# Poverty in Latin America and the Caribbean.
# An Inventory: 1980-95

José Antonio Mejía and Rob Vos

# ACKNOWLEDGEMENTS

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> Ask an engineer how much is two and two and
> he/she will answer: Afour≅, but an economist
> would probably answer: AI do not have enough data≅.
> However, ask a lawyer how much it is
> and the likely answer will be:
> Ahow much do you want it to be?≅.
> (*Old joke among economists*)

## Introduction

With the Eighth Replenishment of its resources in 1994, the IDB has committed itself to give high priority to poverty reduction in its lending program. Loans targeted towards poor beneficiaries will be eligible for a ten percentage point increase in the level of bank financing. Adequate information about poverty and about living conditions in general is required for the implementation of this policy. There are no exact and undisputed measures of poverty, such that it is difficult to obtain an engineer's answer to the question how many poor there are in the countries of the region. The economist's problem (at least one of them) is real in the sense that data from household surveys and other sources show many deficiencies in terms of reliability, coverage and timeliness. Available measures at best are rough estimates in most cases. Poverty estimates are further obviously highly sensitive to the way in which poverty and welfare are defined and to where the line is drawn between being poor and non-poor, hence the lawyer's answer is close at hand.

In this paper we will not intend to derive improved poverty measures for the Americas. Our pretensions are much more modest. The purposes of the paper are to provide an inventory of

available poverty estimates for the countries of the region derived from a variety of studies and data sources (albeit mainly household surveys), to establish the degree of comparability of these estimates over time and across countries and to systematize the differences in conceptualization and methods of measurement explaining why poverty estimates may diverge so much. This should also help to put into perspective the poverty estimates for the region as included in the IDB=s *Economic and Social Data Base* (ESDB) and other sources compiling such data.

In this effort, we limit ourselves to the "income approach" to poverty, that is the definition and measurement of poverty in terms of a lack of resources required to purchase a minimum bundle of essential goods. As explained in Part 1 of this paper, this is only one possible approach to poverty measurement, albeit perhaps the most commonly used one and also the one central to the Bank's criteria to determine which of its operations qualify as "poverty targeted".

The search for a the "technically appropriate" or "politically acceptable" poverty line is often a source of controversy and may consume considerable amount of precious time in policy debates. Providing greater transparency in the definitions and measures of poverty in the countries of the region is one of the objectives of this paper. The accompanying documentation to the available estimates usually cautiously spells out in some reasonable detail the method applied to define the poverty line. In doing so, the basic elements of arbitrariness in setting the poverty line come to the fore. Bearing this in mind, it is the more surprising so little is being done to show the degree of sensitivity of poverty estimates to the specific poverty line definition and to show the robustness of poverty comparisons across time and/or across different population groups. In this inventory we will look into these issues. From a policy point of view such a sensitivity analysis is likely to be much more useful than obtaining political consensus with regard to a specific poverty line. The point can be well argued from welfare theory. Poverty reduction programs often use the poverty incidence or headcount ratio (the percentage of the population below the established poverty line) as a key (if not single) indicator for the identification of the program's target population and program performance. The implicit social welfare function applied here assigns zero marginal utility to benefits accruing to the non-poor. This type of discontinuity in the distribution of welfare could lead to a decision to eschew policies that would improve welfare of those who are poor by many definitions, but whose incomes place them just above some arbitrary poverty line. Further, with this specific welfare function a transfer from rich to poor no longer necessarily implies an improvement in social welfare. For instance, if a subsidy benefiting the population groups with incomes just above the poverty line is being cut in order to finance a transfer targeted towards the poorest, the poverty incidence may in fact *increase*, in the case that the disposable incomes of the groups that see a cut in subsidies fall below the poverty line and the transfer to the poorest is not large enough to lift them out of poverty.[1]

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[1]    See Ravallion (1992) and Deaton (1994) for more elaborate arguments of this point. The type of discontinuity in the social welfare function as indicated implies that the so called 'principle of transfers' (Dalton 1920), i.e. it no longer necessarily holds that a transfer from rich to poor enhances social welfare.

Transparency and consistency when defining poverty is also crucial when analyzing the trade-off between growth and distribution. Poverty reduction maybe achieved via increases in average incomes, a reduction in income inequality, or a combination of both. However, the relative importance of achieving average income growth versus a reduction in inequality depends on where the poverty line is drawn. The higher the poverty line, the less important redistribution becomes and the more important overall economic growth will be.

These considerations are not meant to say that the poverty headcount ratio is no useful statistic. It is easy to understand, meaningful and it is hard to imagine policy discussions on poverty without it. However, poverty lines will always remain arbitrary and, although there is ample reason to invest in improvements, the empirical basis of poverty estimates is likely to remain flawed in some significant degree. For policy purposes it is not recommendable to rely on a single measure or a measure which has not been tested for its robustness to identify the poor by subgroups and changes in their economic conditions. The above considerations also make clear that it is also essential to take account of the distribution of welfare, both below and above the poverty line, in assessing the implications of particular policy measures. In this inventory we also include poverty gap estimates and measures of income inequality.

Through this effort we hope to provide a critical guide to the use of poverty estimates from the available sources, including those recently introduced in the ESDB, by clarifying the applied definitions and measurement procedures and showing sensitivity of the estimates to the applied measurement concepts.

It is not our pretension to be comprehensive in this inventory. To a large extent coverage has been limited to years and countries for which we had direct access to survey data allowing to check poverty estimates by alternative definitions and permitting some sensitivity analysis. Obviously, an inventory of this sort should preferably be a continuous effort incorporating new estimates and analyses as they become available.

The remainder of this paper is organized in two main parts. Part 1 discusses the concepts and measurement methods of welfare, poverty and inequality as used explicitly or implicitly to obtain the estimates reported in this study. It also gives a summary of the inventory of poverty data and discusses the main sources of the often widely ranging estimates provided by alternative studies and sources. Part 2 provides the detailed country-by-country inventory as well as a sensitivity analysis of trends in poverty when using alternative poverty lines.

# PART 1

# Concepts and Definitions of Poverty and Inequality

There is a vast literature dealing with the conceptualization and alternative approaches to the measurement of poverty and inequality. We will not try to fully summarize this literature here, nor is it our pretension to contribute to it. Instead the objective is to highlight the main issues that are relevant for this inventory by pointing at the conceptual issues surrounding poverty line definitions, the role of prices, the choice of units of measurement, adjustments for underreporting of incomes, etc.

Differences in the treatment of these aspects are sources of the discrepancies, often in a wide range, of the incidence and severity of poverty in the region. Table 1 shows the poverty estimates as estimated for the Economic and Social Data Base of the IDB. These estimates are based on a uniform poverty line of US$ 60 per person per month (i.e. US$ 2 per day) expressed in constant purchasing power parity of 1985. Below we discuss the derivation of this poverty line. The estimates in Table 1 were calculated directly from available household survey data using income as the key welfare concept. Poverty estimates are shown for both adjusted and non-adjusted income data, that is adjustment of the survey estimates for alleged underreporting of incomes after comparison with national accounts data (see below for a discussion of the adjustment method). As shown in Table 2 these estimates are not always consistent with those derived by other studies. As a matter of fact, in many cases there appear to be huge differences. In Part 2 we provide the more detailed overview of available estimates for each country. Clearly, for most countries the estimation of the extent of poverty may vary greatly depending on the source one uses. The table also indicates that a conclusion regarding whether the poverty has increased or decreased may be sensitive to the particular study at hand. For instance, in the case of Greater Buenos Aires in Argentina estimates of the poverty incidence for 1989 range from 4% of the population (IDB) to 51 % (World Bank 1995) and for 1992 the World Bank reports a poverty rate of 19% and the IDB in 1994 reports the poverty incidence to be 5%. Clearly, in this case not only magnitudes differ but also the estimated direction of change: the IDB reports a (slight) increase, the World Bank a (substantial) reduction.

Below we systematize in general terms sources of differences in poverty estimates. In Part 2 these are specified, to the extent possible, country by country.

# Poverty Definitions

The poverty estimates reported in this inventory all share a similar and most commonly used poverty concept, that is poverty is defined as a shortfall of a person's *level of receipts or resources* below some established poverty line. "Receipts" are usually proxied by the flow of income or, alternatively, by the flow of consumable commodities per person during a certain time period (e.g. per year or per month). Data availability have led most poverty studies for Latin America to use per capita household *income*, rather than consumption, even though many analysts prefer the latter measure as it is less unstable and survey estimates are considered more reliable (but see below). Ignoring for the moment how best to measure "receipts", two important questions arise: what should one include in "receipts" and what level constitutes poverty?

Considering the first question, most would agree that well-being, and thus also poverty, is about much more than income and consumption. Income or the command over consumable commodities in fact refer to the *means* to satisfy human needs.

A more direct way of identifying needs satisfaction is to measure material well-being in its multiple dimensions, such as nutritional and health status, life expectancy, education and housing conditions. Methods can be considered to aggregate such *social indicators* into a single measure,[2] however, there is no adequate theory underlying such an aggregate so that weights for the aggregation are inevitable arbitrary and it is more informative (both from an analytical and policy point of view) to keep the different indicators separate. The direct (social indicators) and indirect (income) measures of well-being are best seen as complements to be used in conjunction rather than used singly in the analysis of poverty and well-being.[3] While income or consumption maybe able to capture 'private receipts', they may understate welfare of individuals if these also enjoy non-private receipts in the form of subsidies and access to public services which are rationed and non-market priced. Such benefits may be imputed to household income or consumption under certain assumptions,[4] but survey information often falls short to make such estimations. Alternatively, social indicators may serve to identify the results of having access to public services, along with other means, as reflected in health status or attained educational level, although in the analysis the causality between means and social well-being will need to be determined. Another important reason to consider income/consumption and social indicators as complements, is that the former usually only express *current* receipts of needs satisfiers and do not capture command of assets or *accumulated* well-being. Most social indicators do reflect the latter by components of welfare and the combination of the two methods enables to say

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[2]    These include composite indicators such as the Physical Quality of Life Indicator (see e.g. Drewnowski 1974, Morris and Liser 1977), the composite index of Insatisfaction of Basic Needs (Boltvinik 1992) or the Human Development Index (UNDP 1990).

[3]    See among others Sen (1981), Dasgupta (1993), and Vos (1992, 1996) for discussions.

[4]    See Meerman (1979), Selowsky (1979), Vos (1982, 1988) ,and Van der Walle (1996) for discussions and applications to LDCs.

something about the chronic or transient nature of poverty by identifying whether individuals are poor both in terms of income/consumption and a set of social indicators, or just in terms of either one of them.[5]

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**Summary**

!     This inventory is about income/consumption definitions of poverty only, but it is important to realize its limitations. The 'income approach' to poverty is in fact only an *indirect* way of measuring poverty since it defines the problem in terms of a shortfall of the private *means* to satisfy basic human needs. Further, the income and consumption concepts used for the available poverty measurement do not account for other resources satisfying needs such as (free) access to publicly provided basic services.

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## *The Poverty Line*

The second important question raised in the previous sub-section was: what welfare level determines the cut-off point between poor and non-poor? The poverty line is in essence a welfare threshold: those whose resources do not allow them to cross it are considered to be poor. The threshold is usually arranged to be a bundle of commodities that would satisfy the minimum basic needs regarding nutrition, housing, clothing, education and health of an individual. The value of this basket is then the poverty line, and the poor are those whose income or consumption is below that minimum.

The most common approach is to build the poverty line definition around nutritional requirements. A first step is to estimate the monetary value of a basic food basket which reflects the daily minimum nutritional requirements of an individual. The cost of the food basket is subsequently multiplied by the *inverse* of the share of food consumption in total consumption or income (Engel coefficient) to obtain the minimum income or poverty line. In many studies for Latin America this multiple is assumed to be 2.0 for urban areas and 1.75 for rural areas, expressing food shares of respectively 0.5 and 0.57 (see e.g. CEPAL 1991). The World Bank (1990), Psacharopoulos *et al.* (1993), Morley (1994) and the IDB (1996) take a somewhat different approach. Instead of estimating poverty lines based on national estimates of the cost of the minimum consumption basket, they set an arbitrary poverty line of US\$ 60 in 1985 PPP (in 1995 the equivalent in current dollars was on average US\$ 46). The key objective of these estimates is to obtain internationally comparable poverty lines. The national poverty lines derived by CEPAL and the international threshold level bear some relationship, however. Roughly, the US\$ 60 poverty line (two dollars per day person) is the average of the national

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[5]     See for instance Sen (1981), Kaztman (1989), and Vos (1996) for further elaborations of this point.

poverty lines.[6] These studies set the international threshold for extreme poverty, that is income levels below the cost of the basic food basket, at US$ 30 in 1985 PPP, hence applying implicitly a uniform Engel coefficient of 0.5.

