> |

a/ Population 10 years of age and over.

Table A-2

BRAZIL: ECONOMICALLY ACTIVE POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS ^{a/}
(Thousands of persons)

| Kind of economic activity | Occupational status | | | | |
|--|---------------------|---------------|------------|---------------------|-----------------------|
| | Total | Employee | Employer | Own-account workers | Unpaid family workers |
| | <u>1970</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 13 200 | 3 433 | 209 | 6 970 | 2 588 |
| 2. Mining and quarrying | | | | | |
| 3. Manufacturing | 5 435 | 4 665 | 104 | 644 | 22 |
| 4. Construction | | | | | |
| 5. Electricity, gas, water and sanitary services | | | | | |
| 6. Commerce, banks, insurance and real estate | 2 749 | 1 694 | 88 | 943 | 24 |
| 7. Transport and communications | 1 274 | 1 005 | 7 | 258 | 4 |
| 8. Services | 6 680 | 5 406 | 37 | 1 180 | 57 |
| Seeking work for first time | 219 | | | | 219 |
| Total | 29 557 | 16 203 | 445 | 9 995 | 2 914 |
| | <u>1972</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 13 517 | 3 516 | 214 | 7 137 | 2 650 |
| 2. Mining and quarrying | | | | | |
| 3. Manufacturing | 5 946 | 5 104 | 114 | 704 | 24 |
| 4. Construction | | | | | |
| 5. Electricity, gas, water and sanitary services | | | | | |
| 6. Commerce, banks, insurance and real estate | 2 980 | 1 836 | 96 | 1 022 | 26 |
| 7. Transport and communications | 1 307 | 1 031 | 7 | 265 | 4 |
| 8. Services | 7 268 | 5 882 | 40 | 1 284 | 62 |
| Seeking work for first time | 165 | | | | 165 |
| Total | 31 183 | 17 369 | 471 | 10 412 | 2 931 |

^{a/} Population of 10 years of age and over.

Table A-3

COLOMBIA: EMPLOYED POPULATION KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS

(Thousands of persons)

| Kind of economic activity | Occupational status | | | | |
|--|---------------------|--------------|------------|---------------------|-----------------------|
| | Total | Employee | Employer | Own-account workers | Unpaid family workers |
| | <u>1967</u> | | | | |
| 1. Agriculture | 2 376 | 1 014 | 300 | 706 | 356 |
| 2. Mining and quarrying | 72 | 42 | 1 | 21 | 8 |
| 3. Manufacturing | 827 | 552 | 44 | 209 | 22 |
| 4. Construction | 251 | 199 | 6 | 44 | 2 |
| 5. Electricity, gas and water | 32 | 30 | 1 | 1 | ... |
| 6. Transport, storage and communications | 229 | 174 | 9 | 44 | 2 |
| 7. Commerce | 451 | 163 | 44 | 230 | 14 |
| 8. Banks insurance and real estate | 95 | 86 | 2 | 7 | ... |
| 9. Services | 958 | 855 | 21 | 76 | 6 |
| <u>Total</u> | <u>5 291</u> | <u>3 115</u> | <u>428</u> | <u>1 338</u> | <u>410</u> |
| | <u>1970</u> | | | | |
| 1. Agriculture | 2 456 | 1 048 | 310 | 730 | 368 |
| 2. Mining and quarrying | 75 | 45 | 1 | 21 | 8 |
| 3. Manufacturing | 901 | 602 | 47 | 227 | 25 |
| 4. Construction | 276 | 220 | 6 | 48 | 2 |
| 5. Electricity, gas and water | 35 | 33 | 1 | 1 | ... |
| 6. Transport, storage and communications | 256 | 195 | 9 | 50 | 2 |
| 7. Commerce | 526 | 191 | 50 | 268 | 17 |
| 8. Banks, insurance and real estate | 110 | 101 | 2 | 7 | ... |
| 9. Services | 1 117 | 998 | 24 | 88 | 7 |
| <u>Total</u> | <u>5 752</u> | <u>3 433</u> | <u>450</u> | <u>1 440</u> | <u>429</u> |

Table A-4

COSTA RICA: ECONOMICALLY ACTIVE POPULATION BY KIND OF
ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS

(Thousands of persons)

| Kind of economic activity | Occupational status | | | |
|---|---------------------|--------------|-------------------|-----------------------------|
| | Total | Employee | Self- employer | Unpaid family workers |
| <u>1966</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 210.8 | 119.5 | 57.5 | 33.8 |
| 2. Mining | 1.3 | 1.0 | 0.2 | 0.1 |
| 3. Manufacturing | 52.6 | 38.6 | 12.5 | 1.5 |
| 4. Construction | 27.0 | 25.3 | 1.5 | 0.2 |
| 5. Electricity, gas, water and sanitary services | 5.0 | 4.9 | 0.1 | ... |
| 6. Commerce, financial establishments | 50.1 | 30.1 | 17.6 | 2.4 |
| 7. Transport, storage and communications | 19.1 | 16.2 | 2.6 | 0.3 |
| 8. Services | 81.2 | 75.3 | 4.6 | 1.3 |
| Seeking work for first time | 6.9 | | | |
| <u>Total</u> | <u>454.0</u> | <u>310.2</u> | <u>96.6</u> | <u>39.6</u> |
| <u>1967</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 214.4 | 121.6 | 58.5 | 34.3 |
| 2. Mining | 1.3 | 1.0 | 0.2 | 0.1 |
| 3. Manufacturing | 54.8 | 40.2 | 13.0 | 1.6 |
| 4. Construction | 28.1 | 26.3 | 1.6 | 0.2 |
| 5. Electricity, gas, water and sanitary services | 5.2 | 5.1 | 0.1 | ... |
| 6. Commerce, financial establishments | 54.4 | 32.7 | 19.1 | 2.6 |
| 7. Transport, storage and communications | 20.8 | 17.6 | 2.9 | 0.3 |
| 8. Services | 88.7 | 82.3 | 5.0 | 1.4 |
| Seeking work for first time | 3.3 | | | |
| <u>Total</u> | <u>471.0</u> | <u>326.8</u> | <u>100.4</u> | <u>40.5</u> |
| <u>1971</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 229.3 | 130.0 | 62.6 | 36.7 |
| 2. Mining | 1.4 | 1.1 | 0.2 | 0.1 |
| 3. Manufacturing | 64.3 | 47.2 | 15.2 | 1.9 |
| 4. Construction | 32.7 | 30.6 | 1.9 | 0.2 |
| 5. Electricity, gas, water and sanitary services | 6.1 | 5.9 | 0.2 | ... |
| 6. Commerce, financial establishments | 73.6 | 44.2 | 25.9 | 3.5 |
| 7. Transport, storage and communications | 28.0 | 23.7 | 3.9 | 0.4 |
| 8. Services | 120.0 | 111.3 | 6.8 | 1.9 |
| Seeking work for first time | 2.6 | | | |
| <u>Total</u> | <u>558.0</u> | <u>394.0</u> | <u>116.7</u> | <u>44.7</u> |

Table A-5

CHILE: EMPLOYED POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS
(Thousands of persons)

| Kind of economic activity | Occupational status | | | | |
|---|---------------------|----------------|-------------|---------------------|-----------------------|
| | Total | Employee | Employer | Own-account workers | Unpaid family workers |
| | <u>1968</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 715.8 | 394.7 | 10.3 | 202.5 | 108.3 |
| 2. Mining | 94.5 | 89.6 | 1.0 | 3.6 | 0.3 |
| 3. Manufacturing | 544.6 | 394.8 | 9.3 | 129.6 | 10.9 |
| 4. Construction | 168.5 | 136.6 | 1.2 | 28.5 | 2.2 |
| 5. Electricity, gas and water | 11.8 | 11.8 | a/ | a/ | - |
| 6. Commerce, financial establishments | 364.0 | 165.2 | 12.1 | 155.6 | 31.1 |
| 7. Transport, storage and communications | 161.8 | 125.3 | 6.4 | 30.0 | 0.1 |
| 8. Services | 698.4 | 579.3 | 6.5 | 102.3 | 10.3 |
| <u>Total</u> | <u>2 759.4</u> | <u>1 897.3</u> | <u>46.8</u> | <u>652.1</u> | <u>163.2</u> |
| | <u>1971</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 654.6 | 438.6 | | 148.0 | 68.0 |
| 2. Mining | 106.5 | 101.2 | | 4.8 | 0.5 |
| 3. Manufacturing | 602.9 | 455.9 | | 140.3 | 6.7 |
| 4. Construction | 198.3 | 168.3 | | 29.5 | 0.5 |
| 5. Electricity, gas and water | 12.7 | 12.7 | | a/ | - |
| 6. Commerce, financial establishments | 431.7 | 173.2 | | 219.9 | 38.6 |
| 7. Transport, storage and communications | 184.6 | 146.6 | | 38.0 | - |
| 8. Services | 766.3 | 630.4 | | 125.4 | 10.5 |
| <u>Total</u> | <u>2 957.6</u> | <u>2 126.9</u> | | <u>705.9</u> | <u>124.8</u> |

a/ Figure less than 50 persons.

Table A-6

MEXICO: ECONOMICALLY ACTIVE REMUNERATED POPULATION BY
KIND OF ACTIVITY AND OCCUPATIONAL STATUS

(Thousands of persons)

| Kind of economic activity | Occupational status | | |
|--------------------------------|---------------------|----------------|------------------------------|
| | Total | Employee | Entrepreneurs and farmers |
| | <u>1968</u> | | |
| 1. Agriculture | 4 691.5 | 2 476.1 | 2 215.4 |
| 2. Mining, energy and industry | 2 488.3 | 1 994.5 | 493.8 |
| 3. Construction | 552.0 | 455.5 | 96.5 |
| 4. Commerce and finance | 1 244.9 | 625.2 | 619.7 |
| 5. Other services | 2 537.7 | 2 034.4 | 503.3 |
| <u>Total</u> | <u>11 514.4</u> | <u>7 582.7</u> | <u>3 928.7</u> |
| | <u>1969</u> | | |
| 1. Agriculture | 4 710.3 | 2 513.6 | 2 196.5 |
| 2. Mining, energy and industry | 2 611.7 | 2 081.9 | 529.8 |
| 3. Construction | 574.4 | 469.6 | 104.8 |
| 4. Commerce and finance | 1 269.0 | 663.0 | 606.0 |
| 5. Other services | 2 640.7 | 2 093.0 | 547.7 |
| <u>Total</u> | <u>11 806.1</u> | <u>7 821.2</u> | <u>3 984.8</u> |
| | <u>1970</u> | | |
| 1. Agriculture | 4 729.2 | 2 552.1 | 2 177.1 |
| 2. Mining, energy and industry | 2 740.5 | 2 173.2 | 567.3 |
| 3. Construction | 597.7 | 484.1 | 113.6 |
| 4. Commerce and finance | 1 293.6 | 703.1 | 590.5 |
| 5. Other services | 2 747.9 | 2 142.3 | 605.6 |
| <u>Total</u> | <u>12 108.9</u> | <u>8 054.8</u> | <u>4 054.1</u> |

Table A-7

PANAMA: ECONOMICALLY ACTIVE POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS ^{a/}
(Thousands of persons)

| Kind of economic activity | Occupational status | | | |
|--|---------------------|--------------|--------------|--|
| | Total | Employee | Employer | Own-account workers Unpaid family workers |
| | <u>1970</u> | | | |
| 1. Agriculture, forestry, hunting and fishing | 189.5 | 39.4 | 128.1 | 22.0 |
| 2. Mining and quarrying | 0.7 | 0.5 | 0.1 | 0.1 |
| 3. Manufacturing | 39.1 | 29.5 | 9.0 | 0.6 |
| 4. Construction | 28.1 | 22.0 | 6.1 | - |
| 5. Electricity, gas and water | 4.2 | 4.2 | - | - |
| 6. Transport, storage and communications | 17.0 | 10.0 | 6.9 | 0.1 |
| 7. Commerce, financial establishments, real estate | 68.1 | 51.3 | 15.3 | 1.5 |
| 8. Other services | 102.0 | 90.4 | 11.4 | 0.2 |
| 9. Canal Zone | 22.6 | 22.5 | 0.1 | - |
| Seeking work for first time | 17.1 | | | |
| <u>Total</u> | <u>488.4</u> | <u>269.8</u> | <u>177.0</u> | <u>24.5</u> |
| | <u>1972</u> | | | |
| 1. Agriculture, forestry, hunting and fishing | 204.1 | 42.4 | 138.0 | 23.7 |
| 2. Mining and quarrying | 0.8 | 0.6 | 0.1 | 0.1 |
| 3. Manufacturing | 42.1 | 31.8 | 9.7 | 0.6 |
| 4. Construction | 30.3 | 23.7 | 6.6 | - |
| 5. Electricity, gas and water | 4.5 | 4.5 | - | - |
| 6. Transport, storage and communications | 18.3 | 10.8 | 7.4 | 0.1 |
| 7. Commerce, financial establishments, real estate | 73.3 | 55.2 | 16.5 | 1.6 |
| 8. Other services | 109.9 | 97.4 | 12.3 | 0.2 |
| 9. Canal Zone | 24.3 | 24.2 | 0.1 | - |
| Seeking work for first time | 18.4 | | | |
| <u>Total</u> | <u>526.0</u> | <u>290.6</u> | <u>190.7</u> | <u>26.3</u> |

^{a/} Population 10 years of age and over.

Table A-8

PERU: ECONOMICALLY ACTIVE POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS
(Thousands of persons)

| Kind of economic activity | Occupational status | | | | |
|---|---------------------|----------------|----------|---------------------|-----------------------|
| | Total | Employee | Employer | Own-account workers | Unpaid family workers |
| | <u>1970</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 1 967.4 | 635.3 | | 1 003.5 | 328.6 |
| 2. Mining and quarrying | 82.7 | 80.8 | | 1.9 | ... |
| 3. Manufacturing | 634.1 | 353.1 | | 266.4 | 14.6 |
| 4. Construction | 130.3 | 103.3 | | 26.7 | 0.3 |
| 5. Electricity, gas and water | 12.5 | 12.4 | | 0.1 | ... |
| 6. Commerce and financial establishments | 477.6 | 180.9 | | 283.1 | 13.6 |
| 7. Transport, storage and communications | 164.1 | 113.1 | | 50.6 | 0.4 |
| 8. Services | 752.9 | 687.8 | | 62.5 | 2.6 |
| Seeking work for first time | 47.1 | | | | |
| <u>Total</u> | <u>4 268.7</u> | <u>2 166.7</u> | | <u>1 694.8</u> | <u>360.1</u> |

Table A-9

DOMINICAN REPUBLIC: ECONOMICALLY ACTIVE POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS ^{a/}
(Thousands of persons)

| Kind of economic activity | Occupational status | | | | |
|--|---------------------|--------------|----------|---------------------|-----------------------|
| | Total | Employee | Employer | Own-account workers | Unpaid family workers |
| | <u>1970</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 669.0 | 164.8 | | 229.7 | 274.5 |
| 2. Mining and quarrying | 1.1 | 0.4 | | 0.2 | 0.5 |
| 3. Manufacturing | 124.9 | 72.3 | | 23.0 | 29.6 |
| 4. Construction | 35.3 | 13.1 | | 9.2 | 13.0 |
| 5. Electricity, gas, water and sanitary services | 2.1 | 1.6 | | 0.1 | 0.4 |
| 6. Commerce, financial establishments | 97.0 | 26.2 | | 44.6 | 26.2 |
| 7. Transport, storage and communications | 57.3 | 23.0 | | 15.2 | 19.1 |
| 8. Services | 210.8 | 153.0 | | 20.7 | 37.1 |
| Seeking work for first time | 127.2 | | | | |
| <u>Total</u> | <u>1 324.7</u> | <u>454.4</u> | | <u>242.7</u> | <u>400.4</u> |

^{a/} Population 10 years of age and over.

Table A-10

URUGUAY: ECONOMICALLY ACTIVE POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS
(Thousands of persons)

| Kind of economic activity | Occupational status | | | | |
|--|---------------------|--------------|----------|---------------------|-----------------------|
| | Total | Employee | Employer | Own-account workers | Unpaid family workers |
| | <u>1967</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 206.7 | 113.2 | | 78.7 | 14.8 |
| 2. Mining and quarrying | 2.7 | 2.3 | | 0.4 | ... |
| 3. Manufacturing | 240.9 | 181.2 | | 58.8 | 0.9 |
| 4. Construction | 62.6 | 50.5 | | 12.0 | 0.1 |
| 5. Electricity, gas, water and sanitary services | 18.5 | 18.5 | | a/ | ... |
| 6. Commerce, financial establishments | 145.6 | 95.2 | | 48.6 | 1.8 |
| 7. Transport and communications | 66.0 | 55.0 | | 10.9 | 0.1 |
| 8. Services | 317.1 | 268.8 | | 47.8 | 0.5 |
| Seeking work for first time | 21.3 | | | | |
| <u>Total</u> | <u>1 081.4</u> | <u>784.7</u> | | <u>257.2</u> | <u>18.2</u> |
| | <u>1968</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 209.2 | 114.6 | | 79.7 | 14.9 |
| 2. Mining and quarrying | 2.7 | 2.3 | | 0.4 | ... |
| 3. Manufacturing | 243.7 | 183.3 | | 59.5 | 0.9 |
| 4. Construction | 63.4 | 51.1 | | 12.2 | 0.1 |
| 5. Electricity, gas, water and sanitary services | 18.7 | 18.7 | | a/ | ... |
| 6. Commerce, financial establishments | 147.3 | 96.3 | | 49.2 | 1.8 |
| 7. Transport and communications | 66.8 | 55.7 | | 11.0 | 0.1 |
| 8. Services | 320.8 | 271.9 | | 48.3 | 0.6 |
| Seeking work for first time | 21.6 | | | | |
| <u>Total</u> | <u>1 094.2</u> | <u>793.2</u> | | <u>260.3</u> | <u>18.4</u> |

a/ Figure of less than 50 persons.

Table A-11

VENEZUELA: ECONOMICALLY ACTIVE POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS ^{a/}
(Thousands of persons)

| Kind of economic activity | Occupational status | | | | |
|--|---------------------|----------------|--------------|---------------------|-----------------------|
| | Total | Employee | Employer | Own-account workers | Unpaid family workers |
| | <u>1970</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 727.8 | 249.5 | 20.5 | 366.9 | 90.9 |
| 2. Hydrocarbons and mining and quarrying | 46.3 | 44.4 | 0.3 | 1.6 | 0.0 |
| 3. Manufacturing | 453.6 | 313.0 | 15.3 | 122.4 | 2.9 |
| 4. Construction | 181.1 | 134.2 | 3.9 | 42.5 | 0.5 |
| 5. Electricity, gas, water and sanitary services | 38.2 | 37.7 | 0.2 | 0.3 | 0.0 |
| 6. Commerce, financial establishments | 430.3 | 221.3 | 24.7 | 178.4 | 5.9 |
| 7. Transport and communications | 144.0 | 93.1 | 1.6 | 49.2 | 0.1 |
| 8. Services | 873.5 | 784.7 | 12.2 | 74.8 | 1.8 |
| Seeking work for first time | 44.5 | | | | |
| Total | 2 939.2 | 1 877.2 | 78.7 | 836.1 | 102.1 |
| | <u>1971</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 721.3 | 247.3 | 363.7 | 20.3 | 90.0 |
| 2. Hydrocarbons and mining and quarrying | 45.2 | 43.4 | 1.5 | 0.3 | 0.0 |
| 3. Manufacturing | 475.5 | 328.1 | 128.3 | 16.1 | 3.0 |
| 4. Construction | 187.1 | 138.6 | 43.9 | 4.0 | 0.6 |
| 5. Electricity, gas, water and sanitary services | 40.1 | 39.6 | 0.3 | 0.2 | 0.0 |
| 6. Commerce, financial establishments | 446.9 | 229.8 | 185.3 | 25.7 | 6.1 |
| 7. Transport and communications | 146.5 | 94.7 | 50.0 | 1.6 | 0.2 |
| 8. Services | 915.6 | 822.5 | 78.5 | 12.7 | 1.9 |
| Seeking work for first time | 36.5 | | | | |
| Total | 3 014.7 | 1 944.0 | 851.5 | 80.9 | 101.8 |

^{a/} Population of 15 years of age and over.

Table A-12
ARGENTINA: REMUNERATED OCCUPATIONS OF EMPLOYEE BY KIND OF ECONOMIC ACTIVITY
(Thousands of persons)

| Kind of economic activity | Years | |
|--|----------------|----------------|
| | 1970 | 1972 |
| 1. Agriculture, forestry, hunting and fishing | 1 113.2 | 978.2 |
| 2. Mining and quarrying | 56.2 | 62.9 |
| 3. Manufacturing | 1 732.2 | 1 949.3 |
| 4. Construction | 609.2 | 621.8 |
| 5. Electricity, gas and water | 77.2 | 90.9 |
| 6. Transport, storage and communications | 552.3 | 558.9 |
| 7. Commerce | 747.3 | 824.4 |
| 8. Other services and financial establishments | 1 828.8 | 1 900.4 |
| <u>Total</u> | <u>6 716.4</u> | <u>6 986.8</u> |

Table A-13

BRAZIL: EMPLOYED POPULATION BY KIND OF ECONOMIC ACTIVITY^{a/}
(Thousands of employees)

| Kind of economic activity | Years | |
|---|---------------|---------------|
| | 1970 | 1972 |
| 1. Agriculture, forestry, hunting and fishing | 3 424 | 3 506 |
| 2. Mining and quarrying | 4 589 | 5 021 |
| 3. Manufacturing | | |
| 4. Construction | | |
| 5. Electricity, gas and water | | |
| 6. Commerce, banks, insurance and real estate | 1 678 | 1 819 |
| 7. Transport and communications | 993 | 1 010 |
| 8. Services | 5 258 | 5 721 |
| <u>Total</u> | <u>15 942</u> | <u>17 086</u> |

a/ Obtained from unemployment data from the 1970 population census, applied to estimates of employees in the economically active population.

Table A-14

VENEZUELA: ECONOMICALLY ACTIVE POPULATION BY KIND OF ECONOMIC ACTIVITY AND OCCUPATIONAL STATUS
(Thousands of persons)

| Kind of economic activity | Occupational status | | | |
|--|---------------------|--------------|---------------|-----------------------|
| | Total | Employee | Self-employed | Unpaid family workers |
| <u>1970</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 646 | 228 | 288 | 130 |
| 2. Hydrocarbons and mining and quarrying | 60 | 56 | 4 | - |
| 3. Manufacturing | 561 | 420 | 132 | 9 |
| 4. Construction | 146 | 91 | 53 | 2 |
| 5. Electricity, gas, water and sanitary services | 45 | 45 | - | - |
| 6. Commerce, financial establishments | 562 | 259 | 258 | 45 |
| 7. Transport and communications | 200 | 128 | 71 | 3 |
| 8. Services | 799 | 687 | 97 | 15 |
| Unemployed | 194 | | | |
| <u>Total</u> | <u>2 213</u> | <u>1 912</u> | <u>203</u> | <u>204</u> |
| <u>1971</u> | | | | |
| 1. Agriculture, forestry, hunting and fishing | 655 | 229 | 297 | 129 |
| 2. Hydrocarbons and mining and quarrying | 55 | 52 | 3 | - |
| 3. Manufacturing | 573 | 423 | 137 | 13 |
| 4. Construction | 186 | 123 | 59 | 4 |
| 5. Electricity, gas, water and sanitary services | 45 | 45 | - | - |
| 6. Commerce, financial establishments | 584 | 287 | 255 | 42 |
| 7. Transport and communications | 211 | 136 | 71 | 4 |
| 8. Services | 806 | 703 | 91 | 12 |
| Unemployed | 192 | | | |
| <u>Total</u> | <u>2 307</u> | <u>1 988</u> | <u>213</u> | <u>204</u> |

Source: Central Bank of Venezuela: Informe económico 1971. The occupational status in each kind of activity were estimated according to the household sampling survey for 1970 and 1971.

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Annex B
OFFICIAL TAXABLE ESTIMATES OF THE INCOME OF HOUSEHOLDS AND PRIVATE NON PROFIT INSTITUTIONS^{a/}
(Millions of national currency)

| Country | Years | Total household income | Remuneration of employees b/ | Income from property and enterprises | | | | |
|---------------------|-------|------------------------|---------------------------------|--------------------------------------|------------------------------|-----------------------|----------------------------------|----------------------------|
| | | | | Subtotal | Entrepreneurial income c/ | Property income d/ | Less interest on consumers' debt | Current transfers received |
| <u>Argentina</u> e/ | 1970 | 7 943.1 | 3 885.8 | 3 507.9 | 2 627.4 | 880.5 | ... | 549.4 |
| <u>Colombia</u> | 1967 | 65 806.6 | 31 049.3 | 33 382.7 | ... | ... | ... | 1 374.6 |
| | 1970 | 101 854.1 | 48 745.8 | 50 202.4 | ... | ... | ... | 2 905.9 |
| <u>Chile</u> | 1968 | 35 087.0 | 18 707.0 | 12 011.0 ^{f/} | 10 833.0 | 1 671.4 | 118.0 | 4 369.0 |
| <u>Honduras</u> | 1967 | 936.4 | 464.0 | 464.5 | 387.3 | 79.9 | 2.7 | 7.9 |
| <u>Panamá</u> | 1970 | 759.5 | 490.2 ^{g/} | 223.6 | 187.2 | 36.4 | ... | 45.7 |
| | 1972 | 915.7 | 609.7 ^{g/} | 251.6 | 189.6 | 62.0 | ... | 54.4 |
| <u>Uruguay</u> | 1967 | 149 077.0 | 80 119.0 | 54 554.0 | 49 557.0 | 4 997.0 | ... | 14 404.0 |
| <u>Venezuela</u> h/ | 1968 | 24 933.0 | 16 681.0 | 8 488.0 ^{i/} | ... | ... | 236 | - |
| | 1970 | 27 882.0 | 19 125.0 | 9 043.0 ^{i/} | ... | ... | 286 | - |

a/ According to the recommendations of the previous System of National Accounts (51).

b/ Including: Wages and salaries plus employers' contributions to social security.

c/ According to information given in Annex D.

d/ Obtained as balancing item.

e/ Figures in thousands of millions of pesos.

f/ Excluding: part of direct taxation on personal enterprises estimated at E^o 375.4 million, not included in the account of persons and private non-profit institutions.

g/ According to estimates of the remuneration of employees given in Annex C.

h/ According to the recommendations of the SNA, Rev. 3, first estimate.

i/ Partly excluding quasi-corporate and personal enterprises

Annex C

ESTIMATES OF PRIMARY INCOME GENERATED IN
EACH SECTOR OF ECONOMIC ACTIVITY

The analysis of income distribution in the countries of Latin America required to systematize the official estimates on the functional distribution of income generated in each sector, to revise their consistency and to fill the existing gaps with our own estimates, in so far as this practice was both feasible and sound. With this in view, the paper, Estimates of the Functional Distribution of Income Generated by Sectors of Economic Activity 1960-1972, E/CEPAL/L.115/12, was published.

The statistics in this annex were taken from this paper, which indicates in detail the sources and procedures adopted in each case.

Table C-1

ARGENTINA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1970

(Thousands of millions of pesos) ^{a/}

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 1 058.2 | 342.9 | 337.7 | 5.2 | 715.3 | 59.7 | 655.6 |
| Mining and quarrying | 139.7 | 58.9 | 52.0 | 6.9 | 80.8 | 27.0 | 53.8 |
| Manufacturing | 2 648.7 | 1 168.1 | 1 081.6 | 86.5 | 1 480.6 | 169.6 | 1 311.0 |
| Construction | 457.9 | 393.9 | 375.9 | 18.0 | 64.0 | 15.2 | 48.8 |
| Electricity, gas, water and sanitary services | 220.8 | 116.8 | 104.0 | 12.8 | 104.0 | 32.0 | 72.0 |
| Transport, storage and communications | 784.9 | 407.4 | 374.9 | 32.5 | 377.5 | 101.6 | 275.9 |
| Commerce, financial establishments, real estate | 1 541.9 | 468.6 | 419.3 | 49.3 | 1 073.3 | 53.3 | 1 020.0 |
| Dwellings | 161.4 | 11.5 | 11.5 | - | 149.9 | 37.3 | 112.6 |
| Other services | 1 434.4 | 917.7 | 841.7 | 76.0 | 516.7 | 18.5 | 498.2 |
| Total | 8 447.2 | 3 885.8 | 3 598.6 | 287.2 | 4 562.1 | 514.2 | 4 047.9 |

^{a/} Expressed in old pesos (prior to the adoption of law 18 188).

Table C-2
 BRAZIL: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1970
 (Millions of cruzeiros)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees ^a | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|--|----------------------|------------------------|-------------------------|---------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 25 082 | 10 231 | 10 133 | 98 | 14 851 | 904 | 13 947 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing ^{a/} | 59 319 | 20 717 | 19 666 | 1 051 | 38 602 | 5 215 | 33 387 |
| Construction | ... | ... | ... | ... | ... | ... | ... |
| Electricity, gas, water and sanitary services | ... | ... | ... | ... | ... | ... | ... |
| Transport, storage and communications | 10 313 | 5 141 | 4 827 | 314 | 5 172 | 1 441 | 3 731 |
| Commerce, financial establishments, real estate | 38 232 | 40 364 ^{b/} | 38 162 ^{b/} | 2 202 ^{b/} | 25 479 ^{b/} | 886 | 24 593 ^{b/} |
| Dwellings | 14 969 | - | - | - | 14 969 | 1 533 | 13 436 |
| Other services | 27 611 | ... | ... | ... | ... | 251 | ... |
| Total | 175 526 | 76 453 | 72 738 | 3 665 | 99 073 | 10 230 | 88 843 |

^{a/} Including: Mining and quarrying, construction, electricity, gas, water and sanitary services.
^{b/} Including: Other services.

Table C-2
 BRAZIL: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1972
 (Millions of cruzeiros)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|----------------------|------------------------|-------------------------|---------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 45 292 | 15 486 | 15 338 | 148 | 29 806 | 1 628 | 28 178 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing ^{a/} | 102 822 | 34 505 | 32 753 | 1 752 | 68 317 | 9 038 | 59 279 |
| Construction | ... | ... | ... | ... | ... | ... | ... |
| Electricity, gas, water and sanitary services | ... | ... | ... | ... | ... | ... | ... |
| Transport, storage and communications | 18 439 | 7 870 | 7 422 | 448 | 10 569 | 2 570 | 7 999 |
| Commerce, financial establishments, real estate | 69 148 | 65 613 ^{b/} | 62 034 ^{b/} | 3 579 ^{b/} | 50 061 ^{b/} | 1 597 | 48 044 ^{b/} |
| Dwellings | 24 761 | - | - | - | 24 761 | 2 528 | 22 233 |
| Other services | 46 526 | ... | ... | ... | ... | 420 | ... |
| Total | 306 988 | 123 474 | 117 547 | 5 227 | 183 514 | 17 781 | 165 733 |

^{a/} Including: Mining and quarrying, construction, electricity, gas, water and sanitary services.
^{b/} Including: Other services.

Table C-3
COLOMBIA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1966

(Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|----------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 20 742.9 | 6 674.7 | 6 643.4 | 31.3 | 14 068.2 | 1 203.1 | 12 865.1 |
| Mining and quarrying | 1 468.3 | 573.9 | 554.5 | 19.4 | 894.4 | 110.3 | 724.1 |
| Manufacturing | 12 357.8 | 4 674.0 | 4 580.9 | 93.1 | 7 683.0 | 1 254.2 | 6 428.8 |
| Construction | 2 832.6 | 2 141.2 | 2 113.6 | 27.6 | 691.4 | 246.4 | 445.0 |
| Electricity, gas, water and sanitary services | 871.0 | 316.5 | 305.7 | 10.8 | 554.5 | 138.9 | 415.6 |
| Transport, storage and communications | 4 457.7 | 2 270.7 | 2 225.5 | 45.2 | 2 187.0 | 646.3 | 1 540.7 |
| Commerce, financial establishments, real-estate | 11 725.3 | 3 198.9 | 3 120.2 | 78.7 | 8 526.4 | 1 190.1 | 7 336.3 |
| Dwellings | 3 933.8 | - | - | - | 3 933.8 | 1 026.7 | 2 907.1 |
| Other services | 9 503.0 | 6 904.0 | 6 766.6 | 137.4 | 2 599.0 | 413.2 | 2 185.8 |
| Total | 67 832.4 | 26 753.9 | 26 310.4 | 443.5 | 41 138.5 | 6 282.3 | 34 856.2 |

Table C-3
 COLOMBIA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1967
 (Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|----------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 23 269.4 | 7 555.6 | 7 518.6 | 37.0 | 15 713.8 | 1 940.5 | 14 373.3 |
| Mining and quarrying | 1 566.6 | 642.6 | 613.4 | 29.2 | 924.0 | 186.4 | 743.6 |
| Manufacturing | 13 472.3 | 5 166.5 | 5 027.2 | 139.3 | 8 105.8 | 1 338.0 | 6 767.8 |
| Construction | 3 792.7 | 2 935.3 | 2 885.0 | 50.3 | 857.4 | 327.7 | 529.7 |
| Electricity, gas, water and sanitary services | 1 159.5 | 439.9 | 419.9 | 20.0 | 719.6 | 183.6 | 536.0 |
| Transport, storage and communications | 5 049.7 | 2 507.1 | 2 439.5 | 67.6 | 2 542.6 | 727.3 | 1 815.3 |
| Commerce, financial establishments, real estate | 13 372.4 | 4 066.2 | 3 961.6 | 104.6 | 9 306.2 | 1 948.1 | 7 958.1 |
| Dwellings | 4 615.5 | - | - | - | 4 615.5 | 1 196.5 | 3 419.0 |
| Other services | 10 842.4 | 7 736.1 | 7 577.7 | 208.4 | 3 106.3 | 468.5 | 2 637.8 |
| Total | 76 940.5 | 31 049.3 | 30 322.9 | 656.4 | 45 891.2 | 7 110.6 | 38 780.6 |