The definition of the poverty line is likely to remain controversial as several arbitrary decisions are required in the process. Resource allocations for poverty alleviation based on a single measure such as the poverty incidence, obviously will be highly sensitive to the choice of the poverty line. Unfortunately, it is a common practice in the design of social programs in the countries of the Region to use rather mechanically this simple indicator, provoking much political debate about the appropriateness of the poverty line per se. However, as argued further below, much of the controversy may be proven unnecessary if poverty rankings are compared for a range of poverty lines. Nevertheless, it seems relevant to repeat several of the main caveats regarding poverty line definitions here:[7]

a.　　*Minimum food requirements*: The minimum adequate calorie levels are themselves subject to some controversy and standards may vary from situation to situation. In practice, also the decision regarding calorie requirements require some arbitrary decision. Furthermore, minimum nutritional requirements are usually only established as a national average. In reality, nutritional needs will vary by age group, activity, and so on. For instance, children need less food than adults. Some studies propose the use of equivalence scales to adjust for such differences (Deaton and Muellbauer 1980). Adequate measurement of poverty would thus require adjustments of the average food requirements per person for the actual household composition, i.e. food consumption per adult-equivalent. The available empirical evidence appears to indicate, however, that the *ranking* of poverty by socio-economic groups, regions and demographic factors is little affected by the choice between income or consumption *per person* or *per adult-equivalent* (e.g. Lipton 1995).

b.　　*Minimum non-food requirements and the Engel coefficient*: The choice of the appropriate food share or Engel coefficient to determine the minimum non-food requirements is not a matter of simple straightforward empirical observation. As food shares tend to change with income levels, it should be decided which Engel coefficient to use to define the poverty line. The most common approach is to apply that of the household or group of households with a level of food consumption which equals the minimum food requirements. Data problems, such as the lack of a household income and expenditure survey of recent date, may hamper such an establishment of the 'correct' Engel coefficients, and hence the widespread use of a proxy derived from international comparative studies (such as the 0.5 estimate used by CEPAL, the

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[6]　　See Part 2 for a detailed explanation on the origins of the poverty lines used by the IDB.

[7]　　See, among others, Ravallion (1992) and Deaton (1995) for more elaborate methodological discussions.

World Bank and other international organizations, and in their footsteps, many national studies). Table 3 provides an overview of food share coefficients as derived from income and expenditure survey data for the countries of the Region. The table indicates a great variety in consumption patterns. There is quite some disparity in the income quintiles that are closest to the 50% food share. In some cases the range of households with a food share near 50% is large enough and relevant for low-income groups that it might justify the use of a stylized Engel coefficient of 0.5. However, in many other food shares vary more widely across income groups and a more careful empirical analysis would be required to derive the appropriate Engel coefficient for the estimation of the poverty line. The data that allowed to construct Table 3 do not allow to estimate which household groups (by quintiles or deciles) would be able to satisfy their minimum food intake requirements. The table also shows the implied 'multiplier factors' (the inverse Engel coefficients) to derive the poverty line once the cost of the basic food basket is known. Clearly, a relatively small change in the Engel coefficient may have a large impact on the poverty line.

Apart from the data issue, it may be questioned whether the notion of minimum food requirements sits well with the consumption behavior as expressed by the Engel curve. In setting the poverty line as indicated above, a possible trade-off between food and other expenditures in household expenditure decisions are not taken into account. Even households with just enough money to buy the minimum amount of calories do not spend all their income on food (their typical Engel coefficient is about 0.7), suggesting the existence of such a trade-off between food and non-food spending. For this reason, Ravallion (1992) has proposed the use of two poverty lines: an upper and lower bound poverty line. As above, Ravallion sets a food (or extreme) poverty line which is equivalent to the amount of resources needed to satisfy the minimum nutritional requirements respecting the consumption habits of the population. Subsequently it should be determined which households could just reach this minimum using all their resources, and thus deriving from these observations what percentage of their resources these households devote to non-food goods. The food poverty line is incremented by this proportion creating what is Ravallion labels as the "lower bound" poverty line. The "upper bound" poverty line is determined through a more common procedure, that is it is equal to the income (or consumption) level of the households whose food expenditures are just enough to satisfy the minimum nutritional requirements.

c.     ***Savings and the poverty line***: The poverty line as defined above would not allow households to save as all resources would be required to satisfy basic needs. Hence, they would not be able to contribute to the accumulation of their human and physical capital stock enhancing their capabilities to pull themselves up by their own efforts. Inclusion of such capabilities in the welfare concept underlying poverty measurement has been strongly advocated by Sen (1981, 1992). However, one may also use this argument in support of the conventional poverty line definition as the threshold welfare level, since at that level one expects *zero* net savings capacity and hence would provide a strong efficiency case for concentrating policy efforts to those below rather than above the poverty line.

d.     ***Food, relative prices and poverty***: It is always dangerous to measure living conditions using only a part of consumption, even when referring to a biological need which is food.

Poverty lines will be higher where the relative price of food is higher, even though households may benefit from lower prices for other basic needs.

e.      ***Poverty comparisons over time:*** For comparisons over time and across groups, regions or countries it is important to have a consistent definition of the poverty threshold, that is poverty defined as the ability to purchase a *given* bundle of goods. This is a strong argument for maintaining the same poverty line in real terms (i.e. adjusting for changes in the cost-of-living and differences therein by regions). Others have argued, however, that poverty should move with the general standard of living or even that poverty is an entirely relative concept. While such considerations may be relevant for policy decision-making at a particular point in time, shifting poverty lines will hamper poverty comparisons over time and across regions, countries or poverty groups.

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**Summary**

!       Poverty line definitions contain many arbitrary decisions and therefore poverty estimates should always be used with great caution. One should always try to obtain clarity about the poverty line definitions and assumptions first.

!       For poverty comparisons (over time, across countries, across population groups) it is important to apply a consistent welfare threshold (i.e. reflecting a bundle of goods that can satisfy a determined set of needs, such as calorie needs).

!       For policy assessments it may be relevant, however, to take account of the general standard of living, and possibly, regional differences therein.[8]

!       Given the high degree of arbitrariness of poverty line definitions, it is important to perform sensitivity analyses of poverty estimates and poverty rankings among groups and regions for different poverty lines (see also below).

!       Just counting the poor and not asking how poor they are provides a very weak basis for discovering how much resources regions or population groups need to overcome poverty conditions (in terms of human capital development, subsidies or other transfers) in a context of resource-constrained policies for poverty reduction. If there are data to calculate the poverty incidence, then there will also be the information necessary to estimate the poverty intensity (or poverty gap) and the distribution of resources among the poor (see Box 1).

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[8]        For instance, if economic and urban growth implies increased cost and time to travel to and from work or if there are great differences in urban and rural consumption patterns, than a fixed absolute poverty line for all households over time may make little sense from a policy point of view. However, for making poverty comparisons, one should be able to account for the changes or differentiations in poverty lines that may be introduced for such reasons.

## *Units of Measurement*

Differences in units of  measurement can be another source of discrepancy between poverty estimates. Several issues can be at stake here, but in practice the two most salient issues tend to be:
(i)      is it better to use income or consumption as the measure of welfare?
(ii)     do we take the household or the individual to identify poverty?

**Income *versus* consumption?**
In much of the literature there is a tendency to make a strong case in favor of consumption as the appropriate measure of welfare.[9] The standard arguments in favor of using consumption are that welfare is best defined as the utility an individual gets from consuming goods and services and that families or individuals have a tendency to 'smoothen' consumption over time by saving and dissaving.  However, the empirical evidence for the hypotheses of consumption smoothening is at best mixed.[10]  Moreover, the only means of many poor people to 'smoothen' consumption is to dissave (i.e. sell assets) because of their lack of access to credit markets.

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[9]

See Lipton and Ravallion (1995) for an overview of the discussion and a defense of using consumption rather than income. For other discussions more skeptical about the consumption measure, see Deaton (1995) and EUROSTAT (1994).  Sen (1981, 1985), emphasizes other limitations of monetary measures, like the non-inclusion of welfare benefits individuals may obtain from access to public services.

[10]

See e.g. Deaton (1995: Chapter 6) who shows that there appears to be little evidence from LDCs or elsewhere that lifetime income profiles are detached from lifetime consumption profiles as would be required by the consumption smoothening hypothesis.

## Box 1:  Poverty Measures

Poverty can be estimated using a group of poverty measures known as the Foster-Greer-Thorbecke (FGT) index, which measures the incidence, the depth and the intensity of poverty.

Headcount ratio: How do we measure poverty?  The easiest way is to count the number of poor individuals.  The headcount ratio ($P_0$), also known as "poverty incidence", is defined as the proportion of the total population that those individuals considered to be poor represent.

$$P_0 = q \, / \, n$$

where q is the number of poor individuals, and n is the total population.  This is one of the most popular measures of poverty because is easy to understand and interpret.  One of its limitations is that is not sensible to the depth of poverty, that is, how far below the poverty line is the income (consumption) of a poor individual.

Poverty gap: This is a poverty measure that takes into consideration the depth of poverty.  The poverty gap ($P_1$) is estimated using the following formula

$$P_1 = \frac{1}{n} \sum_{n=1}^{q} \frac{(z - y_i)}{z}$$

where $y_i$ is the per capita income (estimated as the total income of the household divided by the number of members in it) of the i individuals (i = 1,2,...,q) that are under the poverty line z.  This measure is sensible to the income deficit of the poor in relation with the poverty line.  Besides, the poverty gap ($P_1$) can be interpreted as the mean income deficit of a poor individual relative to the poverty line, multiplied by the headcount ratio.

$$P_1 = \frac{q}{n} \frac{(z - \overline{y}_p)}{z}$$

FGT index: A shortfall of the to previous poverty measures is that they are not sensitive to income redistribution among the poor, trespassing the transfer axiom.  The poverty measure that satisfies this axiom is the one proposed by Foster, Greer, and Thorbecke (1984), represented by the following formula

$$P_a = \frac{1}{n} \sum_{n=1}^{q} [\frac{(z - y_i)}{z}]^a$$

where $y_i$ is the per capita income (estimated as the total income of the household divided by the number of members in it) of the i individuals (i = 1,2,...,q) that are under the poverty line z, y $\forall$ is a non-negative real number, which magnitude indicates how much weight is given to the intensity of poverty of the poorest among the poor.  The Foster-Greer-Thorbecke (FGT) index, $P_\forall$ is sensitive to the distribution of income (consumption) among the poor, and therefore, to the intensity of poverty, for $\forall > 1$ values.  For $\forall > 1$, the value of the index will increase when an income transfer among is made, from a poor individual to and individual that is less poor, regardless of the size of the transfer.  In this study, we complement the headcount ratio and the poverty gap with the Foster-Greer-Thorbecke index, $P_2$ ($\forall = 2$), which is a poverty measure that is sensitive to income distribution

$$P_2 = \frac{1}{n} \Sigma [\frac{(z - y_i)}{z}]^2$$

It is easy to prove that when $\forall = 0$ we get the headcount ratio ($P_0$), and if $\forall = 1$ we get the poverty gap ($P_1$).

There are also welfare theoretical arguments in favor of using income since it is a better indicator of the opportunities of a household or individual: a low level of consumption may not be a consequence of a lack of resources but of a *choice*. Further arguments for using income are that possibly not all expenditures can be identified with consumption in the same period (durables), making consumption present a less stable picture than income, or that expenditures may have a lag to income changes (due to habit formation or just physical impossibility of instantaneous reaction), meaning that consumption may reflect a distribution of resources of the past.[11]

In practice, however, the choice between income or consumption is much more driven by either data reliability or data availability. The more compelling argument in favor of using consumption data is that of data reliability: the difficulties in measuring income are much more severe than those in measuring consumption, particularly for incomes related to self-employed activities, rental and other non-wage incomes. These factors generally lead to the assumption that household surveys tend to substantially underreport incomes. On the other hand, at least in the case of Latin America, the reason to use income rather than consumption is simply that income data are available for many more countries and at greater frequency. In the inventory discussed further below, most estimates are based on income data for this particular reason.

In both cases, consumption or income, international comparability is hampered because income and consumption definitions tend to vary across countries. Unfortunately, also when comparing survey data over time per country, caution is needed because of changing definitions and differences in the time of the collection of the survey data.

**Individuals *versus* households**
Since survey data are collected at the level of the household, almost inevitably the welfare measure must be based on income or consumption totals for the household, not for the individual. Even if surveys collect information about income for individual household members, there will be many important income sources not fully attributable to individual household members, such as income out of family businesses (e.g. farms) or property income on assets shared by the household. For consumption this holds even more strongly, as the household members typically share many "public goods", that is consumption items that cannot be assigned to specific individuals, such as the house or the television set. Thus, usually one takes the *household* as the unit whose welfare is measured and subsequently one divides household income or expenditure between its members to obtain the welfare for each *individual*.

If the rule is simply dividing by the number of household members - as is typically done in the poverty estimates surveyed below - three important assumptions are made: (i) welfare is equally distributed within the household; (ii) needs are the same for each household member; and (iii) there are no economies of scale in household consumption.

Intra-household distribution. The scarce evidence (e.g. Haddad and Kanbur 1990, Deaton 1995),

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11     It is possible, of course, to use the same argument in the inverse way, saying that expenditure may be accelerated or postponed in the expectation of income changes.

suggests the intra-household distribution may in fact be highly unequal. Again, however, standard household surveys usually do not collect information on the allocation of resources within the household. Mostly consumption is measured at the household level or -at best- only a part of consumption is measured for each household member.

Household composition. As pointed out earlier, sometimes differences in needs, such as presumed differences between adults and children, are taken into account by using 'equivalence scales' which maybe either imposed exogenously or constructed statistically from survey data (EUROSTAT 1994, Deaton and Muellbauer 1980). However, the literature on this issue does not provide fully satisfactory results (Deaton 1995). Some evidence for developing countries seems to suggest that the poverty ranking by different population groups or regions is surprisingly little affected by the choice between income or expenditure *per person* or *per adult equivalent* (Lipton 1995).

Household size. A related issue is that of 'economies of scale' in the household. Per capita welfare measures may not be strictly comparable across households of different sizes, as the income attributed to a person from a 5 member household may imply higher welfare than the same income per capita from a single member household if there are positive economies of scale. The available evidence seems to confirm the existence of economies of scale, but studies mostly are restricted to estimating scale parameters for food items (Lanjouw and Ravallion 1993; Deaton 1995). The case in favor of making a correction is that economies of scale are plausible. Detailed and more comprehensive (i.e. not just confined to food items) empirical studies per country would be required to make such adjustments. An argument against such a correction would be that the additional complexity might hamper transparency and comprehensiveness for policy makers.

*Summary*

!  There are good welfare economic reasons for using both income and consumption measures of welfare. Data reliability considerations mostly favor the use of consumption data; data availability considerations usually decide in favor of income estimates.

!  Poverty estimates are best estimated by individuals, rather than by households. Use of equivalence scales to adjust for demographic differences at the household appear to have fairly little impact on poverty rankings, while the existence of economies of scale is plausible but we lack an empirical basis to make *a priori* corrections for this.

## Data Reliability and Adjustments for Underreporting of Incomes

As indicated above, in Latin America there is greater availability of regular information at the household level of income data than estimates for consumption. This relates to the fact that most survey systems in the countries of the region implement what are essentially labor force surveys on a more or less regular basis. These surveys usually include an estimate of labor and other incomes. Income and Expenditure Surveys, with great detail on consumption, tend to be

conducted at much greater intervals (often once every ten year). This is an important reason why most studies on poverty tend to use income as the welfare measure.

In general, there are three main problems with income data from household surveys: (i) sampling errors; (ii) the definition of income and (iii) underreporting of actual income by household members.

*Sampling Errors*

It should be recalled that the basic information to calculate poverty indicators is provided by sample-based surveys.  This implies that all information is subject to sampling errors, and precise estimates simply do not exist. In other words, publications showing poverty estimates with many decimals or income data specific to the "peso" give a false idea of precision as each number is subject to a sampling error. Incomes are estimated within a probability interval and so is the rate of poverty.

Statistical offices in Latin America, unfortunately, have not developed the practice of calculating sampling errors for all main survey variables, and usually do  not do so for the income variable. As a consequence we do not know the confidence intervals for the key variables used in these survey.  As an illustration we estimated standard errors of per capita incomes and consumption for the surveys of Paraguay 1995, Ecuador 1995, and Costa Rica 1995 (see Table 3a).  Outcomes show that in for these selected cases standard errors for income variables appear to be within an acceptable range of between 1 and 3 per cent of the mean. The highest sampling error (4.58%) was found for the income per capita of the poor households in the 1995 survey of Paraguay. This confidence interval for per capita income would imply, for instance, that the poverty incidence for the Metropolitan Area of Asunción would lie in the range of 2.8 and 3.4 percent in 1995 (rather than being 3% as reported for non-adjusted income data in Table 1).  The table also suggests that the standard errors for consumption tend to be smaller than those for income; as the data for Ecuador shows, confirming the earlier observation that consumption measures tend to be more reliable than income estimates.  For another example of an estimate of standard errors for consumption data see Grosh and Muñoz (1996, p. 161), they present a summary table using data from the Jamaica Survey of Living Conditions.

*Income Definitions*

Income definitions tend to vary over time and across countries depending on what is covered in the survey (cf. Table 4). In most cases it comprises at least wages and salaries, and usually also some estimate of self-employed income, other non-wage income (such as interests and dividends) and some coverage of transfers (pensions, etc.). The coverage of non-wage incomes tends to be quite disperse across countries, while other sources of (usually non-cash) income like self-consumption, transfers in kind or imputed rent of owner-occupied dwellings are usually absent.  The problem widens not only in terms of choosing what elements to include but once the choice is made, a new problem arises, how to give a monetary value to some of the non-monetary income sources.   Another important issue in this context is whether the survey

questionnaire should refer to before or after-tax incomes. Again treatment of this issue tends to differ across country (thus hampering international poverty comparisons), but also lack clarity per se in many surveys. To the extent we may assume that the poor pay little to no direct income tax and wage incomes are reported after payroll taxes withheld at the firm level, as is mostly done, then it is reasonable to assume the different conceptualizations have little impact on poverty estimates, although they likely will have on estimates of overall inequality.

Table 4 shows that in terms of geographical coverage most countries in the region now have household survey systems with national coverage (that is covering urban and rural population). However, not all countries have continuous survey systems, such as Guatemala (for which the last available household survey is that of 1989), Guyana and Nicaragua. Other countries with important rural populations (such as Ecuador and Bolivia) only have regular urban surveys. In the case of Ecuador, though, there is a recent (1995) Living Standards Measurement Survey (LSMS) with rural coverage. For Argentina and Uruguay no surveys covering the rural population exist. Several other countries though, like Paraguay and Peru, have recently enhanced the coverage of their regular household surveys to cover both urban and rural populations. The surveys referred to in the table are those with most regular implementation.[12] Most of these are labor force surveys aimed at measuring employment, unemployment and labor market conditions. Income measurement is usually confined to a set of basic income concepts referred to in the table as the "standard definition of income". These usually involve some direct questions to the interviewed household members regarding their income sources, including salaries, self-employment income, transfers incomes and a general category of other rents or capital income. Non-monetary income sources or self-consumption are typically not covered. The application of the 'standard' income concept does not imply that income estimates are strictly comparable across countries as there tend to be important differences with regard to the degree of detail in the survey questions and methods of collecting the data. The estimation of wage and salaries is usually considered to be more reliable than that of the other categories. Specific modules to capture self-employed incomes (e.g. through measuring household production and cost in some detail) are rarely included. Only a few regular survey systems include consumption data, which is explained to a great deal for the complications it brings in terms of questionnaire design, survey time, and costs.

## *Underreporting of Income*

It is generally assumed that household surveys underestimate in a significant degree the actual incomes of households and individuals. To establish whether there is underreporting or not, some kind of benchmark is required. The typical approach, largely due to Altimir (1987), is to compare survey aggregates with National Income Accounts estimates. This approach is valid to the extent one may assume that national accounts are of good quality and variables can be properly

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12 .     Except in the case of Mexico. The table refers to the income and expenditure survey which since 1992 is being implemented at a bi-annual frequency. Mexico also has a quarterly labor force survey which covers the major cities only.

compared. If this is a valid assumption then comparison of aggregate survey income estimates to that of national accounts data should give a reasonable idea of the degree of underreporting in the aggregate. However, the methods that are typically applied in practice to adjust for the alleged underreporting suffer from important pitfalls and hence have to be taken with the necessary degree of caution.

The crudest approach (applied in, among others, Psacharopoulos *et al.* 1993; Morley 1994; and IDB=s ESDB) is to compare income per capita from the survey and GDP per capita from the national accounts and adjust all survey incomes by the factor by which the latter exceeds the former. This method implies a number of **assumptions**: (a) the degree of underreporting is the same for all households or income earners (i.e. it does not affect the distribution of income, but would affect poverty estimates); (b) underreporting is the same for all types of income sources; (c) average income of the survey population is the same as that of the population not covered by the survey[13]; (d) national accounts aggregates provide a more reliable and complete estimate of average aggregate household income than the primary household survey data; and (e) GDP per capita is an adequate comparable measure to that of average per capita disposable household income, which, it may well not be.[14]

A more precise way of correcting for underreporting would be to create an adjustment factor for each income category and for each group in society, since it is said that the rich and the very poor are more prone than the rest of the population to underestimate their income. CEPAL (1990, 1994) uses this approach by correcting by income source to the extent availability of disaggregated national accounts data permit. However, also in this case one must be willing to accept assumptions (a) and (c) mentioned above.

Another approach (taken by Londoño and Székely, 1997) is to adjust for the per capita private *consumption* estimate of the national accounts. This may take away some of the possible objections against using GDP per capita (see footnote 14), but will still require acceptance of assumptions (a) through (d). Moreover, we would also have to assume *zero* household savings in the aggregate by taking this route which would be an additional drawback. Nevertheless, as an illustration we re-estimated poverty indices for a few countries using private consumption from the national accounts as the benchmark for detecting possible underreporting of survey estimates. As one might expect, adjustment factors are lower if we use private consumption to

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[13]    For instance, if the survey data only cover urban areas, the adjustment for alleged underreporting of urban per capita incomes by comparing them to GDP per capita from the national accounts will be biased if there are urban-rural income differences, which is likely to be the case in practice.

[14]    GDP refers to gross domestic product which includes a value for depreciation of the country's capital stock ("gross") and net factor income paid to abroad ("domestic"). If National Accounts provide the estimate, the Net National Income concept would already be a much better approximation. If National Accounts, as they should, include an institutional income and outlay account for households the disposable income of households would be an even better starting point. However, National Accounts in many countries of the region do not report these variables, and hence the need to recur to the cruder approach to correct for underreporting. See text for further discussion.

compare against the income per capita reported on the surveys and hence poverty indices will turn out higher than when using the GDP per capita-based adjustment factor. For Costa Rica in 1995 the adjustment factor using GDP per capita is 1.8244 for income and 1.0784 for private consumption. Using the latter, the national poverty incidence estimate would rise from 7% to 16%. For Ecuador 1995 the adjustment factor with GDP is 1.3976, while that for private consumption it is close to 1, which would change the poverty incidence from 23 to 33%. In the case of Paraguay 1995 the adjustment factor with GDP per capita is 1.113 and with private consumption is very close to 1 and poverty would increase from 6 to 8% using the latter factor.

Ideally, the surveys themselves should include more control variables, such as consumption, household assets and so on, or one should be able to use some other independent reliable source, such as tax data systems or social security information. However, in practice such information often is unavailable or considered even less reliable than the survey data or national income accounts. This implies, unfortunately, the need to rely in practice on the crude and indirect methods as suggested above. Given the likely large degree of error contained in such adjustment methods it is the more important to provide a sensitivity analysis of the degree to which such adjustments affect poverty or other estimates as compared to using the raw survey data (see e.g. Table 1).

As shown by Table 5, the discrepancies in estimations of per capita income in household surveys and national accounts estimates are huge in some cases. Hence the decision to adjust survey data through this method or not undoubtedly has a substantial impact on poverty estimates.

*Summary*
!  It should be recognized that the basic source for poverty estimates are sample surveys. This implies all estimates are always subject to a confidence interval.
!  Reliability checks of income and consumption estimates from survey data are important. Often national accounts aggregates are the only available comparable estimates. It is important to recognize the limitations and critical assumptions underlying the adjustment method.
!  To the extent survey data only allow for incomplete income measures and income definitions in surveys differ across countries, both national poverty estimates and cross-country comparisons likely become more accurate after adjusting using the more standard national income concept. The other caveats still hold, however.

## *Prices, PPP=s and All That Jazz*

A poverty line based on certain basic nutritional requirements and the consumption patterns of some groups of the population refers to these habits at a particular point in time. Therefore, once

its value is calculated for the reference period, of the survey, it is necessary to express the poverty line in real terms in order to have comparable poverty estimations over time. As simple as this may sound, the choice of the appropriate deflator may be less obvious and use of different deflators tends to be an important source of differences in poverty estimates.

Most commonly, the overall Consumer Price Index (CPI) is used, since it includes most of the items which are part of the basic basket. Again, cautious treatment is required:

- The CPI may cover more than just the components of the basic consumer goods constituting the poverty line. A more precise approach would be to use the consumer price index for food items (and, even more specifically, the price changes for the food items contained in the basic food basket) to adjust the cost of the basic food basket and subsequently apply the Engel coefficient to obtain the poverty line at prices of the year of the survey. A drawback of this more precise procedure is that one has to assume that there are no substitution effects due to price changes between food and non-food items in the basic consumption basket or between food items in the basic food basket. For example, a recent World Bank study on Argentina showed that even the choice of price index may influence the poverty incidence estimates. For the Greater Buenos Aires in 1993 this study estimates a poverty incidence of 17.6% if the poverty line is inflated using the basic food basket price index, a poverty incidence of 22.5 % if the one used is the price index for all food items, while if the overall CPI is used the estimate goes up to 26.1%.

- The price index should be consistent with the reference period of the survey data. Particularly in periods with high inflation, this may have an enormous impact on poverty estimates. Data is usually adjusted to the month before the survey was taken since people usually answer based on their previous month experience. To underline the obvious, when deflating or inflating poverty lines and income data from surveys, accuracy with respect to the period they are transported to is important, since, as said, in countries with high inflation a one month discrepancy can make a substantial difference in the poverty estimates.

Differences in the use of international conversion factors is another source of differences in poverty estimates by the studies surveyed in this inventory. The most well known study done for Latin America and the Caribbean using a comparable poverty line for various countries is that by Psacharopoulos et al. (1993). In this study the poverty line for the region is set at the equivalent of US$ 60, in purchasing power parity (PPP) of 1985, per capita per month. Psacharopoulos et al. obtain poverty lines in the local currency equivalent using the PPP conversion factors for GDP provided by Summers and Heston (1988). However, also here, a note of caution is required.

The PPP conversion factors are constantly revised and updated. Further, PPPs refer to consumption patterns based on surveys of the 1970's or mid 1980's at best, i.e. during of before the crisis and hyperinflation of the 1980's. PPPs may have changed substantially. So much is supported by recent updates of PPPs. Hence important to check PPP conversion factors used

when trying to make international comparisons through a common international poverty line. Table 6 shows the PPP conversion factors for GDP provided by Summers and Heston in their 1988 paper and those provided in their newest recalculations (Penn World Table Mark 5.6a) for GDP and consumption. The inclusion of the PPP for consumption is important because they were used to estimate the IDB poverty lines based on the US$ 60 PPP 1985, they almost completely explain the differences between the estimates presented by Psacharopoulos et al and those made by the IDB.

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*Summary*
!       The choice of the appropriate deflator to update poverty lines should focus on the reference period of the survey, and use the CPI consistent with that reference period (annual average, quarterly or monthly data) to obtain poverty lines for the period of analysis.
!       Given that poverty lines are to reflect a basic food basket of consumer goods it is more appropriate to use consumption PPPs in international comparisons. When comparing results with those of other studies it is important to check which conversion factors were used.