Table C-3
 COLOMBIA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1968
 (Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|----------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 26 805.0 | 8 076.0 | 8 029.4 | 46.6 | 18 729.0 | 1 530.5 | 17 198.5 |
| Mining and quarrying | 2 149.3 | 732.7 | 698.9 | 33.8 | 1 416.6 | 243.2 | 1 171.2 |
| Manufacturing | 14 917.1 | 5 986.8 | 5 821.0 | 165.8 | 8 990.3 | 1 490.5 | 7 499.8 |
| Construction | 4 565.3 | 3 567.0 | 3 501.1 | 65.9 | 998.3 | 391.8 | 607.3 |
| Electricity, gas, water and sanitary services | 1 325.5 | 484.7 | 461.7 | 23.0 | 840.8 | 208.0 | 632.8 |
| Transport, storage and communications | 6 013.3 | 2 732.6 | 2 656.9 | 75.7 | 3 280.7 | 858.3 | 2 422.4 |
| Commerce, financial establishments, real estate | 15 329.6 | 4 694.0 | 4 478.9 | 155.1 | 10 695.6 | 1 531.7 | 9 163.9 |
| Dwellings | 5 222.2 | - | - | - | 5 222.2 | 1 941.8 | 3 880.4 |
| Other services | 12 436.2 | 8 890.9 | 8 586.3 | 244.6 | 3 605.3 | 532.4 | 3 072.9 |
| Total | 88 763.5 | 35 044.7 | 34 294.2 | 810.5 | 53 718.8 | 8 129.6 | 45 589.2 |

Table C-3
 COLOMBIA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1969
 (Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|----------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 30 208.6 | 9 368.4 | 9 315.1 | 53.3 | 20 840.2 | 1 662.2 | 19 178.0 |
| Mining and quarrying | 2 514.0 | 871.7 | 831.9 | 39.8 | 1 642.3 | 275.6 | 1 365.7 |
| Manufacturing | 17 208.1 | 6 858.2 | 6 670.6 | 187.6 | 10 349.9 | 1 657.0 | 8 692.9 |
| Construction | 5 427.7 | 4 402.2 | 4 322.0 | 80.2 | 1 025.5 | 448.0 | 577.5 |
| Electricity, gas, water and sanitary services | 1 515.0 | 531.5 | 507.2 | 24.3 | 983.5 | 229.3 | 754.2 |
| Transport, storage and communications | 7 310.7 | 3 419.1 | 3 325.5 | 93.6 | 3 891.6 | 1 005.6 | 2 886.0 |
| Commerce, financial establishments, real estate | 17 172.4 | 5 242.6 | 5 069.4 | 173.2 | 11 929.8 | 1 653.6 | 10 276.2 |
| Dwellings | 6 007.2 | - | - | - | 6 007.2 | 1 487.5 | 4 519.7 |
| Other services | 14 372.5 | 11 168.6 | 10 862.3 | 305.5 | 3 203.9 | 593.2 | 2 610.7 |
| Total | 101 796.2 | 41 862.3 | 40 924.8 | 957.5 | 59 873.9 | 9 013.0 | 50 860.9 |

Table C-3
 COLOMBIA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1971
 (Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|-----------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 40 170.6 | 11 316.4 | 11 239.2 | 77.2 | 28 854.2 | 2 140.5 | 26 713.7 |
| Mining and quarrying | 2 572.8 | 880.7 | 834.7 | 46.0 | 1 692.1 | 274.2 | 1 417.9 |
| Manufacturing | 25 589.5 | 10 525.3 | 10 190.3 | 335.0 | 15 064.2 | 2 386.2 | 12 678.0 |
| Construction | 7 895.4 | 6 225.5 | 6 098.1 | 127.4 | 1 669.9 | 631.1 | 1 038.8 |
| Electricity, gas, water and sanitary services | 2 204.4 | 817.3 | 774.6 | 42.7 | 1 387.1 | 322.9 | 1 064.2 |
| Transport, storage and communications | 10 336.3 | 4 860.0 | 4 705.3 | 154.7 | 5 476.3 | 1 376.9 | 4 099.4 |
| Commerce, financial establishments, real estate | 24 121.1 | 6 503.7 | 6 245.0 | 258.7 | 17 617.4 | 2 249.3 | 15 368.1 |
| Dwellings | 8 091.1 | - | - | - | 8 091.1 | 1 940.1 | 6 151.0 |
| Other services | 21 053.3 | 16 678.8 | 16 147.8 | 531.0 | 4 374.5 | 841.3 | 3 533.2 |
| Total | 142 024.5 | 57 807.7 | 56 235.0 | 1 372.7 | 84 226.8 | 12 162.5 | 72 064.3 |

Table C-3
 COLOMBIA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1970

(Millions of pesos)

| Sector of economic activity | Gross Value added at factor cost | Compensation of employees | | Gross operating surplus | Depreci- ation | Net operating surplus | |
|---|--|---------------------------|--------------------------|-------------------------------|-------------------|-----------------------------|--------------------------------|
| | | Total | Wages and salaries | | | | Employer contribu- tions |
| Agriculture, forestry, hunting and fishing | 94 880.5 | 10 065.8 | 10 008.8 | 57.0 | 24 814.7 | 1 847.4 | 22 967.3 |
| Mining and quarrying | 2 457.7 | 786.6 | 748.3 | 38.3 | 1 671.1 | 260.3 | 1 410.8 |
| Manufacturing | 20 976.7 | 8 773.2 | 8 514.7 | 258.5 | 12 203.5 | 1 944.4 | 10 259.1 |
| Construction | 6 281.1 | 5 091.8 | 4 993.7 | 98.1 | 1 169.3 | 499.0 | 690.3 |
| Electricity, gas, water and sanitary services | 1 787.9 | 657.1 | 624.4 | 32.7 | 1 130.8 | 260.2 | 870.6 |
| Transport, storage and communications | 8 881.1 | 4 058.5 | 3 932.0 | 119.5 | 4 822.6 | 1 176.0 | 3 646.6 |
| Commerce, financial establishments, real estate | 20 521.2 | 5 768.9 | 5 559.7 | 209.2 | 14 752.3 | 1 902.1 | 12 850.2 |
| Dwellings | 6 886.9 | - | - | - | 6 886.9 | 1 641.5 | 5 245.4 |
| Other services | 17 353.2 | 13 543.9 | 13 144.9 | 399.0 | 3 809.3 | 689.4 | 3 119.9 |
| Total | 120 026.3 | 48 745.8 | 47 535.5 | 1 212.3 | 71 280.5 | 10 220.3 | 61 060.2 |

Table C-4
 COSTA RICA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1966
 (Millions of colones)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 978.0 | 448.6 | 446.1 | 2.5 | 529.4 | 23.3 | 506.1 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing ^{a/} | 561.6 | 287.2 | 279.2 | 8.0 | 274.4 | 58.1 | 216.3 |
| Construction | 183.9 | 143.0 | 139.9 | 3.1 | 40.9 | 13.6 | 27.3 |
| Electricity, gas, water and sanitary services | 67.7 | 25.4 | 24.2 | 1.2 | 42.3 | 12.8 | 29.5 |
| Transport, storage and communications | 182.1 | 117.5 | 114.2 | 3.3 | 64.6 | 28.2 | 36.4 |
| Commerce, financial establishments, real estate | 823.8 | 436.5 | 423.7 | 12.8 | 387.3 | 23.9 | 363.4 |
| Dwellings | 383.1 | - | - | - | 383.1 | 84.0 | 299.1 |
| Other services | 690.4 | 599.1 | 587.4 | 16.7 | 91.3 | 11.9 | 79.4 |
| Total | 3 870.6 | 2 057.3 | 2 000.7 | 47.6 | 1 813.3 | 255.8 | 1 557.5 |

^{a/} Including: Mining and quarrying.

Table C-4
COSTA RICA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1967

(Millions of colones)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 1,047.5 | 472.9 | 470.0 | 2.9 | 574.6 | 26.0 | 548.6 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing ^{a/} | 598.6 | 311.5 | 302.3 | 9.2 | 287.1 | 65.5 | 221.6 |
| Construction | 203.0 | 152.7 | 149.4 | 3.3 | 50.3 | 16.4 | 33.9 |
| Electricity, gas, water and sanitary services | 71.0 | 27.2 | 25.6 | 1.6 | 43.8 | 15.3 | 28.5 |
| Transport, storage and communications | 198.8 | 124.8 | 120.8 | 4.0 | 74.0 | 32.5 | 41.5 |
| Commerce, financial establishments, real estate | 897.2 | 475.6 | 460.4 | 15.2 | 421.6 | 29.7 | 391.9 |
| Dwellings | 414.2 | - | - | - | 414.2 | 86.9 | 327.3 |
| Other services | 746.3 | 649.5 | 628.8 | 20.7 | 96.8 | 12.2 | 84.6 |
| Total | 4,176.6 | 2,214.2 | 2,157.2 | 56.2 | 1,962.4 | 284.5 | 1,677.2 |

^{a/} Including: Mining and quarrying.

Table C-4

COSTA RICA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1968
(Millions of colones)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 1 159.7 | 504.1 | 500.5 | 3.6 | 655.6 | 29.9 | 625.7 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing g/ | 692.7 | 360.8 | 349.6 | 11.2 | 331.9 | 81.8 | 250.1 |
| Construction | 226.7 | 168.2 | 164.3 | 3.9 | 58.5 | 19.5 | 39.0 |
| Electricity, gas, water and sanitary services | 84.9 | 32.6 | 30.7 | 1.9 | 52.3 | 18.2 | 34.1 |
| Transport, storage and communications | 217.5 | 132.6 | 128.2 | 4.4 | 84.9 | 35.7 | 49.2 |
| Commerce, financial establishments, real estate | 962.7 | 510.9 | 492.9 | 18.0 | 451.8 | 34.4 | 417.4 |
| Dwellings | 432.5 | - | - | - | 432.5 | 91.8 | 340.7 |
| Other services | 807.2 | 703.3 | 679.8 | 23.4 | 103.9 | 12.7 | 91.2 |
| Total | 4 583.2 | 2 412.5 | 2 346.1 | 66.4 | 2 171.4 | 324.0 | 1 847.4 |

g/ Including: Mining and quarrying.

Table C-4
COSTA RICA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1969

(Millions of colones)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 1 283.1 | 542.7 | 538.8 | 3.9 | 740.4 | 94.2 | 706.2 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing ^{a/} | 773.5 | 403.4 | 388.1 | 12.3 | 373.1 | 90.2 | 282.9 |
| Construction | 244.0 | 180.8 | 176.6 | 4.2 | 63.2 | 20.9 | 42.3 |
| Electricity, gas, water and sanitary services | 98.3 | 36.4 | 34.2 | 2.2 | 61.9 | 24.4 | 37.5 |
| Transport, storage and communications | 254.0 | 152.2 | 147.1 | 5.1 | 101.8 | 36.0 | 65.8 |
| Commerce, financial establishments, real estate | 1 062.2 | 561.0 | 540.6 | 20.4 | 501.2 | 37.8 | 463.4 |
| Dwellings | 455.2 | - | - | - | 455.2 | 96.0 | 359.2 |
| Other services | 909.2 | 789.3 | 762.5 | 26.8 | 119.9 | 14.0 | 105.9 |
| Total | 5 072.5 | 2 662.8 | 2 587.9 | 74.9 | 2 416.7 | 353.5 | 2 063.2 |

^{a/} Including Mining and quarrying.

Table C-4
COSTA RICA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1970

(Millions of colones)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 1 452.1 | 622.4 | 618.3 | 4.1 | 829.7 | 39.5 | 790.2 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing ^{a/} | 878.4 | 467.7 | 454.4 | 13.3 | 410.7 | 103.7 | 307.0 |
| Construction | 275.2 | 204.8 | 199.6 | 5.2 | 70.4 | 23.4 | 47.0 |
| Electricity, gas, water and sanitary services | 114.3 | 43.4 | 40.6 | 2.8 | 70.9 | 42.8 | 28.1 |
| Transport, storage and communications | 276.7 | 169.2 | 163.2 | 6.0 | 107.5 | 45.6 | 61.9 |
| Commerce, financial establishments, real estate | 1 299.7 | 656.9 | 631.8 | 25.1 | 642.8 | 42.0 | 600.8 |
| Dwellings | 485.5 | - | - | - | 485.5 | 101.3 | 384.2 |
| Other services | 1 017.4 | 893.1 | 862.3 | 30.8 | 124.3 | 17.2 | 107.1 |
| Total | 5 799.3 | 3 057.5 | 2 970.2 | 87.3 | 2 741.8 | 415.5 | 2 326.3 |

^{a/} Including: Mining and quarrying.

Table C.4
 COSTA RICA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1971
 (Millions of colones)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 1 421.3 | 587.5 | 583.6 | 3.9 | 833.0 | 48.1 | 785.7 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing ^{a/} | 1 003.7 | 530.5 | 513.5 | 17.0 | 473.2 | 119.6 | 353.6 |
| Construction | 340.6 | 257.5 | 250.2 | 7.3 | 83.1 | 27.2 | 55.9 |
| Electricity, gas, water and sanitary services | 132.7 | 55.6 | 51.6 | 4.0 | 77.1 | 21.8 | 55.3 |
| Transport, storage and communications | 312.4 | 203.8 | 195.7 | 8.1 | 115.6 | 55.2 | 60.4 |
| Commerce, financial establishments, real estate | 1 417.9 | 740.6 | 708.8 | 31.8 | 677.3 | 48.3 | 629.0 |
| Dwellings | 508.2 | - | - | - | 508.2 | 107.2 | 401.0 |
| Other services | 1 177.9 | 1 048.1 | 1 007.5 | 40.6 | 129.8 | 22.3 | 107.5 |
| Total | 6 322.4 | 3 423.6 | 3 310.9 | 112.7 | 2 898.8 | 449.7 | 2 449.1 |

^{a/} Including Mining and quarrying.

Table C-5
CHILE: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1968

(Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|----------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 3 187.0 | 1 216.0 | 993.0 | 223.0 | 1 971.0 | 378.0 | 1 593.0 |
| Mining and quarrying | 4 767.4 | 1 597.0 | 1 315.0 | 282.0 | 3 170.4 | 352.4 | 2 771.0 |
| Manufacturing | 11 339.1 | 4 238.0 | 3 508.0 | 730.0 | 7 101.1 | 805.1 | 6 296.0 |
| Construction | 1 827.1 | 994.0 | 795.0 | 199.0 | 833.1 | 167.1 | 666.0 |
| Electricity, gas, water and sanitary services | 584.7 | 340.0 | 259.0 | 81.0 | 244.7 | 150.7 | 94.0 |
| Transport, storage and communications | 2 491.8 | 1 598.0 | 1 376.0 | 222.0 | 893.8 | 600.8 | 293.0 |
| Commerce, financial establishments, real estate | 7 189.7 | 2 660.0 | 2 090.0 | 570.0 | 4 529.7 | 375.7 | 4 154.0 |
| Dwellings | 847.0 | - | - | - | 347.0 | 729.0 | 118.0 |
| Other services | 7 445.5 | 6 064.0 | 5 581.0 | 483.0 | 1 381.5 | 248.5 | 1 133.0 |
| Total | 39 679.3 | 18 707.0 | 15 917.0 | 2 790.0 | 20 972.3 | 3 914.3 | 17 058.0 |

Table C-6
 MEXICO: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1969
 (Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|---------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 42 972 | 15 841 | 15 713 | 128 | 27 131 | 1 504 | 25 627 |
| Mining and quarrying | 15 653 | 4 357 | 4 074 | 283 | 11 296 | 2 802 | 8 494 |
| Manufacturing | 81 748 | 31 185 | 29 904 | 1 201 | 50 563 | 8 393 | 42 470 |
| Construction | 19 022 | 9 301 | 9 064 | 237 | 9 721 | 105 | 9 616 |
| Electricity, gas, water and sanitary services | 4 792 | 2 100 | 2 012 | 88 | 2 692 | 1 663 | 1 029 |
| Transport, storage and communications | 9 474 | 7 253 | 6 973 | 280 | 2 221 | 877 | 1 344 |
| Commerce, financial establishments, real estate | 107 833 | 16 092 | 15 352 | 740 | 91 741 | 593 | 91 148 |
| Dwellings | 27 364 | 1 342 | 1 342 | - | 26 022 | 1 906 | 24 116 |
| Other services | 47 711 | 35 719 | 34 199 | 1 520 | 11 992 | 396 | 11 596 |
| Total | 356 569 | 123 190 | 118 713 | 4 477 | 233 372 | 17 939 | 215 440 |

Table C-6

MEXICO: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1970

(Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreci- ation | Net operating surplus |
|---|--|---------------------------|--------------------------|--------------------------------|-------------------------------|-------------------|-----------------------------|
| | | Total | Wages and salaries | Employer contri- butions | | | |
| Agriculture, forestry, hunting and fishing | 47 226 | 18 597 | 18 444 | 153 | 28 629 | 1 653 | 26 976 |
| Mining and quarrying | 17 028 | 4 723 | 4 494 | 229 | 12 235 | 2 443 | 9 187 |
| Manufacturing | 92 275 | 34 304 | 33 029 | 1 275 | 57 971 | 9 135 | 48 836 |
| Construction | 21 401 | 10 231 | 9 983 | 248 | 11 170 | 118 | 11 052 |
| Electricity, gas, water and sanitary services | 5 371 | 2 310 | 2 210 | 100 | 3 061 | 1 864 | 1 197 |
| Transport, storage and communications | 10 369 | 7 978 | 7 682 | 296 | 2 291 | 960 | 1 431 |
| Commerce, financial establishments, real estate | 119 993 | 17 701 | 16 888 | 813 | 102 292 | 660 | 101 632 |
| Dwellings | 30 115 | 1 476 | 1 476 | - | 28 639 | 2 098 | 26 541 |
| Other services | 54 248 | 39 291 | 37 420 | 1 871 | 15 057 | 451 | 14 606 |
| Total | 328 126 | 136 681 | 131 626 | 5 052 | 261 445 | 19 987 | 241 458 |