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# Inequality Measures

As indicated in the introduction, poverty and inequality are closely related concepts and poverty analysis without consideration of distributional aspects may be a poor guide for policies. The poverty gap is one simple measure to take account of inequality among the poor (see Box 1). The most popular measure for measuring income inequality, however, remains the Gini coefficient. Both the poverty gap and the Gini coefficient and related income shares of population quintiles are reported as part of this inventory.

This section is not meant to give a detailed discussion of inequality measures, rather to give a brief overview of the limitations in measuring inequality through Gini coefficients and income shares based on the household data for the countries in the region.

Table 7 gives an overview of Gini coefficients estimates for the region for the 1990-1995 period. The differences in the estimates for the same year are mostly due to differences in the way the Gini coefficient is estimated. Even though the same data is used to estimate them, the number of points used to calculate them has an impact on the final result (Kakwani 1980), that is, it makes a difference if income data by deciles or by percentiles is used to make the calculation. As with poverty estimates, the Gini coefficient also depends on whether individuals or households reporting zero income are included, on how the income of those in the upper income brackets ("censored" income cases) are handled, and on how income is adjusted (e.g. is there one adjustment factor for all income sources or are there different adjustment factors for different income sources?).

The Gini coefficient is based on the Lorenz curve which graphs the share of the population against the share of the income received. The Gini takes a value between 0 and 1, that is between perfect equality (everybody has the same income) and complete inequality (one person receives all income).  We report the Gini coefficients here, because it is the most widely used income measure. Some studies have suggested that using alternative measures of aggregate inequality tends to yield similar results (e.g. Anand and Kanbur 1993). However, this need not always hold for specific country cases and/or for sub-groups of the population (See Szekely 1995a,b for the case of Mexico).

*Changes in inequality.* One limitation of aggregate inequality measures such as the Gini index is that it does not reveal how the distribution changes over time. That is, a change in the index may be associated with, for instance, either a redistribution of income from top to middle class or from low- to middle-income groups. Combination of the Gini with information on income shares may help to overcome this shortcoming.

Many of the *data limitations* described in the previous section related to poverty measures, apply similarly to income or consumption-based inequality measures, such as incomplete coverage of the population by survey data, income underreporting, and incomplete income definitions. For comparative country analysis and analysis over time, it is important to take account of possible changes in coverage and income concepts.

For the measurement of aggregate inequality it is important that *the income (or expenditure) concept is comprehensive.* Omission of non-monetary income or incomplete reporting of non-wage incomes can result in serious biases where such sources are important in different income deciles.

Adjustments in the aggregate for underreporting of incomes, for instance by using national accounts estimates, are of little use if no additional information is available about differences in the degree of underreporting by income groups is available. Application of the same overall adjustment factor, as in some poverty studies, would not influence aggregate inequality measures. However, using distinct adjustment factor by income source (e.g. as applied by CEPAL 1991, Altimir 1987) would definitively affect the inequality measure, but also introduce a bias as it is also unknown how the underreporting is distributed by income source. In these cases it may be better to use unadjusted survey data for the inequality measure.

*The Gini coefficient is sensitive to the number of observations used to estimate it*. The value of the coefficient may differ significantly whether based on, say, a decile or a percentile distribution. As shown by, for instance Kakwani (1980), the accuracy of the Gini increases with the number of income groups used for its estimation. Such differences in the calculation method sometime underlie differences in Gini coefficients for the same year for the same country from the same survey data. If there is access to the primary data source it is recommendable to use a percentile rather than a decile distribution. If only much more aggregate income shares are

available Gini coefficients should be based on the estimation of a parametric Lorenz curve.[15]

*The unit of measurement is important*. Differences in equality measures may emerge whether one uses per capita household income data to rank the observations in the distribution or that of individual income receivers. Both may be relevant for different analytical purposes. When comparing inequality measures it is important to know whether the unit of measurement is the same.

*What observations from the survey data are included and which not?* Another important decision when measuring inequality is whether or not to include those households with zero income, and how to treat the households at the top of the income distribution in the case survey questionnaires apply close-ended income categories.   Many of the surveys have an upper limit to recorded income.   That limit is given a certain code e.g. "999998" to indicate a case where income is higher than the number of digits allowed in the entry.   The inclusion or exclusion of such observations at the extremes of the income distribution obviously will affect the estimation of the Gini coefficient.

Some studies deal with the zero declared income cases by imputing an income based on the characteristics of the individual based on the income of those individuals with similar characteristics that have reported incomes.   The World Bank's study "Poverty in Colombia" (1994) is an example of this technique.

An alternative solution is to impute the income distribution of the upper bracket based on the behavior of the Lorenz curve generated with data from previous surveys in which the problem did not appear to be acute. This approach may be valid only if it is plausible to assume that the distribution of income at the top of the curve has not changed.

A better solution is in the hand of the designers of the surveys, and it is to ensure an adequate number of cells to report income in the questionnaires so that "space censorship" does not become an issue when the data is coded for data processing.

The IDB estimates presented in this study deal with the above mentioned problems in the following way:
1. Household with zero income are excluded from the estimations of poverty and inequality.
2. Individuals, who are members of the labor force, but do not declare an income are excluded from the measurement of inequality and poverty among the labor force or by income source. However, these individuals are included in the estimations of poverty and inequality for the general population, where they are treated as non-income receiving household members.
3. Household with "space censored" income are excluded from the estimations of poverty and

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[15]      At the World Bank Chen, Datt and Ravallion (1995) have developed a procedure called POVCAL to fit a parametric Lorenz curve from available distribution data (for at least five income groups) and tends to yield results very close to the actual distribution (if one has access to the primary data, one can test this by comparing POVCAL results from the aggregate distribution data with a calculation of the Gini from the full data set).

inequality, and treated as cases with non-reported income.

*Summary*

! The estimates of Gini coefficients are affected by whether they are calculated using point data from the whole survey or using a parametric Lorenz curve.

! To get a more accurate view of the income distribution in a country it is important to complement the use of the Gini coefficient with other measures of inequality.

! It is important to be particularly careful in the treatment of zero income cases and truncated upper income brackets, and to adequately document how such cases were treated for the reported results.

! Inequality measures are subject to the same caveats regarding comparability, and definition of income measures, as discussed in the previous section on poverty estimates.

**Table 1: IDB Estimates of Poverty Incidence in Latin America and the Caribbean for Poverty Line of US$ 60 p.c. per month (1985 PPP)**

| | | Adjusted | | | | Non-adjusted | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Urban | | Rural | Total | Urban | | Rural |
| Country | year | | Metro Area | All urban | | | Metro Area | All urban | |
| Argentina | 1980 | ... | 2 | ... | ... | ... | 8 | ... | ... |
| | 1986 | ... | 7 | ... | ... | ... | 24 | ... | ... |
| | 1989 | ... | 4 | ... | ... | ... | 21 | ... | ... |
| | 1994 | ... | 3 | 5 | ... | ... | 18 | 24 | ... |
| | 1995 | ... | 5 | ... | ... | ... | 20 | ... | ... |
| Bolivia | 1986 | ... | ... | 35 | ... | ... | ... | 52 | ... |
| | 1989 | ... | ... | 34 | ... | ... | ... | 45 | ... |
| | 1993 | ... | ... | 30 | ... | ... | ... | 30 | ... |
| | 1994 | ... | ... | 26 | ... | ... | ... | 30 | ... |
| | 1995 | ... | ... | 32 | ... | ... | ... | 32 | ... |
| Brazil | 1979 | 28 | ... | 14 | 59 | 34 | ... | 20 | 61 |
| | 1989 | 51 | ... | 39 | 81 | 56 | ... | 41 | 82 |
| | 1995 | 31 | ... | 23 | 61 | 45 | ... | 37 | 76 |
| Chile | 1989 | 12 | ... | 10 | 23 | 38 | ... | 34 | 55 |
| Colombia | 1980 | ... | ... | 14 | ... | ... | ... | 33 | ... |
| | 1986 | ... | ... | 12 | ... | ... | ... | 27 | ... |
| | 1989 | ... | ... | 9 | ... | ... | ... | 22 | ... |
| | 1992 | ... | ... | 12 | 33 | ... | ... | 23 | 50 |
| | 1993 | 19 | ... | 9 | 33 | 37 | ... | 19 | 54 |
| | 1994 | 16 | ... | 4 | 31 | 30 | ... | 13 | 54 |
| Costa Rica | 1981 | 15 | ... | 9 | 21 | 44 | ... | 26 | 59 |
| | 1989 | 4 | ... | 3 | 5 | 26 | ... | 14 | 34 |
| | 1990 | 10 | ... | 5 | 14 | 24 | ... | 14 | 32 |
| | 1991 | 10 | ... | ... | ... | 29 | ... | ... | ... |
| | 1992 | 9 | ... | ... | ... | 25 | ... | ... | ... |
| | 1993 | 8 | ... | ... | ... | 21 | ... | ... | ... |
| | 1994 | 8 | ... | ... | ... | 18 | ... | ... | ... |
| | 1995 | 7 | ... | ... | ... | 17 | ... | ... | ... |
| | 1996 | 8 | ... | ... | ... | 20 | ... | ... | ... |
| Dominican Rep. | 1989 | 25 | ... | ... | | 37 | ... | ... | ... |
| Ecuador | 1987 | ... | ... | 18 | ... | ... | ... | 30 | ... |
| | 1988[1] | ... | ... | 10 | ... | ... | ... | 14 | ... |
| | 1993[1] | ... | ... | 16 | ... | ... | ... | 17 | ... |
| | 1994 | 22 | ... | 11 | 36 | 34 | ... | 20 | 53 |
| | 1995 | 23 | ... | 9 | 42 | 33 | ... | 17 | 56 |
| El Salvador | 1989 | ... | ... | 19 | ... | ... | ... | 37 | ... |
| | 1990 | ... | ... | 22 | ... | ... | ... | 47 | ... |
| | 1992 | 41 | ... | 22 | 58 | 59 | ... | 40 | 76 |
| | 1993 | 41 | ... | 22 | 59 | 61 | ... | 41 | 80 |
| | 1994 | 40 | ... | 22 | 62 | 54 | ... | 35 | 77 |
| | 1995 | 34 | ... | 16 | 55 | 52 | ... | 33 | 76 |

**Table 1 continued: IDB Estimates of Poverty Incidence in Latin America and the Caribbean for Poverty Line of US$ 60 p.c. per month (1985 PPP)**

| | | Adjusted | | | | Non-adjusted | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Urban | | Rural | Total | Urban | | Rural |
| Country | year | | Metro Area | All urban | | | Metro Area | All urban | |
| Guatemala | 1986 | 63 | ... | 34 | 72 | 77 | ... | 50 | 85 |
| | 1989 | 62 | ... | 36 | 76 | 67 | ... | 40 | 81 |
| Honduras | 1986 | ... | ... | 29 | ... | ... | ... | 40 | ... |
| | 1989 | 62 | ... | 32 | 77 | 72 | ... | 45 | 85 |
| Jamaica | 1989 | 11 | ... | 4 | 16 | 20 | ... | 8 | 30 |
| Mexico | 1984 | 14 | ... | 9 | 32 | 22 | ... | 17 | 36 |
| | 1989 | 19 | ... | ... | | 22 | ... | ... | ... |
| | 1992 | 20 | ... | 9 | 48 | 23 | ... | 11 | 53 |
| | 1994 | 21 | ... | 11 | 50 | 25 | ... | 14 | 55 |
| Panama | 1979 | 28 | ... | 22 | 45 | 28 | ... | 22 | 45 |
| | 1989 | 36 | ... | 22 | 45 | 36 | ... | 22 | 45 |
| Paraguay | 1983 | ... | 4 | ... | ... | ... | 13 | ... | ... |
| | 1984 | ... | 3 | ... | ... | ... | 14 | ... | ... |
| | 1985 | ... | 4 | ... | ... | ... | 10 | ... | ... |
| | 1986 | ... | 4 | ... | ... | ... | 13 | ... | ... |
| | 1987 | ... | 3 | ... | ... | ... | 11 | ... | ... |
| | 1988 | ... | 2 | ... | ... | ... | 8 | ... | ... |
| | 1989 | ... | 2 | ... | ... | ... | 4 | ... | ... |
| | 1990 | ... | 2 | ... | ... | ... | 6 | ... | ... |
| | 1991 | ... | 3 | ... | ... | ... | 6 | ... | ... |
| | 1992 | ... | 2 | ... | ... | ... | 4 | ... | ... |
| | 1993 | ... | 2 | ... | ... | ... | 4 | ... | ... |
| | 1994 | ... | 5 | 8 | ... | ... | 5 | 8 | ... |
| | 1995 | ... | 2 | 6 | ... | ... | 3 | 8 | ... |
| | 1996 | ... | ... | ... | ... | ... | 2 | 7 | ... |
| Peru | 1985-86 | ... | | 21 | | ... | ... | 23 | ... |
| | 1990 | ... | 58 | ... | | ... | 87 | ... | ... |
| Uruguay | 1981 | ... | ... | 5 | | ... | ... | 9 | ... |
| | 1989 | ... | ... | 4 | | ... | ... | 8 | ... |
| | 1995 | ... | ... | 4 | | ... | ... | 4 | ... |
| Venezuela | 1981 | 4 | ... | 2 | 13 | 9 | ... | 5 | 23 |
| | 1989 | 9 | ... | 7 | 27 | 30 | ... | 25 | 55 |
| | 1995 | ... | ... | ... | ... | 30 | ... | 26 | 50 |

**Source:** IDB (1996). Estimates based on household survey data.

'Adjusted' and 'Non-adjusted' estimates refer to poverty incidence with or without adjustments for alleged underreporting of incomes (or consumption) as reported in the household surveys. See text for a further discussion.