Table C-7

PANAMA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1970

(Millions of balboas)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 198.8 | 36.8 | 36.5 | 0.3 | 162.0 | 12.9 | 149.1 |
| Mining and quarrying | 2.5 | 0.7 | 0.6 | 0.1 | 1.8 | 0.3 | 1.4 |
| Manufacturing | 152.5 | 78.5 | 75.5 | 2.6 | 74.0 | 22.5 | 51.4 |
| Construction | 60.4 | 35.5 | 34.6 | 0.9 | 24.9 | 7.7 | 17.2 |
| Electricity, gas, water and sanitary services | 19.0 | 8.9 | 8.1 | 0.8 | 10.1 | 4.5 | 5.6 |
| Transport, storage and communications | 54.3 | 16.2 | 15.4 | 0.8 | 38.1 | 11.6 | 26.5 |
| Commerce, financial establishments, real estate | 135.1 | 80.1 | 76.0 | 4.1 | 55.0 | 8.8 | 46.2 |
| Dwellings | 57.0 | - | - | - | 57.0 | 22.1 | 34.9 |
| Other services | 203.4 | 155.8 | 149.5 | 6.3 | 47.6 | 4.0 | 43.6 |
| Canal Zone | 79.3 | 77.7 | 73.4 | 4.3 | 1.6 | 0.2 | 1.4 |
| Total | 962.3 | 490.2 | 470.0 | 20.2 | 472.1 | 25.1 | 377.0 |

Table C-7
 PANAMA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1972

(Millions of balboas)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 225.7 | 46.7 | 46.3 | 0.4 | 179.0 | 14.3 | 164.7 |
| Mining and quarrying | 2.7 | 0.9 | 0.8 | 0.1 | 1.8 | 0.4 | 1.4 |
| Manufacturing | 188.3 | 100.5 | 96.2 | 4.3 | 87.8 | 28.1 | 59.7 |
| Construction | 85.1 | 45.2 | 43.9 | 1.3 | 39.9 | 10.8 | 29.1 |
| Electricity, gas, water and sanitary services | 27.0 | 11.1 | 10.1 | 1.0 | 15.9 | 6.4 | 9.5 |
| Transport, storage and communications | 73.1 | 20.4 | 19.3 | 1.1 | 52.7 | 15.6 | 37.1 |
| Commerce, financial establishments, real estate | 170.0 | 101.7 | 96.4 | 5.3 | 68.3 | 11.1 | 57.2 |
| Dwellings | 73.2 | - | - | - | 73.2 | 28.3 | 44.9 |
| Other services | 255.1 | 198.0 | 189.7 | 8.3 | 57.1 | 5.0 | 52.1 |
| Canal Zone | 86.8 | 85.2 | 72.6 | 12.6 | 1.6 | 0.3 | 1.3 |
| Total | 1 187.0 | 609.7 | 582.9 | 37.4 | 577.3 | 120.3 | 457.0 |

Table C-8
 PERU: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1970
 (Millions of soles)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|---------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 41 169 | 11 548 | 11 463 | 85 | 29 621 | 1 040 | 28 581 |
| Mining and quarrying | 17 179 | 5 321 | 4 987 | 334 | 11 858 | 4 776 | 7 082 |
| Manufacturing | 42 228 | 16 466 | 15 862 | 604 | 25 762 | 4 226 | 21 536 |
| Construction | 9 954 | 5 808 | 5 668 | 140 | 4 146 | 608 | 3 538 |
| Electricity, gas, water and sanitary services | 2 667 | 1 210 | 1 134 | 76 | 1 457 | 438 | 1 019 |
| Transport, storage and communications | 11 265 | 5 733 | 5 522 | 211 | 5 532 | 992 | 4 540 |
| Commerce, financial establishments, real estate | 34 507 | 12 101 | 11 537 | 564 | 22 406 | 1 770 | 20 636 |
| Dwellings | 9 840 | - | - | - | 9 840 | 834 | 9 006 |
| Other services | 46 422 | 32 521 | 31 330 | 1 191 | 13 901 | 550 | 13 351 |
| Total | 215 231 | 90 703 | 87 523 | 2 135 | 124 523 | 15 234 | 109 289 |

Table C-9
 URUGUAY: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1967

(Millions of pesos)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 18 131 | 3 427 | 3 070 | 357 | 14 704 | 200 | 14 504 |
| Mining and quarrying | ... | ... | ... | ... | ... | ... | ... |
| Manufacturing ^{a/} | 43 736 | 24 995 | 21 266 | 3 729 | 18 741 | 3 285 | 15 456 |
| Construction | ... | ... | ... | ... | ... | ... | ... |
| Electricity, gas, water and sanitary services | 2 352 | 2 027 | 1 734 | 293 | 325 | 137 | 188 |
| Transport, storage and communications | 12 742 | 8 730 | 7 425 | 1 305 | 4 012 | 812 | 3 200 |
| Commerce, financial establishments, real estate | 29 094 | 10 882 | 9 390 | 1 492 | 18 212 | 504 | 17 708 |
| Dwellings | 3 472 | 463 | 412 | 51 | 3 009 | 351 | 2 658 |
| Other services | 39 861 | 29 595 | 26 801 | 2 794 | 10 266 | 242 | 10 024 |
| Total | 142 238 | 80 119 | 70 098 | 10 021 | 69 262 | 5 531 | 63 731 |

^{a/} Including: Mining and quarrying and construction.

Table C-10
 VENEZUELA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1970
 (Billions of bolivares)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 3 798 | 1 542 | 1 530 | 12 | 2 196 | 396 | 1 860 |
| Mining and quarrying | 9 648 | 773 | 726 | 47 | 8 875 | 691 | 8 184 |
| Manufacturing | 7 480 | 3 559 | 3 431 | 128 | 3 921 | 1 020 | 2 901 |
| Construction | 1 985 | 1 480 | 1 446 | 34 | 505 | 133 | 372 |
| Electricity, gas, water and sanitary services | 829 | 433 | 406 | 27 | 396 | 177 | 219 |
| Transport, storage and communications | 5 144 | 1 846 | 1 780 | 66 | 3 298 | 683 | 2 615 |
| Commerce, financial establishments, real estate | 11 844 | 4 301 | 4 152 | 149 | 7 543 | 1 618 | 5 925 |
| Dwellings | - | - | - | - | - | - | - |
| Other services | 8 492 | 7 081 | 6 857 | 224 | 1 411 | 166 | 1 245 |
| Total | 49 160 | 21 015 | 20 328 | 687 | 28 145 | 4 824 | 23 321 |

Table C-10
 VENEZUELA: PRIMARY INCOME GENERATED IN THE PRODUCTION PROCESS BY
 SECTOR OF ECONOMIC ACTIVITY AND TYPE OF REMUNERATION, 1971
 (Millions of bolivares)

| Sector of economic activity | Gross value added at factor cost | Compensation of employees | | | Gross operating surplus | Depreciation | Net operating surplus |
|---|----------------------------------|---------------------------|--------------------|------------------------|-------------------------|--------------|-----------------------|
| | | Total | Wages and salaries | Employer contributions | | | |
| Agriculture, forestry, hunting and fishing | 3 753 | 1 583 | 1 572 | 11 | 2 170 | 339 | 1 831 |
| Mining and quarrying | 10 975 | 754 | 712 | 42 | 10 221 | 755 | 9 466 |
| Manufacturing | 8 560 | 3 979 | 3 847 | 132 | 4 581 | 1 202 | 3 379 |
| Construction | 2 356 | 1 758 | 1 718 | 40 | 598 | 158 | 440 |
| Electricity, gas, water and sanitary services | 896 | 491 | 463 | 28 | 405 | 166 | 239 |
| Transport, storage and communications | 5 555 | 2 021 | 1 352 | 69 | 3 534 | 751 | 2 783 |
| Commerce, financial establishments, real estate | 12 663 | 4 701 | 4 551 | 150 | 7 962 | 1 717 | 6 245 |
| Dwellings | | | | | | | |
| Other services | 9 480 | 7 912 | 7 616 | 296 | 1 568 | 177 | 1 391 |
| <u>Total</u> | <u>54 238</u> | <u>23 199</u> | <u>22 431</u> | <u>768</u> | <u>21 032</u> | <u>5 265</u> | <u>25 774</u> |

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
RESEARCH REPORT

1. Title of the Report
2. Author(s)
3. Date
4. Abstract
5. Introduction
6. Experimental
7. Results
8. Discussion
9. Conclusions
10. References

11. Acknowledgments
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Annex D

ESTIMATES OF THE ENTREPRENEURIAL INCOME OF HOUSEHOLDS
AND PERSONAL ENTERPRISES GENERATED
BY SECTOR OF ECONOMIC ACTIVITY

The entrepreneurial income corresponding to personal enterprises in each sector of activity, appearing in this Annex, was estimated as a balancing item, on the basis of the statistics on net operating surpluses of each sector appearing in Annex C; their framework was the estimates for each of the items making up the national income in the national accounts of each country. An approximate estimate was made for the years of the surveys of the share of the corporations (national and foreign) and of the government in the net operating surplus originating in each sector of production; approximations were also obtained of the property income paid by the personal enterprises in each sector. For this purpose, use was made of available part information of different types, ensuring that the resulting estimates were consistent with the estimated totals for the economy as a whole of the following components of the national income: income from unincorporated enterprises, property income (excluding the interest on consumers' debts), savings of corporate enterprises, direct taxes on corporate enterprises, General Government income proceeding from its properties and enterprises (excluding interest on the public debt).

In four of the countries considered (Argentina, Chile, Uruguay and Venezuela) official estimates are available on the institutional appropriation of the net operating surplus generated in each sector and on the entrepreneurial income corresponding to personal enterprises in each sector, for earlier years around the time of the surveys in question; the estimates only had to be updated, making use of relevant statistics.

Table U-1

NET OPERATING SURPLUS GENERATED IN EACH SECTOR OF ECONOMIC ACTIVITY, BY INSTITUTIONAL SECTOR OF ORIGIN AND FORMS OF INCOME, ARGENTINA, CHILE, URUGUAY AND VENEZUELA

| Sector of economic activity | Argentina 1970 (thousands of millions of pesos) | | | | Chile 1968 (millions of pesos) | | | | Uruguay 1967 (millions of pesos) | | | | Venezuela 1970 (millions of bolívares) | | | | | |
|---|--|---------------|----------------|-----------------------|-----------------------------------|----------------|-----------------------|---------------|-------------------------------------|-----------------------|---------------|----------------|---|---------------|----------------|-----------------------|-------|-------|
| | Net operating surplus | Public sector | Private sector | Net operating surplus | Public sector | Private sector | Net operating surplus | Public sector | Private sector | Net operating surplus | Public sector | Private sector | Net operating surplus | Public sector | Private sector | Net operating surplus | | |
| Agriculture, forestry, hunting and fishing | 655.6 | 95.6 | 35.5 | 524.5 | 1 593 | 241 | 15 | 1 337 | 14 504 | 1 090 | 160 | 870 | 12 444 | 1 860 | 4 | 27 | 265 | |
| Mining and quarrying and manufacturing | 1 413.6 | 184.0 | 42.3 | 383.1 | 804.2 | 90 | 2 331 | 4 669 | 15 456 | - | 1 066 | 4 081 | 10 309 | 11 457 | 8 742 | 579 | 162 | |
| Construction | 347.9 | 44.7 | 69.6 | 59.5 | 174.1 | 327 | -55 | 23 | 121 | 238 | ... | ... | ... | ... | ... | ... | ... | |
| Electricity, gas and water | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| Transport, storage and communications | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| Commerce, financial establishments, real estate | 1 020.0 | 112.2 | 49.1 | 125.6 | 733.1 | 4 154 | 293 | 161 | 660 | 3 100 | 17 708 | 478 | 2 993 | 14 237 | ... | ... | ... | |
| Dwellings | 112.6 | 112.6 | - | - | - | 118 | - | 118 | - | 2 658 | 2 658 | - | - | 2 556 | - | - | 2 556 | |
| Other services | 498.2 | 97.5 | 9.2 | 391.5 | 1 133 | 21 | 56 | 111 | 945 | 13 412.3 | 45.6 | 389.2/12 567.2 | 1 245 | 95 | 100 | 81 | 969 | |
| Total | 4 047.2 | 646.6 | 161.0 | 612.9 | 2 627.4 | 17 058 | 1 372 | 1 535 | 3 211 | 10 893 | 63 728 | 2 688 | 2 160 | 8 333 | 49 557 | 23 221 | 8 343 | 2 347 |

a/ Including quasi-corporate enterprises and unincorporated enterprises.
 b/ Included in "Other services".
 c/ Calculated on the basis of official estimates from previous System of National Accounts (51).
 d/ Including "Electricity, gas and water" and "transport, storage and communications".

Table D-2
ESTIMATES OF THE ENTREPRENEURIAL INCOME OF HOUSEHOLDS AND PERSONAL ENTERPRISES GENERATED BY SECTOR OF ECONOMIC ACTIVITY

| Sector of economic activity | Argentina (thousands of pesos) | | Brazil (millions of cruzeiros) | | Colombia (millions of pesos) | | Costa Rica (millions of colones) | | Chile (millions of pesos) | | Mexico (millions of pesos) | | Panama (millions of balboas) | | Peru (millions of soles) | | Uruguay (millions of pesos) | | Venezuela (millions of boliveres) | |
|---|--------------------------------|---------------|--------------------------------|-----------------|------------------------------|-----------------|----------------------------------|------------|---------------------------|---------------|----------------------------|----------------|------------------------------|------------|--------------------------|---------------|-----------------------------|--------------|-----------------------------------|--------------|
| | 1970 | 1971 | 1970 | 1971 | 1967 | 1968 | 1966 | 1967 | 1969 | 1970 | 1969 | 1970 | 1970 | 1970 | 1970 | 1970 | 1970 | 1970 | 1970 | 1971 |
| Agriculture, forestry hunting and fishing | 524.5 | 12 847 | 25 813 | 11 498.6 | 13 782.6 | 17 072.5 | 412 | 449 | 605 | 1 337 | 21 932 | 23 022 | 109 | 105 | 22 683 | 12 444 | 1 564 | 1 564 | 1 564 | 1 596 |
| Mining and quarrying and manufacturing | 804.2 | 14 060 | 21 092 | 5 473.1 | 6 156.2 | 7 667.9 | 126 | 131 | 197 | 4 669 | 19 782 | 21 507 | 45 | 50 | 12 173 | 10 309 | 1 774 | 1 774 | 1 840 | 1 840 |
| Constructions | | | | | | | | | | 544 | 7 145 | 8 212 | | | | | | | | |
| Electricity, gas and water | | | | | | | | | | | ... | ... | | | | | | | | |
| Transport, storage and communications | 174.1 | 2 341 | 4 431 | 9 467.0 | 11 097.4 | 13 312.5 | 26 | 31 | 35 | 238 | | | | | 2 762 | | 4 151 | 4 151 | 4 184 | 4 184 |
| Commerce, financial establishments, real estate | 733.1 | 20 204 | 39 877 | | | | 154 | 155 | 262 | 3 100 | 73 567 | 83 226 | 399 | 352 | 23 906 | 14 237 | | | | |
| Other services | 391.5 | | | | | | 63 | 67 | 87 | 945 | | | | | | | | | | |
| Total | 2 627.4 | 49 452 | 91 153 | 26 438.7 | 31 046.2 | 38 053.0 | 781 | 832 | 1 186 | 10 833 | 122 426 | 136 067 | 187 | 120 | 61 524 | 49 557 | 8 658 | 8 658 | 8 687 | 8 687 |

a/ Excluding direct taxes on personal enterprises.

b/ Included in "Manufacturing".

c/ Including Canal Zone.

d/ Including "Electricity, Gas and water" and "Transport, storage and communications".

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It covers both qualitative and quantitative research approaches, highlighting the strengths and limitations of each.

3. The third part of the document focuses on the ethical considerations surrounding data collection and analysis. It discusses the importance of informed consent, confidentiality, and the responsible use of data.

4. The fourth part of the document provides a detailed overview of the statistical methods used to analyze the data. It covers both descriptive and inferential statistics, including hypothesis testing and regression analysis.

5. The fifth part of the document discusses the interpretation and communication of research findings. It emphasizes the importance of clear and concise reporting, as well as the use of visual aids to enhance understanding.

6. The sixth part of the document concludes with a summary of the key findings and a discussion of the implications for future research. It highlights the need for continued exploration and innovation in the field.

Annex E

ESTIMATES OF THE MEAN EARNINGS OF THE INDIVIDUAL
INCOME-RECIPIENTS OF EACH OCCUPATIONAL
STATUS BY KIND OF ECONOMIC ACTIVITY

The mean earnings included in the present Annex were calculated by relating the estimates of sectoral wages and salaries (Annex C) and the entrepreneurial income generated by sectors (Annex D) to the estimates of the employed population by kind of economic activity and occupational status (Annex A).

For each country it is indicated whether the resulting mean earnings are by occupation, by economically active recipient or by employed recipient, according to the concept used in Annex A to measure employment.

To assist in the comparison of these remunerations with those obtained from surveys (Annex G), both the gross mean wages and those net of employees' contributions to social security were estimated.