1)Provisional data based on household observations rather than individuals like the rest of the estimates.

**Table 2: Poverty Incidence in Latin America and the Caribbean 1989-1995 (various sources)**

| Country | Source | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---|---|---|---|---|---|---|---|---|
| Argentina | Psacharopoulos | 6 | ... | ... | ... | ... | ... | ... |
| (Greater Buenos Aires) | Morley | *22* | ... | ... | ... | ... | ... | ... |
| | WB | 51 | 36 | 26 | 19 | 18 | ... | ... |
| | CEPAL | ... | *16* | ... | *10* | ... | *10* | ... |
| | IDB | 4 | ... | ... | ... | ... | 5 | 5 |
| Bolivia | Psacharopoulos | 54 | ... | ... | ... | ... | ... | ... |
| (Urban) | WB | 60 | ... | ... | ... | 62 | ... | ... |
| | CEPAL | *49* | ... | ... | *45* | ... | *41* | ... |
| | IDB | 34 | ... | ... | ... | 32 | 26 | 32 |
| Brazil | Psacharopoulos | 41 | ... | ... | ... | ... | ... | ... |
| | CEPAL | ... | *42* | ... | ... | *41* | ... | ... |
| | IDB | 51 | ... | ... | ... | ... | ... | 31 |
| Colombia | Psacharopoulos | 8 | ... | ... | ... | ... | ... | ... |
| (Urban) | WB | ... | ... | 8 | 10 | ... | ... | ... |
| | CEPAL | ... | *35* | ... | *38* | *42* | *41* | ... |
| | de Jong | 38 | ... | ... | ... | ... | ... | ... |
| | IDB | 9 | ... | ... | 12 | 9 | 4 | ... |
| Costa Rica | Psacharopoulos | 3 | ... | ... | ... | ... | ... | ... |
| | Morley | 10 | ... | ... | ... | ... | ... | ... |
| | CEPAL | ... | *24* | ... | *25* | ... | *21* | ... |
| | DGEC | *28* | *27* | *32* | *29* | *23* | *20* | *20* |
| | IDB | 4 | 10 | 10 | 9 | 8 | 8 | 7 |
| Chile | Psacharopoulos | 10 | ... | ... | ... | ... | ... | ... |
| | MIDEPLAN | ... | 40 | ... | 33 | ... | 28 | ... |
| | CEPAL | ... | *33* | ... | *28* | ... | *24* | ... |
| | IDB | 12 | ... | ... | ... | ... | ... | ... |
| Dominican Rep. | Psacharopoulos | 24 | ... | ... | ... | ... | ... | ... |
| | WB | ... | ... | ... | 21 | ... | ... | ... |
| | IDB | 25 | ... | ... | ... | ... | ... | ... |
| Ecuador | Larrea | 39 | 45 | 45 | 46 | 45 | 44 | 32 |
| (Urban) | CEPAL | ... | | ... | ... | ... | ... | ... |
| | Cabrera | ... | 48 | ... | ... | ... | ... | ... |
| | Aguinaga | ... | ... | 49 | | | | ... |
| | IDB | ... | ... | ... | ... | ... | 11 ... | |
| El Salvador | Psacharopoulos | ... | 42 | ... | ... | ... | ... | ... |
| (Urban) | WB | ... | ... | ... | 43 | ... | ... | ... |
| | DI | ... | ... | ... | ... | ... | **44** | **40** |
| | IDB | ... | 22 | ... | 22 | 22 | 22 | 16 |

**Table 2 continued:  Poverty Incidence in Latin America and the Caribbean 1989-1995 (various sources).**

| COUNTRY | Source | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---------|--------|------|------|------|------|------|------|------|
| Guatemala | Psacharopoulos | 70 | ... | ... | ... | ... | ... | ... |
| | IDB | 62 | ... | ... | ... | ... | ... | ... |
| Guyana | WB | ... | ... | ... | ... | 43 | ... | ... |
| Honduras | Psacharopoulos | 71 | ... | ... | ... | ... | ... | ... |
| | WB | *55* | *62* | *63* | *50* | *53* | ... | ... |
| | CEPAL | ... | *75* | ... | *73* | ... | *73* | ... |
| | de Jong | 42 | ... | ... | ... | ... | ... | ... |
| | WB(MoP) | *72* | *78* | *82* | *72* | *74* | ... | ... |
| | IDB | 62 | ... | ... | ... | ... | ... | ... |
| Jamaica | Psacharopoulos | 12 | ... | ... | ... | ... | ... | ... |
| | Gordon | 33 | ... | ... | ... | ... | ... | ... |
| | IDB | 11 | ... | ... | ... | ... | ... | ... |
| Mexico | Psacharopoulos | 18 | ... | ... | ... | ... | ... | ... |
| | INEGI (extreme pov.) | 14 | ... | ... | ... | ... | ... | ... |
| | CEPAL | *39* | ... | ... | *36* | ... | *36* | ... |
| | IDB | 19 | ... | ... | 20 | ... | 21 | ... |
| Panama | Psacharopoulos | 32 | ... | ... | ... | ... | ... | ... |
| | CEPAL | *38* | ... | *36* | ... | ... | *30* | ... |
| | IDB | 36 | ... | ... | ... | ... | ... | ... |
| Paraguay | Psacharopoulos | ... | 8 | ... | ... | ... | ... | ... |
| (Asuncion) | WB | ... | 20 | ... | ... | ... | ... | ... |
| | Sauma | ... | ... | ... | **44** | ... | ... | ... |
| | CEPAL | ... | *37* | ... | *36* | ... | ... | ... |
| | DGEEC | ... | ... | ... | ... | ... | ... | 15.7 |
| | IDB | ... | 2 | ... | ... | ... | 1 | 2 |
| Peru | Psacharopoulos | ... | 41 | ... | ... | ... | ... | ... |
| (Urban) | Cuanto | ... | ... | 51 | ... | ... | 42 | ... |
| | IDB | ... | 58 | ... | ... | ... | ... | ... |
| Uruguay | Psacharopoulos | 5 | ... | ... | ... | ... | ... | ... |
| (Urban) | CEPAL | ... | *12* | ... | *8* | ... | *6* | ... |
| | IDB | 4 | ... | ... | ... | ... | ... | ... |
| Venezuela | Psacharopoulos | 13 | ... | ... | ... | ... | ... | ... |
| | WB | *54* | ... | ... | ... | ... | ... | ... |
| | Morley | *48* | ... | ... | ... | ... | ... | ... |
| | Marquez | *41* | ... | 35 | ... | ... | ... | ... |
| | CEPAL | ... | *34* | ... | *33* | ... | *42* | ... |
| | IDB | 9 | ... | ... | ... | ... | ... | ... |

**Table 2 continued:  Poverty Incidence in Latin America and the Caribbean 1989-1995 (various sources).**

**Notes**: Estimates refer to headcount ratios and are national averages unless stated otherwise.  Poverty rates in normal font are for individuals, those in *italic bold font* are for households.

**Sources:**
1)     **All countries**: ACEPAL≅:  CEPAL (1994).  APsach≅.: Psacharopoulos et al (1993).  "IDB": IDB (1996). These three sources use adjusted income data, but poverty lines and method of adjusting incomes as reported in surveys may differ.  See text for a discussion.
2)     **Argentina**: AMorley≅:  Morley and Alvarez (1992a).  "WB": World Bank (1995a).
3)     **Bolivia**: AWB≅:  World Bank 1996.
4)     **Colombia**: Ade Jong≅:  de Jong 1995.  "WB":  World Bank (1994a).
5)     **Costa Rica**:  "DGEC":  Dirección General de Estadística y Censos (1997).
6)     **Chile**: AMIDEPLAN≅: MIDEPLAN (1992).
7)     **Dominican Republic**:  "WB":  World Bank (1995c).
8)     **Ecuador**: A Larrea≅: Larrea (1995). ACabrera≅: Cabrera et al (1993).  AAguinaga≅: Aguinaga (1991).
9)     **El Salvador**: AWB≅:  World Bank (1994b). "DI":  Dirección de Información (1997).
10)    **Guyana**: AWB≅:  World Bank (1994c).
11)    **Honduras**: Ade Jong≅:  de Jong (1995).  AWB≅:  World Bank (1994d).  AWB (MoP)≅:  Ministerio de Planificaci∴n cited in World Bank (1994d).
12)    **Jamaica**: AGordon≅: Gordon (1989). (Using consumption data).
13)    **Mexico**: AINEGI≅:  INEGI (1993).
14)    **Paraguay**: AWB≅:  World Bank (1994e).  "Sauma":  Sauma (1993).  "DGEEC":  Dirección General de Estadística, Encuestas y Censos (1996).
15)    **Peru:** ACuanto≅:  Instituto Cuanto (1994).  (Using consumption).
16)    **Venezuela**: AWB≅:  World Bank (1991).  AMorley≅:  Morley and Alvarez (1992b).  AMarquez≅: Marquez 1995.

**Table 3: Engel Coefficients for Selected Latin American Countries**

| Country (coverage) | Year | Range[1] of income distribution | Engel Coeff. (E) | Multiplier factor (1 / E) | Engel Coeff. (E) | Multiplier factor (1/E) | Engel Coeff. (E) | Multiplier factor (1 / E) |
|---|---|---|---|---|---|---|---|---|
| | | **Income group (by percentile) closest to Engel coefficient of 0.5** | | | **2nd QUINTILE[2] (around)** | | **AVG. TOTAL POP.** | |
| Argentina (Buenos Aires) | 1985-86 | 0-40 | 51.3% | 1.95 | 48.1% | 2.08 | 38.2% | 2.62 |
| Bolivia (La Paz) | 1990-91 | 60-80 | 51.6% | 1.94 | 59.8% | 1.67 | 45.4% | 2.20 |
| Brazil (Rio de Janeiro) | 1987-88 | 0-10 | 42.1% | 2.37 | 37.0%* | 2.70 | 23.5% | 4.26 |
| Chile (Gran Santiago) | 1987-88 | 0-40 | 50.9% | 1.97 | 49.4% | 2.02 | 32.9% | 3.04 |
| Colombia (Urban) | 1984-85 | 2-17 | 45.2% | 2.21 | 42.2%* | 2.37 | 25.1% | 3.99 |
| Costa Rica | 1987-88 | 20-40 | 48.6% | 2.06 | 51.9% | 1.93 | 40.1% | 2.49 |
| Ecuador (urban) | 1975-76 | 29-57 | 49.3% | 2.03 | 55.9%* | 1.79 | 40.2% | 2.49 |
| Ecuador (rural) | 1978-79 | 18-39 | 45.0% | 2.22 | 45.0%* | 2.22 | 38.6% | 2.59 |
| Ecuador (urban) | 1991 | 0-61 | 50.4% | 1.98 | 49.8%* | 2.01 | 35.8% | 2.79 |
| Ecuador (urban) | 1995 | 0-40 | 49.9% | 2.01 | 47.8% | 2.09 | 38.4% | 2.6 |
| Ecuador (rural) | 1995 | 80-100 | 50.2% | 1.99 | 56.1% | 1.78 | 53.3% | 1.88 |
| El Salvador (urban) | 1990-91 | 0-40 | 51.0% | 1.96 | 50.0% | 2.00 | 37.4% | 2.67 |
| Mexico | 1984 | 60-80 | 50.7% | 1.97 | 55.9% | 1.79 | 44.1% | 2.27 |
| Mexico | 1989 | 40-60 | 50.3% | 1.99 | 51.4% | 1.95 | 39.8% | 2.51 |
| Mexico | 1992 | 30-50 | 49.9% | 2.01 | 49.9% | 2.01 | 35.6% | 2.81 |
| Panama (Panama City) | 1983-84 | 31-43 | 51.2% | 1.95 | 53.5%* | 1.87 | 33.3% | 3 |
| Peru (Lima) | 1985-86 | 28-62 | 51.6% | 1.94 | 52.1%* | 1.92 | 46.8% | 2.13 |
| Uruguay (Montevideo) | 1982-83 | 0-25 | 46.4% | 2.16 | 36.9%* | 2.71 | 31.1% | 3.22 |
| Venezuela (urbana) | 1988-89 | 0-25 | 39.6% | 2.52 | 38.5%* | 2.60 | 33.3% | 3.01 |

**Source:** CEPAL (1995) and IDB (1996).

**Note:** 1) The income range represents the groups of the income distribution for which the average Engel coefficient is close to 0.5, within a +/- 10% range in most cases.

2)Percentages marked with an asterisk are approximations using income brackets closest to 2nd quintile in income distribution, where no precise quintile distribution was available.