Table E-1

ARGENTINA: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Pesos)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- neurial income |
|---|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | <u>1 970</u> | |
| <u>Total</u> | <u>5 358</u> | <u>5 054</u> | <u>12 829</u> |
| <u>Agricultural</u> | <u>3 034</u> | <u>3 000</u> | <u>10 895</u> |
| <u>Non-agricultural</u> | <u>5 820</u> | <u>5 463</u> | <u>13 423</u> |
| Mining and quarrying | 9 253 | 8 310 | } 16 733 |
| Manufacturing | 6 244 | 5 854 | |
| Construction | 6 170 | 5 950 | |
| Electricity, gas, water and sanitary services | 13 472 | 11 943 | } 13 580 |
| Transport, storage and communications | 6 789 | 6 386 | |
| Commerce, financial establishments, real estate | } 4 940 | } 4 629 | } 10 510 |
| Dwellings | | | |
| Other services | | | 15 040 |

a/ For employees by occupation remunerated, and for self-employed by economically active recipients.

Table E-2

BRAZIL: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Cruzeiros)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- neurial income |
|---|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | <u>1 9 7 0</u> | |
| <u>Total</u> | <u>4 566</u> | <u>4 339</u> | <u>4 737</u> |
| <u>Agricultural</u> | <u>2 959</u> | <u>2 931</u> | <u>1 790</u> |
| <u>Non-agricultural</u> | <u>5 005</u> | <u>4 724</u> | <u>11 225</u> |
| Mining, quarrying, manufacturing, construction, electricity, gas, water | 4 285 | 4 059 | 18 787 |
| Transport, storage, communications | 4 861 | 4 548 | 8 894 |
| Commerce, financial establishments, real estate; other services | 5 502 | 5 189 | 8 988 |
| Dwellings | - | - | - |
| | | <u>1 9 7 2</u> | |
| <u>Total</u> | <u>6 880</u> | <u>6 537</u> | <u>8 376</u> |
| <u>Agricultural</u> | <u>4 375</u> | <u>4 333</u> | <u>3 511</u> |
| <u>Non-agricultural</u> | <u>7 526</u> | <u>7 106</u> | <u>18 499</u> |
| Mining, quarrying, manufacturing, construction, electricity, gas, water | 6 523 | 6 188 | 25 711 |
| Transport, storage, communications | 7 284 | 6 844 | 16 290 |
| Commerce, financial establishments, real estate; other services | 8 227 | 7 753 | 16 330 |
| Dwellings | - | - | - |

a/ For employees by employed recipients and for self-employed persons by economically active recipients.

Table E-3

COLUMBIA: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Pesos)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- neurial income |
|--|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | <u>1 9 6 7</u> | |
| <u>Total</u> | <u>2 757</u> | <u>2 601</u> | <u>14 971</u> |
| <u>Agricultural</u> | <u>7 415</u> | <u>7 388</u> | <u>11 490.2</u> |
| <u>Non-agricultural</u> | <u>10 887</u> | <u>10 669</u> | <u>19 658.0</u> |
| Mining and quarrying | 14 605 | 14 088 | } 16 840.3 |
| Manufacturing | 9 107 | 8 920 | |
| Construction | 14 497 | 14 310 | |
| Electricity, gas, water | 13 997 | 13 503 | |
| Transport, storage, communications | 14 020 | 13 732 | } 21 763.2 |
| Commerce, financial establishments, real estate | 15 910 | 15 598 | |
| Other services | 8 804 | 8 623 | |
| Dwellings | - | - | |
| | | <u>1 9 7 0</u> | |
| <u>Total</u> | <u>13 846</u> | <u>13 584</u> | <u>20 134</u> |
| <u>Agricultural</u> | <u>2 550</u> | <u>2 510</u> | <u>16 416</u> |
| <u>Non-agricultural</u> | <u>15 734</u> | <u>15 274</u> | <u>24 683</u> |
| Mining and quarrying | 16 629 | 15 998 | } 21 908 |
| Manufacturing | 14 144 | 13 825 | |
| Construction | 22 699 | 22 368 | |
| Electricity, gas, water | 18 921 | 18 185 | |
| Transport, storage, communications | 20 200 | 19 745 | } 26 625 |
| Commerce, financial establishments, real estate | 19 040 | 18 508 | |
| Other services | 13 171 | 12 875 | |
| Dwellings | - | - | |

^{a/} By employed recipients.

Table E-4

COSTA RICA: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS, IN EACH KIND OF ECONOMIC ACTIVITY
(Colones)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- neurial income |
|--|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | <u>1 9 6 7</u> | |
| <u>Total</u> | <u>6 601</u> | <u>6 442</u> | <u>8 301</u> |
| <u>Agricultural</u> | <u>3 865</u> | <u>3 843</u> | <u>7 682</u> |
| <u>Non-agricultural</u> | <u>8 223</u> | <u>7 983</u> | <u>9 165</u> |
| Mining and quarrying, manufacturing | 7 337 | 7 129 | } 8 805 |
| Construction | 5 681 | 5 567 | |
| Electricity, gas, water | 5 020 | 4 745 | |
| Transport, storage, communications | 6 864 | 6 653 | 10 621 |
| Commerce, financial establishments, real estate | 14 080 | 13 654 | 8 110 |
| Dwellings | - | - | - |
| Other services | 7 640 | 7 412 | 13 420 |
| | | <u>1 9 7 1</u> | |
| <u>Total</u> | <u>8 403</u> | <u>8 149</u> | <u>10 166</u> |
| <u>Agricultural</u> | <u>4 489</u> | <u>4 452</u> | <u>9 665</u> |
| <u>Non-agricultural</u> | <u>10 331</u> | <u>9 969</u> | <u>10 747</u> |
| Mining and quarrying, manufacturing | 10 631 | 10 317 | } 11 280 |
| Construction | 8 176 | 7 984 | |
| Electricity, gas, water | 8 746 | 8 203 | |
| Transport, storage, communications | 8 257 | 7 970 | 9 000 |
| Commerce, financial establishments, real estate | 16 036 | 15 382 | 10 116 |
| Dwellings | - | - | - |
| Other services | 9 052 | 8 734 | 12 779 |

^{a/} By economically active recipients.

Table E-5

CHILE: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Escudos)

| Kind of economic activity | Mean wages and salaries | | Mean entrepreneurial income |
|--|-------------------------|--|-----------------------------|
| | Gross | Net of personal contributions to social security | |
| | | 1 9 6 8 | |
| <u>Total</u> | <u>8 389</u> | <u>7 815</u> | <u>15 500</u> |
| <u>Agricultural</u> | <u>2 516</u> | <u>2 224</u> | <u>6 283</u> |
| <u>Non-agricultural</u> | <u>9 932</u> | <u>9 243</u> | <u>19 519</u> |
| Mining and quarrying | 14 676 | 13 672 | 11 022 |
| Manufacturing | 8 886 | 8 315 | 33 246 |
| Construction | 5 820 | 5 447 | 18 327 |
| Electricity, gas, water | 21 949 | 19 407 | - |
| Transport, storage, communications | 10 982 | 10 144 | 6 544 |
| Commerces, financial establishments, real estate | 12 651 | 11 332 | 18 487 |
| Dwellings | - | - | - |
| Other services | 9 634 | 9 089 | 8 681 |

^{a/} By employed recipients.

Table E-6
MEXICO: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS, AND KIND OF ECONOMIC ACTIVITY
(Pesos)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- neurial income |
|---|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | <u>1 9 6 2</u> | |
| <u>Total</u> | <u>15 178</u> | <u>14 846</u> | <u>30 723</u> |
| <u>Agricultural</u> | <u>6 251</u> | <u>6 226</u> | <u>2 385</u> |
| <u>Non-agricultural</u> | <u>19 407</u> | <u>18 929</u> | <u>56 195</u> |
| Mining and quarrying; manufacturing; electricity, gas, water | 17 326 | 16 871 | 37 339 |
| Construction | 19 302 | 19 037 | 68 177 |
| Commerce, financial establishments, real estate | 23 155 | 22 505 | } 63 766 |
| Transport, storage, communications; other services | } 20 312 | } 19 819 | |
| Dwellings | | | |

^{a/} By economically active recipients.

Table E-7

PANAMA: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS, AND KIND OF ECONOMIC ACTIVITY
(Balboas)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- neurial income |
|--|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | 1 970 | |
| <u>Total</u> | 1 904 | 1 817 | 1 058 |
| <u>Agricultural</u> | 1 034 | 1 025 | 805 |
| <u>Non-agricultural</u> | 2 050 | 1 949 | 1 720 |
| Mining and quarrying | 1 500 | 1 250 | } 2 994 |
| Manufacturing | 2 372 | 2 288 | |
| Construction | 1 944 | 1 888 | |
| Electricity, gas, water | 1 841 | 1 636 | - |
| Transport, storage, communications | 1 674 | 1 576 | } 1 172 |
| Commerce, financial establishments, real estate | 2 088 | 1 970 | |
| Other services | 1 695 | 1 620 | |
| Canal Zone | 3 164 | 2 970 | |
| Dwellings | - | - | - |
| | | 1 972 | |
| <u>Total</u> | 2 109 | 2 008 | 994 |
| <u>Agricultural</u> | 1 215 | 1 205 | 761 |
| <u>Non-agricultural</u> | 2 252 | 2 137 | 1 605 |
| Mining and quarrying | 1 600 | 1 400 | } 3 018 |
| Manufacturing | 2 599 | 2 499 | |
| Construction | 2 071 | 2 009 | |
| Electricity, gas, water | 1 942 | 1 712 | - |
| Transport, storage, communications | 1 949 | 1 828 | } 967 |
| Commerce, financial establishments, real estate | 2 312 | 2 177 | |
| Other services | 1 946 | 1 857 | |
| Canal Zone | 3 197 | 2 960 | |
| Dwellings | - | - | - |

^{a/} By employed recipients.

Table E-8:
PERU: MEAN EARNINGS^a BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Soles)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- nsorial income |
|--|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | <u>1 9 7 0</u> | |
| <u>Total</u> | <u>40 395</u> | <u>39 661</u> | <u>36 302</u> |
| <u>Agricultural</u> | <u>18 043</u> | <u>17 977</u> | <u>22 604</u> |
| <u>Non-agricultural</u> | <u>49 667</u> | <u>48 657</u> | <u>56 185</u> |
| Mining and quarrying | 61 720 | 59 653 | } 41 250 |
| Manufacturing | 44 922 | 44 070 | |
| Construction | 54 869 | 54 192 | |
| Electricity, gas, water | 91 452 | 88 387 | |
| Transport, storage, communications | 48 824 | 47 896 | 54 585 |
| Commerce, financial establishments, real estate | 69 886 | 62 383 | } 69 172 |
| Other services | 45 551 | 44 687 | |
| Dwellings | - | - | - |

^a/ By economically active recipients.

Table E-9
 URUGUAY: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS, AND KIND OF ECONOMIC ACTIVITY.
 (Pesos)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- neurial income |
|--|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | 1 9 6 7 | |
| <u>Total</u> | 89 331 | 80 240 | 192 679 |
| <u>Agricultural</u> | 27 120 | 24 676 | 158 119 |
| <u>Non-agricultural</u> | 99 813 | 89 573 | 207 916 |
| Mining and quarrying, manufacturing, construction | 90 880 | 79 534 | 144 789 |
| Commerce, financial establishments, real estate | 98 634 | 87 479 | 292 942 |
| Electricity, gas, water | 93 730 | 82 432 | } 214 089 |
| Transport, storage, communications | 135 000 | 118 109 | |
| Other services | } 101 239 | 93 705 | |
| Dwellings | | - | |

^{a/} By economically active recipients.

Table E-10

VENEZUELA: MEAN EARNINGS^{a/} BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Bolivares)

| Kind of economic activity | Mean wages and salaries | | Mean entre- pre- neurial income |
|--|-------------------------|--|---|
| | Gross | Net of per- sonal con- tributions to social security | |
| | | <u>1 9 7 0</u> | |
| <u>Total</u> | <u>10 632</u> | <u>10 414</u> | <u>2 588</u> |
| <u>Agricultural</u> | <u>6 711</u> | <u>6 675</u> | <u>5 431</u> |
| <u>Non-agricultural</u> | <u>11 163</u> | <u>10 920</u> | <u>11 535</u> |
| Mining and quarrying, manufacturing | 8 733 | 8 513 | } 10 444 |
| Construction | 15 890 | 15 659 | |
| Electricity, gas, water | 9 022 | 8 667 | } 12 019 |
| Transport, storage, communications | 14 127 | 13 810 | |
| Commerce, financial establishments, real estate | 16 031 | 15 683 | |
| Other services | 9 981 | 9 783 | |
| Dwellings | - | - | - |
| | | <u>1 9 7 1</u> | |
| <u>Total</u> | <u>11 227</u> | <u>10 994</u> | <u>2 515</u> |
| <u>Agricultural</u> | <u>6 865</u> | <u>6 834</u> | <u>5 172</u> |
| <u>Non-agricultural</u> | <u>11 791</u> | <u>11 533</u> | <u>11 609</u> |
| Mining and quarrying, manufacturing | 9 598 | 9 377 | } 9 246 |
| Construction | 13 967 | 13 772 | |
| Electricity, gas, water | 10 289 | 9 911 | } 12 736 |
| Transport, storage, communications | 14 353 | 14 044 | |
| Commerce, financial establishments, real estate | 15 857 | 15 540 | |
| Other services | 10 834 | 10 579 | |
| Dwellings | - | - | - |

^{a/} By employed recipients.

Annex F

ESTIMATES OF HOUSEHOLD INCOME OBTAINED FROM
SURVEYS AND DEMOGRAPHIC CENSUSES

This annex contains aggregate household income by sources, estimated on the basis of the results of each of the surveys and censuses considered.

In the cases indicated, the income was estimated by means of the interpolation of frequency distributions grouped by income intervals.^{x/} In the remaining cases, the direct calculation of the aggregate income for the households of the sample was available.

The aggregate monthly income was obtained in all cases by the expansion of samples of households or income-recipients that declared an income.

The aggregate annual income was obtained by two operations. The first consisted in multiplying the monthly income by twelve; for some surveys it was also considered necessary to include an estimated factor which would include the total wages representing non-customary earnings. The second operation consisted in expressing the annual sums in terms of average prices for the year so that they could be compared with the national accounts estimates. The respective income reference periods were taken into account in this operation.

^{x/} The methods used are explained in detail in another document (Oscar Altimir, Dos procedimientos de interpolación de distribuciones de frecuencia agrupadas de acuerdo con los ingresos).

THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and change. From the first settlers to the present day, the nation has evolved through various stages of development. The early years were marked by exploration and the establishment of colonies. The American Revolution led to the birth of a new nation, and the subsequent years saw the expansion of territory and the growth of industry. The Civil War was a pivotal moment in the nation's history, leading to the abolition of slavery and the strengthening of the federal government. The 20th century brought significant social and economic changes, including the rise of the industrial revolution and the emergence of the modern world.

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ESTIMATES OF HOUSEHOLD INCOME OBTAINED FROM SURVEYS AND DEMOGRAPHIC CENSUSES
(Millions of units of national currency)

| Country | Survey | Income coverage | Income reference period | Wages and salaries | | | Entrepreneurial income | | | Property income | | | Current transfer and other income | | | Total current income of households ^{g/} | | | Income obtained by: | |
|------------|--------|-----------------|-------------------------|--------------------|-----------|---|------------------------|----------|---|-----------------|----------|---|-----------------------------------|----------|---|--|-----------|---|---------------------|--------|
| | | | | Monthly | Annual | Adjusted to average prices for the year | Monthly | Annual | Adjusted to average prices for the year | Monthly | Annual | Adjusted to average prices for the year | Monthly | Annual | Adjusted to average prices for the year | Monthly | Annual | Adjusted to average prices for the year | Monthly | Annual |
| Argentina | 7-20 | MA | March 1970 | 978.9 | 12 432.0 | 13 090.9 | 529.2 | 6 350.4 | 6 687.0 | 35.4 | 424.8 | 447.3 | 188.5 | 2 262.0 | 2 381.9 | 1 731.7 | 20 780.4 | 21 881.8 | X | X |
| | 6 | HA | June 69 - July 70 | 965.8 | 11 589.6 | 12 470.4 | 633.1 | 7 597.2 | 8 274.5 | 536.8 | 6 441.6 | 6 931.2 | 234.8 | 2 817.6 | 3 031.7 | 2 370.5 | 28 446.0 | 30 608.0 | X | X |
| Brazil | 4-12 | N | Dec. 69 - March 70 | 3 750.5 | 46 881.3 | 53 585.3 | 1 545.3 | 18 543.6 | 19 915.8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 5-2-1 | N | Sept. - Dec. 72 | 7 922.3 | 99 903.7 | 94 302.1 | 3 232.5 | 39 030.0 | 37 429.8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 5-2-2 | N | Sept. - Dec. 72 | 8 766.9 | 109 586.3 | 103 449.5 | 5 577.8 | 66 933.6 | 64 189.3 | 763.4 | 9 160.8 | 8 785.2 | 4 840.1 | 59 441.0 | 56 494.0 | 19 947.6 | 245 121.7 | 232 218.0 | X | X |
| | Censo | N | August 1970 | 4 590.8 | 57 385.0 | 53 993.3 | 2 457.4 | 29 468.8 | 29 223.4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Colombia | 3 | 4 cities | Jan. 67 - March 68 | 675.3 | 8 103.6 | 8 055.0 | 441.2 | 5 294.4 | 5 262.6 | 276.2 | 3 314.4 | 3 294.5 | 161.0 | 1 932.0 | 1 920.4 | 1 594.0 | 18 408.0 | 18 297.6 | X | X |
| | 4-1 | N | May - June 70 | 3 595.2 | 44 940.0 | 44 476.0 | 1 836.4 | 22 036.8 | 21 662.2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Costa Rica | 2-1 | N | June 66 - June 67 | 99.2 | 1 240.0 | 1 252.4 | 21.9 | 262.8 | 265.4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 2-7 | U | 1971 | 100.1 | 1 251.3 | 1 251.3 | 18.3 | 219.6 | 219.6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Chile | 4 | N | Aug. - Nov. 71 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 5-5 | N | Oct. 67 - Feb. 68 | 732.2 | 9 477.8 | 10 814.2 | 287.2 | 3 446.4 | 3 373.7 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 5-6-2 | N | Jan. - May 68 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 5-6-2 | N | Jan. - May 68 | 905.5 | 11 409.3 | 12 527.4 | 380.3 | 4 563.6 | 4 495.9 | 142.8 | 1 713.6 | 1 842.1 | 135.5 | 1 707.3 | 1 874.6 | 1 563.4 | 16 782.2 | 18 426.9 | X | X |
| Ecuador | 6 | MA | June 68 - Aug. 69 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 2-1 | U | Jan. - April 68 | 393.9 | 4 323.8 | 5 007.5 | 315.1 | 3 781.2 | 3 845.5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Guatemala | 3 | U | Dec. 68 - Dec. 69 | 461.6 | 461.6 | 461.6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 1 | N | March 67 - April 68 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Honduras | 1 | N | March 67 - April 68 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 6 | N | April 67 - March 68 | 8 783.0 | 105 396.0 | 104 025.9 | 4 139.9 | 49 678.8 | 49 231.7 | 1 637.3 | 19 647.6 | 19 470.8 | 529.6 | 6 355.2 | 6 272.6 | 15 370.2 | 184 447.2 | 182 340.3 | X | X |
| Mexico | 2-10 | N | Second half 1969 | 9 282.9 | 111 394.8 | 111 394.8 | 4 579.2 | 54 950.4 | 54 016.2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 3 | N | 1970 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Paraguay | 2-8 | N | 1970 | 36.4 | 455.0 | 455.0 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 2-10 | N | 1972 | 44.5 | 556.3 | 556.3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Peru | 4-1 | U | July - Dec. 70 | 4 292.3 | 53 653.8 | 52 302.6 | 1 644.8 | 19 737.6 | 19 461.3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 7 | MA | Nov. 67 - Jan. 69 | 30 966.8 | 30 966.8 | 30 966.8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Uruguay | 2 | MA | May - July 67 | 45 896.9 | 47 824.6 | 47 824.6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 3-1 | MA | Sept. - Dec. 68 | 5 376.2 | 68 277.4 | 66 024.2 | 1 466.6 | 17 599.2 | 16 085.7 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| Venezuela | 3-4 | MA | Sept. - Oct. 66 | 415.6 | 5 278.1 | 5 278.1 | 129.0 | 1 548.0 | 1 548.0 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 5-12 | MA | Jan. - May 71 | 1 569.9 | 19 977.7 | 20 077.3 | 665.8 | 7 989.6 | 8 045.5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| 10 | U | April - Nov. 70 | 646.3 | 8 208.0 | 8 249.0 | 294.5 | 3 054.0 | 3 067.8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X | X |
| | 10 | MA | April - Nov. 70 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | X |

g/ MA: Metropolitan area of the capital city. N: National. U: Urban. (a) (b) (c) (number of) main cities, including metropolitan area. f/ T: Total. NI: Non-agricultural. A: Agricultural. ...

Annex G

MEAN INCOME OF INDIVIDUAL INCOME-RECIPIENTS OF EACH OCCUPATIONAL STATUS, BY KIND OF ECONOMIC ACTIVITY ESTIMATED ON THE BASIS OF SURVEYS AND CENSUSES

The mean income included in the present Annex was obtained on the basis of the corresponding distributions of income-recipients by levels of income resulting from the surveys and censuses considered. Recourse was had (in the cases indicated in Annex F) to the interpolation of the distribution of frequencies grouped according to income intervals.^{a/}

In each case it is indicated whether it is income received in the main occupation of the group of primary income, or the total income of each income-recipient.

^{a/} The methods used are explained in detail in another document (Oscar Altimir: Dos procedimientos de interpolación de distribuciones de frecuencias agrupadas de acuerdo con el ingreso).

Table G-1
MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Pesos)

| | |
|--------------------------|-----------------------------|
| Country: | ARGENTINA |
| Survey: | 7.20 |
| Income reference period: | March 1970 |
| Type of income: | Income from main occupation |
| Coverage: | Metropolitan area |

| | Estimated mean income | | Mean income adjusted to average prices for the year <u>b/</u> |
|------------------------------------|-----------------------|------------------|---|
| | Monthly | Annual <u>a/</u> | |
| (a) Employees | ... | ... | ... |
| (a.1) Agricultural | ... | ... | ... |
| (a.2) Non-agricultural | 399 | 5 067.9 | 5 335.9 |
| Mining and quarrying | ... | ... | ... |
| Manufacturing | 405 | 5 143.5 | 5 416.1 |
| Construction | 385 | 4 889.5 | 5 148.6 |
| Electricity, gas and water | 597 | 7 581.9 | 7 983.7 |
| Transport and communications | 480 | 6 096.0 | 6 419.1 |
| Commerce, financial establishments | 431 | 5 473.7 | 5 763.8 |
| Other services | 348 | 4 419.6 | 4 653.8 |
| (b) Self-employed | ... | ... | ... |
| (b.1) Agricultural | ... | ... | ... |
| (b.2) Non-agricultural | 541 | 6 492.0 | 6 836.1 |
| Mining and quarrying | ... | ... | ... |
| Manufacturing | 531 | 6 372.0 | 6 709.7 |
| Construction | 540 | 6 480.0 | 6 823.4 |
| Electricity, gas and water | 350 | 4 200.0 | 4 422.6 |
| Transport and communications | 557 | 6 684.0 | 7 038.3 |
| Commerce, financial establishments | 513 | 6 156.0 | 6 482.3 |
| Other services | 591 | 7 092.0 | 7 467.9 |

a/ Coefficient: Employees 12.7; self-employed 12.
b/ Relative price: $\frac{\text{Average}}{\text{Ref. Per.}} = 105.9$

Table G-2
MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Cruzeiros)

| | |
|--------------------------|---------------------------------------|
| Country: | BRAZIL |
| Survey: | Census |
| Income reference period: | August 1970 |
| Type of income: | Total income of each income-recipient |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year b/ |
|---------------------------------------|-----------------------|-----------|--|
| | Monthly | Annual a/ | |
| (a) Employees | 291.18 | 3 582 | 3 371 |
| (a.1) Agricultural | 99.35 | 1 192 | 1 122 |
| (a.2) Non-agricultural | 341.65 | 4 271 | 4 019 |
| Industrial activities | 330.51 | 4 131 | 3 887 |
| Trade in goods | 301.12 | 3 764 | 3 543 |
| Provision of services | 135.50 | 1 694 | 1 594 |
| Transport, storage and communications | 346.50 | 4 331 | 4 075 |
| Social activities | 437.81 | 5 473 | 5 150 |
| Public administration | 578.46 | 7 231 | 6 804 |
| Other activities | 552.77 | 6 910 | 6 502 |
| (b) Self-employed | 237.47 | 2 852 | 2 826 |
| (b.1) Agricultural | 137.47 | 1 650 | 1 635 |
| (b.2) Non-agricultural | 456.41 | 5 477 | 5 428 |
| Industrial activities | 426.76 | 5 114 | 5 068 |
| Trade in goods | 526.15 | 6 314 | 6 257 |
| Provision of services | 266.97 | 3 204 | 3 175 |
| Transport, storage and communications | 447.13 | 5 366 | 5 318 |
| Social activities | 645.12 | 7 741 | 7 671 |
| Other activities | 1 023.62 | 12 283 | 12 172 |

a/ Coefficient: Non-agricultural employees 12.5; self-employed 12; agricultural employees 12.

b/ Relative prices: Minimum wage Average 138.98 = 94.1
Ref. per. 147.69
Prices Average 1 050 = 99.1
Ref. per. 1 060

Table G-3

MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Cruzeiros)

| | |
|--------------------------|---|
| Country: | BRAZIL |
| Survey: | 4.12 |
| Income reference period: | December 1969 to March 1970 ^{a/} |
| Type of income: | Income from main occupation |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year ^{a/} |
|------------------------------------|-----------------------|----------------------|---|
| | Monthly | Annual ^{b/} | |
| (a) Employees | | | |
| (a.1) Agricultural | 92.3 | 1 108 | 1 266 |
| (a.2) Non-agricultural | 351.9 | 4 399 | 5 028 |
| (b) Self-employed | | | |
| (b.1) Agricultural | | | |
| (b.2) Non-agricultural | 455.4 | 5 465 | 5 869 |
| Forestry, hunting and fishing | 86.7 | 1 040 | 1 117 |
| Mining and quarrying | 280.6 | 3 367 | 3 616 |
| Manufacturing | 593.8 | 7 126 | 7 653 |
| Construction | 984.8 | 11 818 | 12 693 |
| Electricity, gas and water | - | - | - |
| Transport and communications | 513.8 | 6 166 | 6 622 |
| Commerce, financial establishments | 569.8 | 6 838 | 7 344 |
| Other services | 389.7 | 4 676 | 5 022 |
| Other activities | - | - | - |

^{a/} Within the income reference period there were no important readjustments in legal wages and the increase in prices was 1 per cent per month.

^{b/} Coefficient: Non-agricultural employees 12.5; self-employed 12.

^{c/} Relative prices: Minimum wages $\frac{\text{Average } 138.98}{\text{Ref. per. } 121.57} = 114.3$
Prices $\frac{\text{Average } 1 050}{\text{Ref. per. } 977.5} = 107.4$

Table G-4
 MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
 (Cruzireos)

| | |
|--------------------------|------------------------------|
| Country: | BRAZIL |
| Survey: | 5-2-2 |
| Income reference period: | September-December 1972 - a/ |
| Type of income: | Income from main occupation |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year g/ |
|------------------------------------|-----------------------|-----------|--|
| | Monthly | Annual b/ | |
| (a) Employees | 475.43 | 5 848 | 5 520 |
| (a.1) Agricultural | 163.81 | 1 966 | 1 856 |
| (a.2) Non-agricultural | 571.17 | 7 140 | 6 740 |
| Mining and quarrying | 400.23 | 5 003 | 4 723 |
| Manufacturing | 624.24 | 7 803 | 7 366 |
| Construction | 483.66 | 6 046 | 5 707 |
| Electricity, gas and water | 1 199.13 | 14 989 | 14 150 |
| Transport and communications | 421.04 | 4 013 | 3 788 |
| Commerce, financial establishments | 518.73 | 6 484 | 6 121 |
| Other services | 602.32 | 7 529 | 7 107 |
| Other activities | 1 118.10 | 13 964 | 13 182 |
| (b) Self-employed | | | |
| (b.1) Agricultural | - | - | - |
| (b.2) Non-agricultural | 760.25 | 9 123 | 8 749 |
| Mining and quarrying | 393.44 | 4 721 | 4 527 |
| Manufacturing | 1 091.61 | 13 099 | 12 562 |
| Construction | 2 510.20 | 30 122 | 28 887 |
| Electricity, gas and water | - | - | - |
| Transport and communications | 961.26 | 11 535 | 11 062 |
| Commerce, financial establishments | 817.86 | 9 814 | 9 412 |
| Other services | 538.75 | 6 465 | 6 200 |
| Other activities | 1 384.53 | 16 614 | 15 933 |

a/ Within the income reference period there were no important readjustments in legal wages and the increase in prices was 0.6 per cent per month.

b/ Coefficients: Non-agricultural employees 12.5; self-employed 12; agricultural employees 12.

g/ Relative prices: Minimum wages $\frac{\text{Average } 205.48}{\text{Ref. per. } 217.66} = 94.4$
 Prices $\frac{\text{Average } 1 514}{\text{Ref. per. } 1 578} = 95.9$

Table G-5

MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Cruzzeiros)

| | |
|--------------------------|---|
| Country: | BRAZIL |
| Survey: | 5-2-2e |
| Income reference period: | September-December 1972 ^{a/} |
| Type of income: | Total cash income of each income-receiptant |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year ^{a/} |
|------------------------|-----------------------|----------------------|---|
| | Monthly | Annual ^{b/} | |
| (a) Employees | 549.52 | 6 849 | 6 465 |
| (a.1) Agricultural | 164.11 | 1 969 | 1 859 |
| (a.2) Non-agricultural | 670.29 | 8 379 | 7 910 |
| (b) Self-employed | 642.76 | 7 713 | 7 397 |
| (b.1) Agricultural | 513.29 | 6 159 | 5 906 |
| (b.2) Non-agricultural | 771.28 | 9 255 | 8 876 |

^{a/} Within the income reference period there were no important readjustments in legal wages and the increase in prices was 0.6 per cent per month.

^{b/} Coefficient: Non-agricultural employees 12.5; self-employed 12; agricultural employees 12.

^{c/} Relative prices: Minimum wage $\frac{\text{Average } 205.48}{\text{Ref. per. } 217.66} = 94.4$
Prices $\frac{\text{Average } 1 514}{\text{Ref. per. } 1 578} = 95.9$

Table G-6
MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Pesos)

| | |
|--------------------------|--------------------------------------|
| Country: | COLOMBIA |
| Survey: | 4.1 |
| Income reference period: | May-June 1970 ^{a/} |
| Type of income: | Total income of each income-reipient |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year ^{a/} |
|----------------------------------|-----------------------|----------------------|---|
| | Monthly | Annual ^{b/} | |
| (a) Employees | 1 076.31 | 13 131 | 12 908 |
| (a.1) Agricultural | 624.66 | 7 621 | 7 491 |
| (a.2) Non-agricultural | | | |
| Mining and quarrying | 1 374.14 | 16 765 | 16 480 |
| Manufacturing | 1 126.35 | 13 741 | 13 507 |
| Construction | 1 260.83 | 15 382 | 15 121 |
| Electricity, gas and water | 1 768.50 | 21 576 | 21 209 |
| Transport and communications | 1 524.73 | 18 602 | 18 286 |
| Commerce, restaurants and hotels | 1 385.63 | 16 905 | 16 618 |
| Financial establishments | 2 651.59 | 32 349 | 31 799 |
| Other services | 1 267.26 | 15 461 | 15 198 |
| (b) Employees | 1 088.07 | 13 601 | 13 370 |
| (c) Self-employed | 1 050.13 | 12 602 | 12 388 |

^{a/} Within the income reference period there were no important readjustments in real wages and the increase in prices was 1 per cent per month.

^{b/} Coefficient: Employees and self-employed 12.2; employees 12.5; self-employed 12.

^{c/} Relative prices: $\frac{\text{Average } 196.6}{\text{Ref. per. } 200.0} = 98.3$

Table G-7
MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Colones)

| | |
|--------------------------|-------------------------------------|
| Country: | COSTA RICA |
| Survey: | 2.1 |
| Income reference period: | June 1966 - June 1967 ^{a/} |
| Type of income: | Income from main occupation |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year ^{g/} |
|----------------------------------|-----------------------|----------------------|---|
| | Monthly | Annual ^{b/} | |
| (a) Employees | | | |
| (a.1) Agricultural | - | - | - |
| (a.2) Non-agricultural | 539.14 | 6 739 | 6 739 |
| Mining and quarrying | 302.21 | 3 778 | 3 778 |
| Manufacturing | 485.88 | 6 074 | 6 074 |
| Construction | 487.69 | 6 096 | 6 096 |
| Electricity, gas and water | 607.58 | 7 595 | 7 595 |
| Transport and communications | 585.06 | 7 313 | 7 313 |
| Commerce, restaurants and hotels | 588.14 | 7 352 | 7 426 |
| Financial establishments | 1 418.03 | 17 725 | 17 902 |
| Other services | 530.83 | 6 636 | 6 636 |
| Other activities | 645.00 | 8 063 | 8 063 |
| (b) Self-employed | | | |
| (b.1) Agricultural | - | - | - |
| (b.2) Non-agricultural | 665.55 | 7 987 | 8 067 |
| Mining and quarrying | 150.00 | 1 800 | 1 818 |
| Manufacturing | 433.28 | 5 199 | 5 251 |
| Construction | 603.33 | 7 240 | 7 312 |
| Electricity, gas and water | - | - | - |
| Transport and communications | 623.31 | 7 552 | 7 628 |
| Commerce, restaurants and hotels | 803.56 | 9 643 | 9 739 |
| Financial establishments | - | - | - |
| Other services | 921.82 | 11 062 | 11 173 |
| Other activities | 254.12 | 3 049 | 3 079 |

^{a/} Within the income reference period there were no important readjustments in legal wages, nor increases in prices.

^{b/} Coefficient: Non-agricultural employees 12.5; self-employed 12.