**Table 3a: Standard Error Estimates of Income and Expenditure Measures of Household Surveys in Selected Countries.[1]**

| | Paraguay 1995 | | Ecuador 1995 | | | | Costa Rica 1995 | |
|---|---|---|---|---|---|---|---|---|
| | Income | | Income | | Expenditures | | Income | |
| | No. of obs. in sample | Standard error (%) | No. of obs. in sample | Standard error (%) | No. of obs. in sample | Standard error (%) | No. of obs. in sample | Standard error (%) |
| **National** | | | | | | | | |
| Total population | 21,703 | 1.07% | 26,626 | 0.99% | 26,071 | 0.59% | 39,099 | 0.57% |
| Poor population | 5,805 | 0.58% | 8,926 | 0.57% | 5,850 | 0.35% | 9,729 | 0.72% |
| All households[2] | 4,621 | 2.37% | 5,661 | 2.00% | 5,660 | 1.06% | 8,085 | 1.06% |
| Poor households[2] | 976 | 1.99% | 1,624 | 1.85% | 922 | 1.51% | 1,302 | 1.69% |
| Employed population[3] | 7,682 | 1.86% | 12,977 | 2.15% | ... | ... | 13,251 | 0.91% |
| **Urban** | | | | | | | | |
| Total population | 10,970 | 1.25% | 14,755 | 1.20% | 14,658 | 0.74% | 13,627 | 0.91% |
| Poor population | 792 | 1.19% | 2,588 | 0.83% | 1,718 | 0.57% | 2,132 | 2.09% |
| All households[2] | 2,479 | 2.81% | 3,341 | 2.46% | 3,379 | 1.30% | 2,935 | 1.61% |
| Poor households[2] | 148 | 4.58% | 491 | 3.08% | 274 | 2.73% | 184 | 4.55% |
| Employed population[3] | 4,575 | 2.08% | 7,003 | 2.63% | ... | ... | 4,824 | 1.44% |
| **Rural** | | | | | | | | |
| Total population | 10,733 | 1.73% | 11,871 | 1.11% | 11,413 | 0.75% | 25,472 | 0.64% |
| Poor population | 5,013 | 0.65% | 6,338 | 0.72% | 4,132 | 0.44% | 7,597 | 0.74% |
| All households[2] | 2,142 | 3.74% | 2,320 | 2.28% | 2,281 | 1.43% | 5,150 | 1.31% |
| Poor households[2] | 828 | 2.21% | 1,133 | 2.29% | 648 | 1.81% | 1,118 | 1.82% |
| Employed population[3] | 3,107 | 3.84% | 5,974 | 2.45% | ... | ... | 8,427 | 1.10% |

**Source:** Estimates by the authors based on information from Paraguay's "Encuesta de Hogares 1995", Ecuador's "Encuesta de Condiciones de Vida 1995" and Costa Rica's "Encuesta de Hogares de Propósitos Múltiples 1995."

**Notes:**
1. Standard errors are calculated based on individual observations (persons or households) of the survey. Standard sampling errors are expressed as a percentage of the mean of the variable.
2. Refers to total income of the household.
3. Refers to primary incomes of employed population.

**Table 4: Survey Coverage and Income Definition**

| Country | Coverage | Income Definition | Consumption | Survey(3) | Frequency |
|---|---|---|---|---|---|
| Argentina | 23 Urban centers | Standard (1) | No | LFS | May and October |
| Barbados | National | Only labor | No | LFS | Quarterly |
| Bolivia | Urban | Standard (1) | Yes (aggr. 88-94) | HHS | Yearly |
| Brazil | National | Standard (1) | No | HHS | Yearly |
| Chile | National | Standard (1) | No | LFS | Quartely |
| Colombia | National | Standard (1) | No | LFS | Yearly (urban quarterly) |
| Costa Rica | National | Labor | No | HHS | Yearly |
| Dom. Rep. | National | Standard (1) | No | LFS | Semi-annual |
| Ecuador | Urban | Standard (1) | No | HHS | No |
| El Salvador | National | Standard (1) | Yes(aggr./irregul) | HHS | Yearly |
| Guatemala | National | Only labor and pensions | No | LFS | Irregular, last in 1989 |
| Guyana (2) | National (1992-93) | Standard (1) | Yes (detailed) | LSMS | Ad hoc |
| Honduras | National | Only labor | No | HHS | Irregular |
| Jamaica | National | Standard (1) | Yes (detailed) | LFS | Yearly |
| Mexico | National | Standard (1) | Yes (detailed) | IEH | Biannual (since 1992) |
| Nicaragua (2) | National (1993) | Standard (1) | Yes (detailed) | LSMS | Ad hoc |
| Panama | National | Standard (1) | No | LFS | Yearly |
| Paraguay | National (since 1995) | Standard (1) | Yes (aggr.,1996) | HHS | Yearly |
| Peru | National (since 1995) | Standard (1) | Yes (aggr., Q4) | HHS | Quaterly |
| Uruguay | Urban | Standard (1) | No | LFS | Semi-annual |
| Venezuela | National | Only labor and transfers | No | LFS | Semi-annual |

**Source:** Arieira (1995) and country survey documentation.

**Notes:** (1) The 'standard' definition in most cases includes monetary income from labor, self-employment, property/rent, pensions, transfers and capital. Surveys rarely cover non-monetary income. Chile and Uruguay compute an imputed income from household owned dwellings (imputed house rent). Even so, income definitions need not be fully comparable due to differences in questionnaire design.
(2) Refers to non-institutionalized LSMS surveys implemented in one particular year.
LFS: Labor Force Survey; HHS: Household Survey; LSMS: Living Standards Measurement Survey
IEH: Income and Expenditure Survey.
(3) Refers to regular household and labor survey systems. Some countries may also have other surveys in particular years.

**Table 5:  Income Per Capita Adjustment Factors**

| Country | Coverage | Adj. Factor[1] | Source | Year |
|---|---|---|---|---|
| Argentina | Metropolitan | 1.8565 | Psacharopoulos/IDB | 1980 |
| Argentina | Metropolitan | 1.8565 | IDB | 1986 |
| Argentina | Metropolitan | 2.4508 | Psacharopoulos/IDB | 1989 |
| Argentina | Metropolitan | 2.4508 | IDB | 1989 |
| Argentina | Urban | 2.271 | IDB | 1994 |
| Bolivia | Urban | 1.463 | Psacharopoulos/IDB | 1986 |
| Bolivia | Urban | 1.2772 | Psacharopoulos/IDB | 1989 |
| Bolivia | Urban | 1 | IDB | 1993 |
| Brazil | Urban | 1.2521 | Psacharopoulos/IDB | 1979 |
| Brazil | Rural | 1.0424 | Psacharopoulos/IDB | 1979 |
| Brazil | Urban | 1.2154 | Psacharopoulos/IDB | 1989 |
| Brazil | Rural | 1.0119 | Psacharopoulos/IDB | 1989 |
| Brazil | National | 1.5060 | IDB | 1995 |
| Chile | Urban | 1.882 | Psacharopoulos/IDB | 1989 |
| Chile | Rural | 1.882 | Psacharopoulos/IDB | 1989 |
| Colombia | Urban | 2.1623 | WB | 1978 |
| Colombia | Urban | 2.0676 | Psacharopoulos | 1980 |
| Colombia | Urban | 2.4107 | IDB | 1980 |
| Colombia | Urban | 2.2234 | IDB | 1986 |
| Colombia | Urban | 1.616 | WB | 1988 |
| Colombia | Urban | 2.663 | IDB | 1986 |
| Colombia | Urban | 1.5928 | WB | 1991 |
| Colombia | Urban | 1.616 | WB | 1992 |
| Colombia | National | 1.616 | IDB | 1992 |
| Colombia | National | 1.7326 | IDB | 1993 |
| Colombia | National | 1.6106 | IDB | 1994 |
| Costa Rica | Urban | 2.4046 | Psacharopoulos/IDB | 1981 |
| Costa Rica | Rural | 2.6783 | Psacharopoulos/IDB | 1981 |
| Costa Rica | Urban | 1.174 | DGEC | 1987-96 |
| Costa Rica | Rural | 1.358 | DGEC | 1987-96 |
| Costa Rica | Urban | 3.7167 | Psacharopoulos/IDB | 1989 |
| Costa Rica | Rural | 4.1397 | Psacharopoulos/IDB | 1989 |
| Costa Rica | National | 1.9292 | IDB | 1990 |
| Costa Rica | National | 2.1044 | IDB | 1991 |
| Costa Rica | National | 2.0662 | IDB | 1992 |
| Costa Rica | National | 1.8889 | IDB | 1993 |
| Costa Rica | National | 1.7517 | IDB | 1994 |
| Costa Rica | National | 1.8244 | IDB | 1995 |

**Table 5 continued: Income Per Capita Adjustment Factors.**

| Country | Coverage | Adj. Factor[1] | Source | Year |
|---|---|---|---|---|
| Dominican Rep. | National | 1.379 | Psacharopoulos/IDB | 1989 |
| Ecuador | Urban | 1.305 | Psacharopoulos/IDB | 1987 |
| Ecuador | National | 1.4225 | IDB | 1994 |
| El Salvador | Urban | 1.52 | IDB | 1989 |
| El Salvador | Urban | 1.796 | Psacharopoulos/IDB | 1990 |
| El Salvador | Urban | 1.25 | WB | 1992 |
| El Salvador | Rural | 1.125 | WB | 1992 |
| El Salvador | National | 1.48 | IDB | 1992 |
| El Salvador | National | 1.5692 | IDB | 1993 |
| El Salvador | National | 1.409 | IDB | 1994 |
| El Salvador | National | 1.5004 | IDB | 1995 |
| Guatemala | Urban | 1.4607 | Psacharopoulos/IDB | 1987 |
| Guatemala | Rural | 1.5298 | Psacharopoulos/IDB | 1987 |
| Guatemala | Urban | 1.1231 | Psacharopoulos/IDB | 1989 |
| Guatemala | Rural | 1.1762 | Psacharopoulos/IDB | 1989 |
| Honduras | Urban | 1 | Psacharopoulos | 1986 |
| Honduras | Urban | 1.3307 | IDB | 1986 |
| Honduras | Urban | 1 | Psacharopoulos | 1989 |
| Honduras | Rural | 1.3329 | Psacharopoulos | 1989 |
| Honduras | National | 1.3307 | IDB | 1989 |
| Jamaica | Urban | 1.376 | Psacharopoulos/IDB | 1989 |
| Jamaica | Rural | 1.376 | Psacharopoulos/IDB | 1989 |
| Mexico | Urban | 1.3947 | Psacharopoulos/IDB | 1984 |
| Mexico | Rural | 1.0889 | Psacharopoulos/IDB | 1984 |
| Mexico | Urban | 1.1068 | Psacharopoulos/IDB | 1989 |
| Mexico | Rural | 1.1068 | Psacharopoulos/IDB | 1989 |
| Mexico | National | 2.1294 | IDB | 1992 |
| Panama | Urban | 1.102 | Psacharopoulos/IDB | 1979 |
| Panama | Rural | 1 | Psacharopoulos/IDB | 1979 |
| Panama | Urban | 1.102 | Psacharopoulos/IDB | 1989 |
| Panama | Rural | 1 | Psacharopoulos/IDB | 1989 |
| Paraguay | Metropolitan | 1.743 | Psacharopoulos/IDB | 1983 |
| Paraguay | Metropolitan | 1.5335 | Psacharopoulos/IDB | 1990 |
| Paraguay | Urban | 1 | IDB | 1994 |
| Paraguay | National | 1.113 | IDB | 1995 |
| Peru | Lima | 1.0628 | Psacharopoulos/IDB | 1985-86 |
| Peru | Lima | 2.0528 | Psacharopoulos/IDB | 1990 |

**Table 5 continued:  Income Per Capita Adjustment Factors.**

| Country | Coverage | Adj. Factor[1] | Source | Year |
|---------|----------|----------------|--------|------|
| Uruguay | Urban | 1.3835 | Psacharopoulos/IDB | 1981 |
| Uruguay | Urban | 1.366 | Psacharopoulos/IDB | 1989 |
| Venezuela | Urban | 1.6085 | Psacharopoulos/IDB | 1981 |
| Venezuela | Rural | 1.3487 | Psacharopoulos/IDB | 1981 |
| Venezuela | Urban | 2.002 | Psacharopoulos/IDB | 1989 |
| Venezuela | Rural | 1.6785 | Psacharopoulos/IDB | 1989 |

**Sources:**      "Psacharopoulos":  Psacharopoulos et al. (1993).

"WB":  World Bank (1991, 1994a, 1994b, 1994c, 1994d, 1994e, 1995a, 1995b).

"DGEC": DGEC (1997).

**Note:**      1.      Adjustment factor is defined as the ration of per capita income as estimated by National Accounts and that estimated from household survey data.

**Table 6: PPP Values for 1985**

| Country | S & H 88 GDP | Penn Tables 95 GDP | Penn Tables 95 Consumption |
|---|---|---|---|
| **Argentina** | 0.5186 | 0.5748 | 0.5331 |
| **Bahamas** | 1.031 | 0.8065 | 0.6547 |
| **Barbados** | 0.7529 | 0.7426 | 0.6162 |
| **Belize** | ... | 0.4975 | 0.4701 |
| **Bolivia** | 0.6119 | 0.4601 | 0.4447 |
| **Brazil** | 0.4355 | 0.4094 | 0.3716 |
| **Chile** | 0.3281 | 0.3917 | 0.4559 |
| **Colombia** | 0.3739 | 0.3988 | 0.3792 |
| **Costa Rica** | 0.4464 | 0.4665 | 0.4396 |
| **Dominican Rep.** | 0.3575 | 0.3315 | 0.3476 |
| **Ecuador** | 0.6559 | 0.4472 | 0.4614 |
| **El Salvador** | 0.8775 | 0.468 | 0.5347 |
| **Guatemala** | 0.679 | 0.5842 | 0.58 |
| **Guyana** | 0.3625 | 0.4591 | 0.4556 |
| **Haiti** | 0.4582 | 0.3762 | 0.4097 |
| **Honduras** | 0.7242 | 0.5991 | 0.6035 |
| **Jamaica** | 0.3954 | 0.405 | 0.3818 |
| **Mexico** | 0.4742 | 0.439 | 0.3912 |
| **Nicaragua** | 0.5191 | 0.5137 | 0.5034 |
| **Panama** | 0.6314 | 0.6489 | 0.7065 |
| **Paraguay** | 0.6711 | 0.4134 | 0.4221 |
| **Peru** | 0.3404 | 0.3445 | 0.3326 |
| **Suriame** | 0.7963 | 0.716 | 0.5348 |
| **Trinidad and Tobago** | 0.8115 | 0.6456 | 0.4957 |
| **Uruguay** | 0.3988 | 0.3955 | 0.3893 |
| **Venezuela** | 0.6743 | 0.583 | 0.5481 |

**Notes:** (...) Not available.
"S & H": Summers and Heston (1988).
"Penn Tables": Penn W World Tables Mark 5.6a. (1995).