^{g/} Relative prices: $\frac{\text{Average } 104}{\text{Ref. per. } 103} = 101.0$

Table G-8

MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Colones)

| | |
|--------------------------|-----------------------------|
| Country: | COSTA RICA |
| Survey: | 2-7 |
| Income reference period: | 1971 |
| Type of income: | Income from main occupation |
| Coverage: | Urban areas |

| | Estimated mean income | | Mean income adjusted to average prices for the year |
|----------------------------------|-----------------------|----------------------|---|
| | Monthly | Annual ^{a/} | |
| (a) Employees | | | |
| (a.1) Agricultural | - | - | - |
| (a.2) Non-agricultural | 804.50 | 10 056 | 10 056 |
| Mining and quarrying | 266.00 | 3 325 | 3 325 |
| Manufacturing | 725.88 | 9 074 | 9 074 |
| Construction | 702.62 | 8 783 | 8 783 |
| Electricity, gas and water | 1 171.71 | 14 646 | 14 646 |
| Transport and communications | 723.90 | 9 049 | 9 049 |
| Commerce, restaurants and hotels | 832.60 | 10 408 | 10 408 |
| Financial establishments | 1 543.88 | 19 299 | 19 299 |
| Other services | 811.87 | 10 148 | 10 148 |
| (b) Self-employed | | | |
| (b.1) Agricultural | - | - | - |
| (b.2) Non-agricultural | 952.94 | 11 435 | 11 435 |
| Mining and quarrying | - | - | - |
| Manufacturing | 687.45 | 8 249 | 8 249 |
| Construction | 538.00 | 6 456 | 6 456 |
| Electricity, gas and water | - | - | - |
| Transport and communications | 682.14 | 8 186 | 8 186 |
| Commerce, restaurants and hotels | 956.84 | 11 480 | 11 480 |
| Other services | 1 361.49 | 16 337 | 16 337 |

^{a/} Coefficient: Non-agricultural employees 12.5; self-employed 12.

Table G-9
MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Escudos)

| | |
|--------------------------|-------------------------------|
| Country: | CHILE |
| Survey: | 5-5 |
| Income reference period: | October 1967-February 1968 a/ |
| Type of income: | Income from main occupation |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year c/ |
|------------------------------------|-----------------------|-----------|--|
| | Monthly | Annual b/ | |
| (a) Employees | | | |
| (a.1) Agricultural | - | - | - |
| (a.2) Non-agricultural | 513.76 | 6 473 | 7 386 |
| Mining and quarrying | 639.23 | 8 118 | 9 409 |
| Manufacturing | 463.50 | 5 886 | 6 716 |
| Construction | 415.80 | 4 990 | 5 694 |
| Electricity, gas and water | 810.81 | 10 297 | 12 521 |
| Transport and communications | 569.67 | 7 295 | 8 255 |
| Commerce, financial establishments | 652.12 | 8 282 | 9 450 |
| Other services | 501.56 | 6 169 | 7 039 |
| (b) Self-employed | | | |
| (b.1) Agricultural | - | - | - |
| (b.2) Non-agricultural | 666.45 | 7 997 | 9 221 |
| Mining and quarrying | 817.86 | 9 814 | 11 316 |
| Manufacturing | 518.73 | 6 225 | 7 177 |
| Construction | 548.70 | 6 554 | 7 557 |
| Electricity, gas and water | 749.00 | 8 988 | 10 363 |
| Transport and communications | 940.90 | 11 291 | 13 019 |
| Commerce, financial establishments | 759.65 | 9 116 | 10 511 |
| Other services | 652.39 | 7 829 | 9 027 |

a/ Within the income reference period there was a readjustment of 21.9 per cent in legal wages in January 1968, and the increase in prices was 2.2 per cent per month.

b/ Coefficient: (a) Employees of: mining and quarrying, manufacturing, electricity, transport and commerce, 12.7; construction, 12; other services, 12.3; non-agricultural total, 12.6

(b) Self-employed: 12.

c/ Relative prices: (a) Wages and salaries index: Mining and quarrying $\frac{\text{Average } 1\ 389.7}{\text{Ref. per. } 199.2} = 115.9$

electricity, gas and water $\frac{\text{Average } 1\ 519.7}{\text{Ref. per. } 1\ 250.0} = 121.6$

other sectors $\frac{\text{Average } 1\ 058.7}{\text{Ref. per. } 927.5} = 114.1$

(b) Prices:

$\frac{\text{Average } 946.1}{\text{Ref. per. } 813.3} = 115.3$

Table G-10

MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Pesos)

| | |
|--------------------------|---------------------------------------|
| Country: | MEXICO |
| Survey: | 1970 Census |
| Income reference period: | Second half of 1969 ^{a/} |
| Type of income: | Total income of each income-recipient |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year ^{a/} |
|--------------------------------------|-----------------------|----------------------|---|
| | Monthly | Annual ^{b/} | |
| (a) Employees | 1 198 | 14 376 | 14 132 |
| (a.1) Agricultural | 560 | 6 720 | 6 606 |
| (a.2) Non-agricultural | 1 465 | 17 580 | 17 261 |
| Extraction and refining of petroleum | 2 892 | 34 704 | 34 114 |
| Mining and quarrying | 1 589 | 19 068 | 18 744 |
| Manufacturing | 1 537 | 18 444 | 18 130 |
| Construction | 1 110 | 13 320 | 13 094 |
| Electricity, gas and water | 2 506 | 30 072 | 29 561 |
| Transport and communications | 1 637 | 19 644 | 19 310 |
| Commerce, financial establishments | 1 295 | 15 540 | 15 276 |
| Services | 1 333 | 15 996 | 15 724 |
| Government | 1 694 | 20 328 | 19 982 |
| Other activities | 1 501 | 18 012 | 17 706 |
| (b) Self-employed | 1 233 | 14 796 | 14 544 |
| (b.1) Agricultural | 630 | 7 560 | 7 431 |
| (b.2) Non-agricultural | 1 812 | 21 744 | 21 374 |
| Mining and quarrying | 2 583 | 30 996 | 30 469 |
| Manufacturing | 1 988 | 23 856 | 23 450 |
| Construction | 1 929 | 23 148 | 22 754 |
| Electricity, gas and water | 3 004 | 36 048 | 35 435 |
| Transport and communications | 1 904 | 22 848 | 22 460 |
| Commerce, financial establishments | 1 595 | 19 140 | 18 815 |
| Other services | 1 843 | 22 116 | 21 740 |
| Other activities | 1 714 | 20 568 | 20 218 |

^{a/} Within the income reference period there was no important increase in prices.

^{b/} Coefficient: Employees and self-employed 12.

^{c/} Relative prices: $\frac{\text{Average } 119}{\text{Ref. per. } 121} = 98.3$

Table G-11
MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Balboas)

| | |
|--------------------------|---|
| Country: | PANAMA |
| Survey: | 3 |
| Income reference period: | 1970 |
| Type of income: | Total primary income of each income-recipient |
| Coverage: | National |

| | Estimated mean annual income | Mean income adjusted to average prices for the year |
|----------------------------------|------------------------------|---|
| (a) Employees | 1 706 | 1 706 |
| (a.1) Agricultural | 937 | 937 |
| (a.2) Non-agricultural | 1 859 | 1 859 |
| Mining and quarrying | 1 200 | 1 200 |
| Manufacturing | 1 532 | 1 532 |
| Construction | 1 499 | 1 499 |
| Electricity, gas and water | 1 999 | 1 999 |
| Transport and communications | 1 940 | 1 940 |
| Commerce, hotels and restaurants | 1 749 | 1 749 |
| Financial establishments | 2 743 | 2 743 |
| Services | 1 696 | 1 696 |
| Other activities ^{a/} | 3 063 | 3 063 |
| (b) Self-employed | 766 | 766 |
| (b.1) Agricultural | 445 | 445 |
| (b.2) Non-agricultural | 1 221 | 1 221 |
| Mining and quarrying | 470 | 470 |
| Manufacturing | 534 | 534 |
| Construction | 1 343 | 1 343 |
| Electricity, gas and water | 2 180 | 2 180 |
| Transport and communications | 1 495 | 1 495 |
| Commerce, hotels and restaurants | 1 660 | 1 660 |
| Financial establishments | 8 563 | 8 563 |
| Services | 890 | 890 |
| Other activities ^{a/} | 470 | 470 |

^{a/} Including persons in the Canal Zone and in occupations not clearly specified.

Table G-12

MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY

(Balboa)

| | |
|--------------------------|-----------------------------|
| Country: | PANAMA |
| Survey: | 2-8 |
| Income reference period: | 1970 |
| Type of income: | Income from main occupation |
| Coverage: | National |

| | Estimated mean income | |
|------------------------|-----------------------|----------------------|
| | Monthly | Annual ^{a/} |
| (a) Employees | 162.54 | 2 028 |
| (a.1) Agricultural | 46.61 | 559 |
| (a.2) Non-agricultural | 181.91 | 2 274 |

| | |
|--------------------------|-----------------------------|
| Survey: | 2-12 |
| Income reference period: | 1972 |
| Type of income: | Income from main occupation |
| Coverage: | National |

| | Estimated mean income | |
|------------------------|-----------------------|----------------------|
| | Monthly | Annual ^{a/} |
| (a) Employees | 171.67 | 2 140 |
| (a.1) Agricultural | 89.63 | 1 076 |
| (a.2) Non-agricultural | 184.71 | 2 309 |

^{a/} Coefficient: Employees of: Non-agricultural 12.5; agricultural 12.

Table G-13
MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Thousands of pesos)

| | |
|--------------------------|--|
| Country: | URUGUAY |
| Survey: | 2.1 |
| Income reference period: | May-June 1967 |
| Type of income: | Total primary income of each income-reipient |
| Coverage: | Department of Montevideo |

| | Estimated mean income | |
|-------------------|-----------------------|---|
| | Annual | Adjusted to average prices for the year ^{a/} |
| (a) Employees | 121.7 | 126.8 |
| (b) Self-employed | 142.4 | 167.5 |

^{a/} Relative prices: Employees 104.2
Self-employed 117.6

Table G-14
MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Pesos)

| | |
|--------------------------|---|
| Country: | URUGUAY |
| Survey: | 3.1 |
| Income reference period: | September-December 1968 ^{a/} |
| Type of income: | Total primary income of each income-receipt |
| Coverage: | Department of Montevideo |

| | Estimated mean income | | Mean income adjusted to average prices for the year ^{c/} |
|-------------------|-----------------------|----------------------|---|
| | Monthly | Annual ^{b/} | |
| (a) Employees | 15 165,70 | 192 604 | 186 248 |
| (b) Self-employed | 18 060,96 | 216 732 | 198 093 |

^{a/} Within the income reference period the average increase in consumer prices was 0,7 per cent (accumulated variation of the first half 63,7 per cent and of the second half 1,6 per cent).

^{b/} Coefficient: Employees 12,7; self-employed 12.

^{c/} Relative prices: (a) Wage index $\frac{\text{Average } 1\ 826,1}{\text{Ref. per. } 1\ 887,6} = 96,7$

(b) Consumer prices in Montevideo $\frac{\text{Average } 2\ 217,9}{\text{Ref. per. } 2\ 426,6} = 91,4$

Table G-15

MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Bolivares)

| | |
|--------------------------|---|
| Country: | VENEZUELA |
| Survey: | 6.4 |
| Income reference period: | February-September 1970 |
| Type of income: | Total primary income of each income-recipient |
| Coverage: | Metropolitan area |

| | Estimated mean income | | Mean income adjusted to average prices for the year b/ |
|------------------------------------|-----------------------|-----------|--|
| | Monthly | Annual a/ | |
| (a) Employees | | | |
| (a.1) Agricultural | | | |
| (a.2) Non-agricultural | | | |
| Mining and quarrying | 1 084.10 | 13 768 | 13 837 |
| Manufacturing | 2 367.74 | 30 070 | 30 220 |
| Construction | 945.66 | 12 010 | 12 070 |
| Electricity, gas and water | 1 169.18 | 14 849 | 14 923 |
| Transport and communications | 1 292.41 | 16 414 | 16 496 |
| Commerce, financial establishments | 1 161.17 | 14 747 | 14 821 |
| Other services | 1 074.53 | 13 647 | 13 715 |
| Other activities | 1 117.79 | 14 196 | 14 267 |
| Other activities | 726.30 | 9 224 | 9 270 |
| (b) Self-employed | | | |
| (b.1) Agricultural | | | |
| (b.2) Non-agricultural | | | |
| Mining and quarrying | 1 716.04 | 20 592 | 20 695 |
| Manufacturing | 1 749.00 | 20 988 | 21 093 |
| Construction | 1 462.45 | 17 549 | 17 637 |
| Electricity, gas and water | 1 547.33 | 18 568 | 18 661 |
| Transport and communications | 3 110.40 | 37 325 | 37 512 |
| Commerce, financial establishments | 1 144.45 | 13 734 | 13 803 |
| Other services | 1 893.54 | 22 722 | 22 836 |
| Other services | 2 296.72 | 27 561 | 27 699 |
| Other activities | 639.69 | 7 676 | 7 714 |

a/ Coefficient: Employees 12.7; self-employed 12.

b/ Relative prices $\frac{\text{Average } 108.4}{\text{Ref. par. } 104.1} = 100.5$

Table G-16

MEAN INCOME BY OCCUPATIONAL STATUS AND KIND OF ECONOMIC ACTIVITY
(Bolivares)

| | |
|--------------------------|--|
| Country: | VENEZUELA |
| Survey: | 5.12 |
| Income reference period: | January-May 1971 |
| Type of income: | Total primary income of each income-reipient |
| Coverage: | National |

| | Estimated mean income | | Mean income adjusted to average prices for the year b/ |
|------------------------------------|-----------------------|-----------|--|
| | Monthly | Annual a/ | |
| (a) Employees | | | |
| (a.1) Agricultural | | | |
| (a.2) Non-agricultural | 844.15 | 10 721 | 10 796 |
| Mining and quarrying | 1 734.04 | 22 022 | 22 176 |
| Manufacturing | 853.85 | 10 844 | 10 920 |
| Construction | 753.96 | 9 575 | 9 642 |
| Electricity, gas and water | 927.11 | 11 774 | 11 856 |
| Transport and communications | 843.04 | 10 707 | 10 782 |
| Commerce, financial establishments | 731.91 | 9 295 | 9 360 |
| Other services | 828.19 | 10 518 | 10 592 |
| Other activities | 981.46 | 12 465 | 12 552 |
| (b) Self-employed | | | |
| (b.1) Agricultural | | | |
| (b.2) Non-agricultural | 1 080.69 | 12 968 | 13 059 |
| Mining and quarrying | 2 456.96 | 29 483 | 29 689 |
| Manufacturing | 927.51 | 11 130 | 11 208 |
| Construction | 1 113.85 | 13 366 | 13 460 |
| Electricity, gas and water | 4 732.91 | 56 794 | 57 192 |
| Transport and communications | 975.57 | 11 706 | 11 788 |
| Commerce, financial establishments | 1 060.92 | 12 731 | 12 820 |
| Other services | 1 381.58 | 16 579 | 16 695 |
| Other activities | 249.50 | 2 994 | 3 015 |

a/ Coefficient: Employees 12.7; self-employed 12.

b/ Relative prices: $\frac{\text{Average } 108.4}{\text{Ref. pr. } 107.6} = 100.7$

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Annex H
COMPARISON OF INCOMES PER HOUSEHOLD OF EACH TYPE ESTIMATED ON THE BASIS OF SURVEYS^{1/}
WITH THOSE OF ESTIMATES FROM NATIONAL ACCOUNTS^{2/}
b) Sub-national coverage surveys
(National currency units)

| Country | Survey | Coverage ^{3/} | Year | Total current income of household | | Wages and salaries | | Entrepreneurial income | | Property income | | Current transfers and other income | | | | | | | |
|------------|--------|------------------------|------|-----------------------------------|-------------------|--------------------|-------------------|------------------------|-------------------|-----------------|-------------------|------------------------------------|-------------------|--------|-------|--------|--------|-------|------|
| | | | | Survey | National accounts | Survey | National accounts | Survey | National accounts | Survey | National accounts | Survey | National accounts | | | | | | |
| | | | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| Argentina | 6 | MA | N-T | 13 246 | 12 703 | 1 05 | 5 207 | 5 942 | 0 89 | 2 472 | 4 209 | 0 80 | 2 194 | 1 516 | 248 | 1 290 | 907 | 1 42 | |
| | 6 | MA | N-T | 13 246 | 12 703 | 1 05 | 5 207 | 5 942 | 0 89 | 2 472 | 4 209 | 0 80 | 2 194 | 1 516 | 248 | 1 290 | 907 | 1 42 | |
| | 7-20 | MA | N-T | 9 717 | 12 703 | 0 76 | 5 813 | 5 942 | 0 89 | 2 472 | 4 209 | 0 80 | 2 194 | 1 516 | 248 | 1 058 | 907 | 1 17 | |
| Colombia | 3 | MA | N-T | 33 052 | 19 909 | 1 66 | 14 550 | 9 120 | 1 60 | 9 506 | 7 924 | 0 72 | 5 951 | 2 442 | 1 305 | 3 162 | 412 | 8 142 | |
| | 3 | MA | N-T | 33 052 | 19 909 | 1 66 | 14 550 | 9 120 | 1 60 | 9 506 | 7 924 | 0 72 | 5 951 | 2 442 | 1 305 | 3 162 | 412 | 8 142 | |
| | 4-2 | MA | N-T | 46 185 | 27 653 | 1 67 | 12 851 | 12 348 | 1 18 | 7 506 | 10 268 | 1 13 | 5 951 | 3 729 | 1 862 | 3 162 | 786 | | |
| Costa Rica | 4-2 | MA | N-T | 16 921 | 17 933 | 0 94 | 14 499 | 15 494 | 0 94 | 2 545 | 3 364 | 0 76 | ... | 1 019 | 209 | ... | 2 375 | ... | |
| | 6 | MA | N-T | 16 921 | 17 933 | 0 94 | 14 499 | 15 494 | 0 94 | 2 545 | 3 364 | 0 76 | ... | 1 019 | 209 | ... | 2 375 | ... | |
| | 6 | MA | N-T | 16 921 | 17 933 | 0 94 | 14 499 | 15 494 | 0 94 | 2 545 | 3 364 | 0 76 | ... | 1 019 | 209 | ... | 2 375 | ... | |
| Chile | 2-1 | MA | N-T | 127 877 | 69 618 | 1 84 | 11 789 | 9 892 | 1 18 | 8 098 | 23 088 | 1 24 | 16 672 | 5 125 | 4 272 | 7 273 | 5 499 | 1 32 | |
| | 7 | MA | N-T | 127 877 | 69 618 | 1 84 | 11 789 | 9 892 | 1 18 | 8 098 | 23 088 | 1 24 | 16 672 | 5 125 | 4 272 | 7 273 | 5 499 | 1 32 | |
| | 4-1 | MA | N-T | 127 877 | 69 618 | 1 84 | 11 789 | 9 892 | 1 18 | 8 098 | 23 088 | 1 24 | 16 672 | 5 125 | 4 272 | 7 273 | 5 499 | 1 32 | |
| Ecuador | 4-1 | MA | N-T | 85 286 | 85 286 | ... | 50 663 | 64 622 | 1 28 | 18 638 | 23 059 | 0 64 | ... | 9 710 | 4 461 | ... | 6 836 | ... | |
| | 4-1 | MA | N-T | 85 286 | 85 286 | ... | 50 663 | 64 622 | 1 28 | 18 638 | 23 059 | 0 64 | ... | 9 710 | 4 461 | ... | 6 836 | ... | |
| | 4-1 | MA | N-T | 85 286 | 85 286 | ... | 50 663 | 64 622 | 1 28 | 18 638 | 23 059 | 0 64 | ... | 9 710 | 4 461 | ... | 6 836 | ... | |
| Paraguay | 2 | MA | N-T | 201 318 | 228 520 | 0 88 | 130 096 | 127 252 | 1 02 | 43 088 | 68 822 | 0 63 | 6 662 | 10 283 | ... | 21 468 | 22 163 | 0 27 | |
| | 3-1 | MA | N-T | 201 318 | 228 520 | 0 88 | 130 096 | 127 252 | 1 02 | 43 088 | 68 822 | 0 63 | 6 662 | 10 283 | ... | 21 468 | 22 163 | 0 27 | |
| | 3-4 | MA | N-T | 201 318 | 228 520 | 0 88 | 130 096 | 127 252 | 1 02 | 43 088 | 68 822 | 0 63 | 6 662 | 10 283 | ... | 21 468 | 22 163 | 0 27 | |
| Uruguay | 3-1 | MA | N-T | 27 947 | 18 368 | 1 52 | 220 719 | 231 738 | 0 76 | 53 774 | 184 530 | 0 29 | 3 985 | 16 577 | ... | 617 | 27 892 | 1 70 | |
| | 3-4 | MA | N-T | 27 947 | 18 368 | 1 52 | 220 719 | 231 738 | 0 76 | 53 774 | 184 530 | 0 29 | 3 985 | 16 577 | ... | 617 | 27 892 | 1 70 | |
| | 6-4 | MA | N-T | 27 947 | 18 368 | 1 52 | 220 719 | 231 738 | 0 76 | 53 774 | 184 530 | 0 29 | 3 985 | 16 577 | ... | 617 | 27 892 | 1 70 | |
| Venezuela | 3-1 | MA | N-T | 17 387 | 17 387 | 0 94 | 22 813 | 11 187 | 2 04 | 8 488 | 5 782 | 1 47 | ... | 856 | ... | ... | 230 | ... | |
| | 3-4 | MA | N-T | 17 387 | 17 387 | 0 94 | 22 813 | 11 187 | 2 04 | 8 488 | 5 782 | 1 47 | ... | 856 | ... | ... | 230 | ... | |
| | 10 | MA | N-T | 17 387 | 17 387 | 0 94 | 22 813 | 11 187 | 2 04 | 8 488 | 5 782 | 1 47 | ... | 856 | ... | ... | 230 | ... | |
| | 10 | MA | N-T | 23 809 | 17 387 | 1 37 | 15 309 | 15 309 | ... | 5 777 | 5 777 | ... | ... | 856 | ... | ... | ... | ... | |
| | 10 | MA | N-T | 23 809 | 17 387 | 1 37 | 15 309 | 15 309 | ... | 5 777 | 5 777 | ... | ... | 856 | ... | ... | ... | ... | |
| | 10 | MA | N-T | 23 809 | 17 387 | 1 37 | 15 309 | 15 309 | ... | 5 777 | 5 777 | ... | ... | 856 | ... | ... | ... | ... | |

2/ The aggregate income divided by the total households corresponding to the universe in question.
3/ Adjusted by price changes to the average of the year for which the comparison was made.
4/ Use was made both of official estimates (Annex B) and those which it was necessary to make to complement them (Annexes C, D and E). Mean income per household was obtained by dividing by a number of households consistent with that of the respective survey.
5/ Symbol: N: National, U: Urban area, M: Metropolitan area of the capital city, (n) (m): number of main cities (including metropolitan area), M: Non-agricultural activities, F: Total activities.
6/ Excluding inter-person transfers where it has been possible to discriminate.
7/ Corresponding to gross rents of dwellings (without deducting depreciation).
8/ Including inter-person transfers and capital transfers.
9/ Including inter-person transfers and capital transfers per household for 1 542.

Annex H
**COMPARISON OF INCOMES PER HOUSEHOLD OF EACH TYPE, ESTIMATED ON THE BASIS OF SURVEYS AND
 DEMOGRAPHIC CENSUSES, WITH THOSE OF ESTIMATES FROM NATIONAL ACCOUNTS^{a)}**
 a) Demographic censuses and national coverage surveys
 (National currency units)

| Country | Survey | In- come cover- age | Year | Total current income of households | | Wages and salaries | | Entrepreneurial income | | Property income | | | Current transfers and other income | | | | | |
|------------|--------|------------------------------|------|--|-----------------------------------|--------------------|---------------|-----------------------------|-------------------------|-----------------|-----------------------------|-------------------------|--|---------------------------------------|----------------------------|----------------|--|--|
| | | | | (1) Survey d/ g/ | (2) National accounts g/ | (3) | (4) Survey | (5) National accounts | (6) Ratio (4)/(5) | (7) Survey | (8) National accounts | (9) Ratio (7)/(8) | (10) Survey | (11) National accounts Total | (12) Ratio (10)/(11) | (13) Survey | (14) National accounts Survey | (15) National accounts Survey |
| Brazil | 4-12 | NA | 1970 | ... | ... | ... | 5 015 | 5 203 | 0.95 | 1 864 | 3 098 | 0.60 | ... | ... | ... | ... | ... | ... |
| Brazil | Census | N | 1970 | 4 986 | ... | ... | 3 018 | 4 125 | 0.73 | 1 692 | 2 803 | 0.58 | ... | ... | ... | 345 | ... | ... |
| Brazil | 5-2-1 | NA | 1972 | ... | ... | ... | 7 795 | 7 983 | 0.97 | 3 070 | 5 103 | 0.60 | ... | ... | ... | ... | ... | ... |
| Brazil | 5-2-2 | N | 1972 | 12 973 | ... | ... | 5 762 | 6 236 | 0.92 | 3 575 | 4 895 | 0.74 | 489 | ... | ... | 3 147 | ... | ... |
| Colombia | 4-1 | N | 1970 | ... | ... | ... | 13 928 | 12 979 | 1.07 | 6 890 | 10 391 | 0.66 | ... | ... | ... | ... | ... | ... |
| Colombia | 2-1 | NA | 1967 | ... | ... | ... | 10 497 | 11 963 | 0.87 | 2 212 | 2 771 | 0.80 | ... | ... | ... | ... | ... | ... |
| Costa Rica | 4 | N | 1971 | 14 448 | 17 578 | 0.82 | ... | 10 612 | ... | 3 849 | ... | ... | ... | ... | ... | ... | ... | ... |
| Costa Rica | 5-6 | N | 1960 | 11 332 | 17 933 | 0.63 | 6 809 | 8 651 | 0.79 | 2 667 | 5 888 | 0.45 | 1 001 | 1 019 | 0.98 | 1 019 | 2 375 | 0.43 |
| Chile | 5-5 | NA | 1963 | ... | ... | ... | 7 575 | 10 454 | 0.72 | 2 783 | 6 652 | 0.42 | ... | ... | ... | ... | ... | ... |
| Honduras | 1 | N | 1967 | 1 396 | 2 295 | 0.61 | ... | 1 133 | ... | 952 | ... | ... | ... | ... | ... | ... | ... | ... |
| Honduras | 1 | NA | 1967 | 2 123 | ... | ... | 1 425 | ... | ... | 564 | ... | ... | ... | ... | ... | ... | ... | ... |
| Mexico | 6 | N | 1967 | 22 023 | ... | ... | 12 564 | 11 022 | 1.06 | 5 946 | 12 496 | 0.48 | 2 352 | ... | ... | 1 161 | ... | ... |
| Mexico | Census | N | 1969 | ... | ... | ... | 12 267 | 13 072 | 0.94 | 5 948 | 12 380 | 0.48 | ... | ... | ... | ... | ... | ... |
| Panama | 2-8 | N | 1970 | ... | ... | ... | 1 595 | 1 647 | 0.97 | ... | 656 | ... | ... | ... | ... | ... | ... | ... |
| Panama | 3 | N | 1970 | 2 595 | 2 669 | 0.97 | 1 657 | 1 647 | 0.99 | 345 | 656 | 0.53 | 297 | 205 | 200 | 161 | 160 | 1.01 |
| Panama | 2-10 | N | 1972 | ... | ... | ... | 1 896 | 1 922 | 0.96 | ... | 626 | ... | ... | ... | ... | ... | ... | ... |
| Venezuela | 5-12 | NA | 1971 | ... | ... | ... | 15 942 | 16 478 | 0.97 | 6 388 | 5 090 | 1.13 | ... | ... | ... | ... | ... | ... |

a/ The aggregate income divided by the total households corresponding to the universe in question.
 b/ Adjusted by price changes to the average of the year for which the comparison was made.
 c/ Use was made both of official estimates (Annex B) and those which it was necessary to make to complement them (Annexes C, D and E). Mean income per household was obtained by dividing by a number of households consistent with that of the respective survey.
 d/ Excluding inter-person transfers where it has been possible to discriminate.
 e/ The totals were not included where it was not possible to obtain an acceptable minimum estimate or where the comparison was made for primary income generated in non-agricultural activities.
 f/ Corresponding to gross rents of dwellings (without deducting depreciation).
 g/ Corresponding, in principle, to the total income per household received by employees.
 h/ Corresponding, in principle, to total income per household received by self-employed.
 i/ Including capital transfers.
 j/ In this estimate, the sum of the dividends and interest received by the households has probably been underestimated owing to the presentation of the official estimates of the remaining components of the geographical income, total profits of the corporations, including the taxes affecting them, and the interest on the production of the corporations. The estimates of the geographical income, total profits of the corporations, including the taxes affecting them, and the interest on the production of the corporations, obtained as a balancing item.

Annex I

DETAILED CLASSIFICATION OF SOURCES AND TYPES OF INCOME AND
THEIR RELATION TO THE CONCEPTS OF THE
COMPLEMENTARITY SYSTEM 17

| Detailed classification of sources and types of income | Items of account A of the Complementary System <u>a/</u> |
|--|--|
| 1. Compensation of employees | |
| 11. Gross direct earnings, in cash | 1-i |
| 111. Gross customary receipts (in the reference period), in cash | |
| 1111. Salaries, wages, day wages | |
| 1112. Receipts for overtime | |
| 1113. Bonuses and additional wages | |
| 1114. Family allowance <u>b/</u> | |
| 1115. Tips, commissions and others | |
| 112. Gross seasonal receipts | |
| 1121. Seasonal bonus | |
| 1122. Share in profits <u>c/</u> | |
| 1123. Awards and bonuses | |
| 1124. Vacations and others | |
| 113. Extraordinary receipts (awards, etc.) | |
| 12. Discounts and current deductions (by the employers) | |
| 121. Direct taxes | 15-i |
| 122. Contributions to social security | 15-ii |
| 123. Union contributions | |
| 124. Other current transfers to private non-profit institutions | 15-iii |
| 125. Net contributions to private pension funds | 16 |
| 126. Net life insurance premiums | 17 |
| 127. Accident insurance premiums | 14 |
| 13. Net direct earning, in cash | |
| 131. Net customary receipts (in reference period), in cash | |
| 132. Net seasonal receipts | |
| 1321. Seasonal bonus | |
| 1322. Share in profits | |

| Detailed classification of sources and types of income | Items of account A of the Complementary System <u>a/</u> |
|--|--|
| 1323. Awards and bonuses | |
| 1324. Vacations and others | |
| 133. Extraordinary receipts | |
| 1331. Out of work subsidy | |
| 1332. Awards and others | |
| 14. Earnings in kind | 1-i |
| 1401. Food and beverages | |
| 1402. Housing and installations | |
| 1403. Clothing | |
| 1404. Medical assistance | |
| 1405. Education | |
| 1406. Transport | |
| 1407. Others | |
| 15. Employers' contributions | 1-ii/iii |
| 151. Social security | |
| 152. Family subsidies' fund | |
| 153. Private pension fund | |
| 154. Mutual funds | |
| 155. Collective insurance systems | |
| 2. Income of members from production co-operatives | |
| 21. In cash | 2-i |
| 22. In kind | 2-ii |
| 2201. Food and beverages | |
| 2202. Housing and installations | |
| 2203. Clothing | |
| 2204. Medical assistance | |
| 2205. Education | |
| 2206. Transport | |
| 2207. Others | |
| 3. Entrepreneurial income | 3-i/ii |
| 31. Net receipts, in cash | |
| 311. Income (net of outlays) accrued from own business or industry | |
| 3111. Customary withdrawals | |
| 3112. Extraordinary withdrawals | |
| 3113. Other liquid income received from own business | |

| Detailed classification of sources and types of income | Items of account A of the Complementary System <u>a/</u> |
|---|--|
| 312. Income (net of outlays) obtained as farmer from own or rented farm | |
| 313. Professional fees and similar, and income from private classes, net of outlays | |
| 314. Commissions and similar income, net of outlays | |
| 32. Receipts in kind | |
| 321. Value of goods and services withdrawn from own business | |
| 322. Value of domestic production for self-consumption | |
| 4. Property income | |
| 41. Imputed rents | |
| 411. Net rents from dwellings occupied by their owners | 6-iv |
| 412. Net rent from other constructions | 6-v |
| 42. Interest | 6-iii |
| 4201. Receivable on deposits | |
| 4202. On loans | |
| 43. Dividends | 6-ii |
| 431. In cash | |
| 432. In shares | |
| 44. Rents of dwellings, received from tenants | (Included in 3) |
| 45. Rents of land | |
| 451. In cash | } 6-iii |
| 452. In kind | |
| 46. Others | |
| 5. Current transfers received | |
| 51. Pensions and social security retirement benefits | 11-i |
| 52. Others | 11-ii/iv |
| 521. Grants to students | |
| 522. Social assistance grants, public assistance, etc. | |
| 523. Unemployment insurance, benefits, etc. | |
| 524. Indemnity for dismissal | |

| Detailed classification of sources and types of income | Items of account A of the Complementary System <u>a/</u> |
|--|--|
| 6. Insurance benefits | |
| 61. Private pension funds benefits | 12 |
| 62. Accident insurance benefits | 10 |
| 63. Benefits of policies of life insurance annuity policies | 13 |
| 7. Payments of current transfers (made directly by the receivers; not by deductions from income receipts) | |
| 71. Direct taxes | 15-i |
| 72. Social security contributions | 15-ii |
| 73. Current transfers to private non-profit institutions | 15-iii |
| 74. Net contributions to private pensions | 16 |
| 75. Net life insurance premiums | 17 |
| 76. Accident insurance premiums | 14 |
| 8. Inter-personal transfers and other current receipts n.s.o.c. | |
| 8001. Contributions for maintenance | |
| 8002. Contributions received from supplementary member or from persons outside the family | |
| 8003. Cash gifts received from persons outside the household | |
| 8004. Other current receipts n.s.o.c. | |
| 9. Extraordinary capital transfers | (Account B of the system) |
| 91. Capital transfers | |
| 9101. Inheritances, legacies, etc. | |
| 9102. Lottery prizes and games of chance | |
| 92. Capital profits on sales of assets | |
| 9201. From bearer securities | |
| 9202. From goods and chattels | |
| 9203. From real estate | |

| Detailed classification of sources and types of income | Items of account A of the Complementary System <u>a/</u> |
|--|--|
| 93. Other extraordinary receipts not specified or classified | |
| 10. Income from sources not identified and not specified or classified | |

a/ See Table 12 of the text.

b/ The System of National Accounts and the Complementary System include in the earning of employees contributions imputed to the employers' obligation to pay directly family allowances, indemnities, pensions, etc., and recommend the registration of the real payments which employers make for these obligations as unrequited current transfers to the households. Under labour laws family allowances are added on to the wage in the majority of Latin American countries; the employees who respond to the surveys do not usually differentiate them from other customary receipts and national estimate practices in force in the region tend to include them with wages and salaries.

c/ Although this is strictly a form of distributing the operating surplus, both the national estimate practices in force in the region and the employees who respond to surveys include them among the payments which the employees receive for their work.