**Table 7: Income Distribution (Gini Coefficients) in Latin America and the Caribbean, 1989-1995.**

| COUNTRY | Author | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---|---|---|---|---|---|---|---|---|
| Argentina | Psacharopoulos | 0.48 | | | | | | |
| (Greater Buenos Aires) | WB | 0.53 | 0.467 | 0.474 | 0.453 | 0.461 | ... | ... |
| | CEPAL | ... | 0.423 | ... | 0.408 | ... | ... | ... |
| | IDB | 0.476 | ... | ... | ... | ... | 0.455 | 0.445 |
| Bolivia | Psacharopoulos | 0.52 | ... | ... | ... | ... | ... | ... |
| (Urban) | WB | 0.465 | ... | ... | 0.482 | ... | ... | ... |
| | CEPAL | 0.482 | ... | ... | 0.478 | ... | ... | ... |
| | IDB | 0.525 | ... | ... | ... | 0.52 | ... | 0.536 |
| Brazil | Psacharopoulos | 0.63 | ... | ... | ... | ... | ... | ... |
| | IDB | 0.633 | ... | ... | ... | ... | ... | 0.597 |
| Colombia | Psacharopoulos | 0.53 | ... | ... | ... | ... | ... | ... |
| (Urban) | CEPAL | ... | 0.45 | ... | 0.454 | ... | ... | ... |
| | IDB | 0.532 | ... | ... | 0.47 | 0.58 | 0.54 | ... |
| Costa Rica | Psacharopoulos | 0.46 | ... | ... | ... | ... | ... | ... |
| | IDB | 0.46 | | | | | | |
| Chile | Psacharopoulos | 0.57 | ... | ... | ... | ... | ... | ... |
| | INE | ... | 0.487 | 0.487 | 0.487 | 0.474 | ... | ... |
| | IDB | 0.573 | ... | ... | ... | ... | ... | ... |
| Dominican Rep. | Psacharopoulos | 0.5 | ... | ... | ... | ... | ... | ... |
| | IDB | 0.503 | ... | ... | ... | ... | ... | ... |
| Ecuador | Larrea | 0.42 | 0.44 | 0.51 | 0.48 | 0.49 | ... | ... |
| (Urban) | IDB | ... | ... | ... | ... | ... | 0.51 | .549 |
| El Salvador | Psacharopoulos | ... | 0.45 | ... | ... | ... | ... | ... |
| (Urban) | IDB | ... | 0.45 | ... | 0.5 | 0.48 | 0.48 | 0.46 |
| Guatemala | Psacharopoulos | 0.59 | | | | | | |
| | IDB | 0.587 | ... | ... | ... | ... | ... | ... |
| Honduras | Psacharopoulos | 0.59 | ... | ... | ... | ... | ... | ... |
| | IDB | 0.591 | | | | | | |
| Jamaica | Psacharopoulos | 0.44 | ... | ... | ... | ... | ... | ... |
| | IDB | 0.435 | ... | ... | ... | ... | ... | ... |
| Mexico | Psacharopoulos | 0.52 | ... | ... | ... | ... | ... | ... |
| | IDB | 0.519 | ... | ... | 0.57 | ... | 0.569 | ... |
| Panama | Psacharopoulos | 0.57 | ... | ... | ... | ... | ... | ... |
| | IDB | 0.565 | ... | ... | ... | ... | ... | ... |
| Paraguay | Psacharopoulos | | 0.40 | | | | | |
| (Asuncion) | WB | ... | 0.39 | ... | ... | ... | ... | ... |
| | CEPAL | ... | 0.357 | ... | 0.391 | ... | ... | ... |
| | IDB | 0.483 | 0.412 | 0.445 | 0.454 | 0.472 | 0.482 | 0.503 |
| Peru | Psacharopoulos | ... | 0.44 | ... | ... | ... | ... | ... |
| (Urban) | IDB | ... | 0.438 | ... | ... | ... | ... | ... |

**Table 7 continued: Income Distribution (Gini Coefficients) in Latin America and the Caribbean, 1989-1995.**

| COUNTRY | Author | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---------|--------|------|------|------|------|------|------|------|
| Uruguay | Psacharopoulos | 0.42 | ... | ... | ... | ... | ... | ... |
| (Urban) | CEPAL | ... | 0.353 | ... | 0.301 | ... | ... | ... |
| | IDB | 0.424 | ... | ... | ... | ... | ... | ... |
| Venezuela | Psacharopoulos | 0.44 | ... | ... | ... | ... | ... | ... |
| | IDB | 0.441 | ... | ... | ... | ... | ... | 0.467 |

**Sources:** See table 2.

**Note:** The Gini coefficient can take values between 0 and 1, that is between perfect equality (everybody has the same income) and complete inequality (one person receives all income). It is estimated using per capita household income.

# Part 2

## Inventory of Poverty Estimates for
## Latin America and the Caribbean, 1980-95

This part of the study provides the overview of existing poverty estimates for Latin America and the Caribbean. The first section of this Part explains the origin of the poverty lines used by the IDB to make its poverty calculations and compares this to the methods of deriving poverty lines in other studies. Next an introduction is given to the tables of Appendix 3 which contain the actual inventory of available poverty estimates for Latin America and the Caribbean. The last section consists of a sensitivity analysis of trends in poverty using a first-order dominance test of poverty for a range of poverty lines. We also test the sensitivity of the impact of economic growth on poverty for alternative poverty estimates.

## The IDB Poverty Line

The IDB poverty line reflects a value of US$ 2 dollars per person per day (US$ 60 per month) at constant purchasing power parity (PPP) of 1985. This poverty line is the same as that used in some other international comparisons, in particular work done at the World Bank (World Bank 1990, Psacharopoulos et al. 1993) A more recent World Bank study (World Bank 1996) applies an international poverty line of US$ 1 per person per day, which would be equivalent to the *extreme* poverty line definition of the earlier studies. The IDB poverty line and that of the earlier World Bank studies find an empirical justification in work on poverty done at CEPAL in the 1970s and 1980s (e.g. CEPAL 1979 and 1987).

CEPAL (1987) developed specific national poverty lines for the countries covered in its study (Argentina, Brazil, Colombia, Costa Rica, Chile, Guatemala, Mexico, Panama, Peru, Uruguay and Venezuela). The starting point is the estimation of the cost of a basic food basket which meets minimum nutritional requirements. Minimum food requirements are obtained following the recommendations of a group of experts from FAO and WHO, who set the minimum requirements in terms of energy at around 2,300 calories per day per person. The choice of food items to be incorporated into the basket is related to local tastes and consumption behavior analyzed on the basis of data derived from the most recent available income and expenditure survey for each country. The composition and cost of the basic food basket was subsequently determined by CEPAL by taking for each country the structure and value of the food basket for the subgroup of the population (by income or consumption brackets) which has an apparent level of food consumption equivalent to the minimum food requirements in terms of calories. The food share in total income or consumption (Engel coefficient) of this population group were used to derive the poverty line (cost of basic food basket divided by the Engel coefficient). The Engel coefficients thus obtained turned out to lie around 0.5 for urban areas and 0.6 for rural areas,

which led CEPAL to apply as a rule of thumb a multiplication factor (inverse Engel coefficient) for urban areas of 2 times the cost of the basic food basket and a factor of 1.75 for rural areas. This empirical 'regularity', based on a scarce number of income and expenditure surveys of the 1970s and early 1980s,  shows some degree of dispersion across countries as discussed in Part 1 (Table 3). Yet the indicated multiplication factors (or alleged Engel coefficients) have found wide application in the countries of the region, particularly where recent income and expenditure surveys are lacking. As a matter of fact, the multiplication factor of twice the cost of the food basket was already applied in several CEPAL studies of the 1970s (Altimir 1978, CEPAL 1979).

While CEPAL has mostly worked with national poverty lines (cost of food basket based on local circumstances), the World Bank for purposes of cross-country comparison decided to estimate a uniform poverty line. Psacharopoulos et al (1993) document that after converting the national poverty lines estimated by CEPAL into 1985 PPP dollars the range of poverty lines would be from US$146 per capita per month in Colombia to US$67 in Peru.  To obtain a uniform poverty line Psacharopoulos et al. ran a cross-section regression using the poverty lines and the mean incomes of ten of the eleven countries for which CEPAL had made calculations (Colombia was excluded because its poverty line was considered 'too high'!!).   They found a significant correlation between the two variables.  Using the regression results, poverty lines were  estimated for other countries for which CEPAL had no estimates.  The final result was a poverty line range (after the exclusion of Colombia) from US$57 per capita per month for Bolivia to US$71 for Jamaica.  On this basis the uniform poverty line of US$60  PPP 1985 per capita per month was selected arbitrarily for the region as a whole.  The extreme poverty threshold was set at US$30 PPP 1985 per capita per month, i.e. applying the same implicit average Engel coefficient of 0.5 for all countries.

In essence this is also the background behind the IDB poverty lines. The exact poverty lines per country differ though from those applied in Psacharopoulos et al (1993). The World Bank study obtained the 1985 PPP thresholds in local currency using the PPP conversion factors for GDP provided by Summers and Heston (1988) and  by applying the overall CPI to inflate the 1985 poverty line to the year corresponding to the available survey data.  In deriving the IDB poverty lines, two changes were made to this methodology.  First, instead of using the PPP conversion factors from Summers and Heston (1988) the updated adjustment factors were taken from the more recent version of that data base, the Penn World Tables Mark 5.6a.  Second, instead of applying the PPP for GDP, the consumption PPP was used as a conversion factor, since it is judged to be more appropriate considering that what is being dealt with are minimum consumption food baskets.  (See Table 6 for a comparison of the conversion factors used by the IDB and those used by Psacharopoulos et al. 1993.)

Table 8 contains the IDB poverty lines estimated in local currency and current prices for 1985-96, using the average annual consumer price index (CPI).  The IDB poverty estimates presented in this study apply the same poverty lines, but adjust these using the monthly CPI so as to match the poverty line with the exact reference period of the survey.

Table 9 compares the IDB poverty lines with those used by the main other studies included in

this inventory, while Table 10 gives an overview of the estimates of the cost of basic food baskets and their estimated nutritional value.

Crude as the indicated method to derive the international poverty line may be, the basic argument is, of course, that only using a uniform poverty line allows for international comparisons in poverty trends. However, as explained in Part 1, even for international comparisons the uniform poverty line should be taken with some caution as there are reasons to suspect that the poverty line does not reflect exactly the same basic consumer basket and hence standard of living in each country. As indicated above, it is at best an approximate average of national poverty lines for a group of countries after arbitrarily excluding some 'outliers' (Colombia). Further, there can be doubts about the reliability of the PPP conversion factors used, probably adult equivalent estimates should be used to correct for demographic differences across countries, and so on. Hence, at best we are dealing with a rough approximation, which makes it all the more important to provide some sensitivity analysis of the results with regard to the choice of the poverty line. We turn to this further below. While useful for international comparisons, the uniform poverty line not necessarily is the best guide for national policy making. If adequate data are available, such as a good national income and expenditure survey or living conditions survey, national poverty lines are best derived from appropriate estimations of the cost of the basic food basket and the Engel coefficient, rather than using an internationally set rule of thumb. In the end of the day, what mostly matters of course is not our 'exact' estimate of the magnitude of poverty, but rather its changes over time, its determinants and the characteristics and location of the population affected by it.

# Inventory Country by Country

## Data Sources

Data sources for poverty estimates are in general household and labor force surveys implemented by the National Statistical Office. Table A.1 in Appendix 1 gives an overview of the data sources that have been used in the poverty studies included in this inventory. In general the surveys are done once a year and have a national coverage. However, there are some cases for which the coverage is only urban (e.g. Argentina) and other cases for which the periodicity of the survey is unknown (e.g. Honduras). Table A.1 also summarizes the year of the survey, the geographical coverage, the period of the survey, the size of the sample and the type of survey of those surveys.

## The Country Tables

Appendix 3 provides the country tables with available poverty estimates between 1980 and 1995 and some indication of the applied methodology. The inventory is extensive but by no means comprehensive of all poverty studies done for the countries in the region. The number of estimates for each country may vary from one or two to a dozen or more.

Each table summarizes the poverty estimates (poverty incidence and poverty gap) by geographical coverage (national, urban and rural, the author of the study, the poverty line applied in each study (expressed in current local currency), and the base unit of the analysis (individual or household).

As it can be seen in the tables poverty incidence estimates may vary considerably even when the same data source is used. The various potential sources of the differences, apart from differences in the poverty line, were discussed at length in Part 1. In practice, the more important sources of discrepancy appear to be the poverty line definition, the adjustment factor used to correct for underreporting of income (if any), the unit of analysis (households or individuals) and the choice of the welfare measure (income or consumption).

The countries included in this inventory are: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Uruguay and Venezuela, that is nineteen out of twenty-six IDB member countries. The IDB (ESDB) estimates are based primary data from household or labor force surveys.

As said, one of the most important elements in explaining the differences in poverty incidence estimates between studies which use the same data, is the adjustment factor used to account for underreporting. Table 5 already summarized the adjustment factors used in some of the studies to take into account the differences between reported income in surveys and income recorded in national accounts. A glance at the table is sufficient to understand the decision to use this adjustment factor will make a big difference on the poverty estimate, as we also showed in Table 1 which shows the IDB poverty estimates using unadjusted and adjusted data.

## Robustness of Poverty Comparisons.

This final section addresses two concerns. Firstly, what is the relation between income growth and poverty and is this empirical link sensitive to the poverty line definition and to the method of poverty measurement. Some studies (Psacharopoulos et al. 1993, Morley 1992, 1994) found that the poverty-income elasticity is somewhere near -2, meaning a one percent higher growth rate would lead to a decline in the poverty rate by 2 percentage points. This would suggest that poverty (at least in the 1980s) may have a strong cyclical behavior and that economic growth is central to poverty reduction. The question raised below is whether this finding would be affected if one had used an alternative method to derive the poverty estimate. Secondly, we show graphically a first-order stochastic dominance test of poverty trends, to test whether poverty increased or decreased between survey observations is sensitive to the choice of the poverty line and to the decision to adjust or not adjust for alleged income underreporting. We do this by checking the shifts in pattern of the income distribution lines for a plausible range of poverty lines.

*Economic Growth and Poverty*

Changes in poverty may reflect both a change in average incomes and in the distribution. As shown in Part 1, all existing evidence points at a strong degree of income inequality throughout Latin America. This inequality is an important structural cause underlying high poverty rates in many countries. However, the magnitude of poverty is vast in a fair number of countries of the region, such that not even a radical redistribution of income would suffice to eliminate poverty, even if such were politically feasible. The simple back-of-the envelope calculation can be made for those cases where average per capita income is lower than the established poverty line. According to IDB GDP per capita estimates the following countries had, around 1995, a per capita income below the IDB poverty line: Guyana, Honduras, Haiti, Nicaragua and Suriname. In such cases it is obvious that overall income growth is required to achieve a substantial reduction in poverty. However, also in most other cases an acceleration of overall economic growth would likely greatly ease the task of poverty reduction. Some studies have provided empirical evidence indicating that in fact poverty rates respond quite strongly to the overall growth rate of the economy. Psacharopoulos et al. (1993) and Morley (1992, 1994) in particular suggest, as indicated, that the poverty-growth elasticity maybe somewhere near -2. The corresponding estimates were obtained via rather uncomplicated cross-section regression estimates using available poverty estimates and changes therein. The thus obtained elasticity has come to play a role as a 'stylized fact' in policy dialogues between the countries of the region and multilateral agencies regarding poverty reduction strategies.

Our basic interest here is to check whether this 'stylized fact' would be sensitive in any significant to by the precise derivation of an internationally comparable poverty line or adjustment of survey estimates for alleged underreporting of incomes. We do so by re-estimating the poverty-growth elasticity using the IDB poverty estimates based on 'adjusted' and 'unadjusted' incomes and comparing the result with those of other studies using the same regression model.

Figures 1 and 2 clearly confirm the existence of a negative relationship for the 1980s and 1990s, that is higher per capita income growth generally has helped to reduce poverty.  The figures also clearly show that the story for the 1990s differs from that of the 1980s, as the recovery of economic growth helped to yield a reduction of poverty for most cases for which data are available.  In the 1980s the larger group of countries were in the North-West quadrant with negative growth and rising poverty. The graphs show at the same time, however, that there may be notable exceptions to this rule, such as Brazil where growth has been strongly inequitable contributing to higher poverty, or Costa Rica where despite the economic recession of the 1980s investment in human capital and redistributive government policies helped to reduce poverty substantially.  Also in the 1990s there are exceptions to this rule as per capita income growth in Bolivia (1993-95) did not lead to a reduction in urban poverty, and rather was associated with in increase in poverty.[16]  Argentina forms another exception. Argentina (1989-95) achieved the highest average growth rate among the sample countries in the figure, however, without poverty

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16      This is the result obtained when using incomes to measure poverty. Use of consumption data indicates that the urban poverty rate at best stayed about the same in Bolivia in the 1990s despite modest achievements in per capita income growth (see Vos, Lee and Mejía 1997).

reduction. Our main interest here is to analyze whether the poverty-growth relationship is affected by the forms of measurement of poverty. Figure 3 shows the growth-poverty relationship for the 1990s, with poverty incidence estimates after adjustment for underreporting. It appears that in a number of cases (urban areas in Paraguay and Uruguay) per capita income growth apparently failed to produce a change in the poverty incidence, while in Argentina (Buenos Aires) the positive growth record is no longer associated with poverty reduction, but rather went along with an increase in poverty. In all other cases the degree of poverty reduction is smaller than before adjustment of incomes for alleged underreporting.

Table 11 confirms that the way in which poverty is measured seems to affect the poverty-growth elasticity. In the first instance the table shows that the poverty-growth elasticity is higher when using adjusted income data to estimate poverty. We also find, however, that the elasticity appears to be closer to unity and likely even below unity. The elasticity appears to drop when the more recent observations (end of the 1980s, early 1990s) are included in the regression. This also holds for Psacharopoulos' poverty estimates. Psacharopoulos et al. found a poverty-growth elasticity of -1.6 for a cross-section of 13 countries around 1980, while the link is somewhat weaker around 1990: -1.4. This finding may be consistent with other findings indicating a general trend towards greater inequality observed in an important number of countries of the regions following reforms towards economic liberalization around the turn of the decade. It would also emphasize once more that growth is no sufficient condition to reduce poverty and that policies geared towards a more equitable growth pattern are at least as important.

Obviously, the somewhat simplistic regression model (see Table 11) to derive the indicated results cannot drive any of such conclusions very far. The 'model' at best allows to quantify the link, but of course is far from an adequate model to explain trends in poverty. The poverty-growth elasticity can be a helpful indicator for policy debates. What we have tried to indicate here, however, is that the empirical basis to derive a stylized fact about this relationship for Latin America and the Caribbean is weak and sensitive to the precise poverty line definition and income underreporting in surveys. This stresses all the more the need to increase efforts to improve data quality at the source so as to provide more reliable information to guide policy decisions.

In the meantime, based on the available evidence, we would support the conclusion that aggregate economic growth is important for poverty reduction in Latin America, but would put the implied elasticity closer to -1 (or smaller, in absolute terms) than accepting -2 as the 'stylized fact.' If the actual elasticity is in fact the lower estimate (-1), it would imply the distributive consequences of economic growth should be given a higher priority, which in fact seems to be the turn taken in the policy dialogue in the countries of the region and the multilateral organizations in the 1990s.

### *First-Order Dominance Tests*

The sensitivity of a poverty comparison is tested for the percentage change caused in the incidence of poverty by a change in the poverty line. If a large share of the population is

concentrated around the poverty line, a one percent change in the threshold may provoke a large change in the poverty incidence. A simple form to assess this is to test first order dominance through graphical exposition.[17]

The graphs that are included in Appendix 2 show the levels of sensitivity of poverty incidence to changes in the poverty line in different countries.  The >x= axis of the graphs represents the level of the poverty line as a proportion of the international poverty line (US$ 60 PPP 1985 per capita per month), i.e. a value equal to unity represents the point where per capita income equals the US$ 60 poverty line. The graphs are shown for a poverty line range from 0-2 times the IDB poverty line.  The >y= axis shows the cumulative percentage of the total population ranked from poor to rich (ranking based on per capita income).  If the distribution line would coincide with the 45 degree line from the origin, the poverty incidence would change proportionally to a change in the poverty line.  The steeper the curve (such as it is in the lower levels of the income distribution) the more sensitive the poverty estimate will be with respect to the choice of the poverty line.

To test the robustness of the trend in the poverty rate over time the distribution lines are drawn for different points of observation. If, for the given range of poverty lines, the curves for the two years do not cross and are parallel, then conclusions about poverty trends may be assumed to be unambiguous, that is they are not sensitive to the choice of the poverty line. If the curves for the two years cross at some point then the poverty trend may be ambiguous as for one poverty line it may hold that poverty increased, while a poverty line beyond the intersection point would indicate a decrease in poverty or vice versa. If the curves for the two years overlap for the range of poverty lines it could be said that neither the incidence of poverty nor the distribution of income among the poor has not changed much in that period (independent of the poverty line).

Tables 12 and 13 provide a synopsis of the results of the first-order dominance tests and hence the robustness of poverty trends for the indicated periods for, respectively, the adjusted and non-adjusted income data.  It shows that in roughly half of the observed cases (10 out of 19 periods and 7 of 14 countries) the conclusion with regard to whether poverty increased or decreased appears to be sensitive to the choice of the poverty line. In the cases of Brazil (1979-89), Ecuador (1988-93), Panama (1979-89) and Venezuela (1981-89) poverty increased unambiguously, independent of the poverty line, while Colombia (1980-89 and 1993-94), Costa Rica (1981-89), and El Salvador (1992-95) the poverty trend shows an unambiguous decline. In all other reported cases the choice of the poverty line has an impact on the observed trend in

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17       On the use of dominance conditions in ranking distributions in terms of inequality measures see Atkinson (1970) and  in terms of poverty, see Atkinson (1987), Foster and Shorrocks (1988) and Ravallion (1994). As explained in simple terms in the text the 'first-order dominance condition' is satisfied if it can be shown that poverty will fall  unambiguously between two dates if the poverty incidence curve (the cumulative distribution) for the latter date lies nowhere above that of the former date for a specified range of poverty lines. Poverty will have increased unambiguously in the reverse case. See Ravallion (1994) for a further discussion of second- and third-order dominance conditions when using comparisons of other additive poverty measures such as the poverty gap ($P_1$) or poor-weighted measure of the poverty intensity (e.g. $P_2$).

poverty. For instance, in the case of Argentina (or rather, Gran Buenos Aires) poverty decreased between 1989 and 1994 if one would apply the IDB poverty line (or a value 50% below or under). If one would decide that the poverty threshold should be US$ 90 PPP or higher, then one would conclude that poverty increased.

The choice of the reference years may sometimes matter. In the case of Costa Rica the first-order dominance test for the 1989-95 period would yield ambiguity in the poverty trend comparing adjusted or non-adjusted data, due to the apparently very high underreporting of incomes in the 1989 household survey (about four times lower than the national income accounts figure), putting the poverty rate after adjustment of incomes and an uncharacteristically low level within the overall trend and if one would compare poverty rates for the 1989-95 period, one could conclude poverty increased in Costa Rica (see Table 1). The data for 1990-95 show a more characteristic trend for the 1990s, i.e. a decline in poverty.

It should be noted further, that in several cases ambiguity only emerges for a small range of poverty lines at the bottom end (between 0 and 50% of the US$ 60 poverty line). Hence for a range between the extreme poverty line and above, the trend in poverty would be unambiguously *decreasing* for the following countries and time periods: Mexico (1984-92, non-adjusted income), Paraguay (1983-94), Uruguay (1981-89, 1989-95). In Guatemala (1986-89) poverty increased for the range of poverty lines from 0 to 1.6 times the IDB poverty line. If a poverty line higher than 1.6 times the US$ 60 threshold were used, one would conclude that poverty stayed virtually the same between 1986 and 1989. In the remaining cases, Argentina (89-94), Bolivia (86-89), Honduras (86-89), Mexico (92-94, unadjusted income data) conclusions about poverty trends are more ambiguous.

This simple test about the robustness of poverty trends can always be performed with the basic survey information and if performed would greatly enhance the credibility of poverty estimates. It can be performed similarly when comparing poverty rates by sub-groups of the population as part of a poverty profile analysis for targeted policy interventions. It may greatly help policy discussions which sometimes become paralyzed over a controversy about the "precise" poverty estimate, while what often matters more is to obtain consensus regarding trends in poverty or regarding the identification of who the poor are. Unfortunately, such sensitivity analysis is rarely performed in practice, despite the fact that when there is survey information to estimate the poverty incidence there will also be the required information to estimate the poverty gap or intensity as well as to perform the first-order dominance test.

*Hopefully this inventory will stimulate the application of such tests and methods and by doing so help to improve our understanding of persisting poverty in the countries of the region.*

**Table 8: IDB poverty lines for Latin America and the Caribbean (local current currency per capita per month)**

| | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Argentina | 19 | 37 | 85 | 375 | 11.927 | 287.916 | 782.297 | 98 | 108 | 113 | 116 | 117 |
| Bahamas | 39 | 41 | 44 | 46 | 48 | 50 | 54 | 57 | 59 | 60 | 61 | 62 |
| Barbados | 74 | 75 | 78 | 82 | 87 | 89 | 95 | 101 | 102 | 103 | 104 | 107 |
| Belize | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| Bolivia | 11.912.632 | 44.832.001 | 51 | 60 | 69 | 80 | 98 | 109 | 119 | 128 | 141 | 155 |
| Brazil | 138.235 | 339 | 1.118 | 8.743 | 121 | 3.684 | 19.925 | 220.901 | 4.967 | 46 | 92 | 106 |
| Chile | 4.406 | 5.265 | 6.311 | 7.238 | 8.470 | 10.676 | 13.024 | 15.053 | 16.868 | 18.723 | 20.391 | 21.715 |
| Colombia | 3.238 | 3.849 | 4.746 | 6.080 | 7.651 | 9.881 | 12.885 | 16.363 | 20.068 | 24.583 | 30.057 | 36.065 |
| Costa Rica | 1.331 | 1.488 | 1.739 | 2.101 | 2.448 | 2.914 | 3.751 | 4.570 | 5.016 | 5.919 | 7.015 | 7.988 |
| Dominican Rep. | 65 | 71 | 83 | 119 | 173 | 277 | 426 | 445 | 466 | 504 | 571 | 606 |
| Ecuador | 2.652 | 3.263 | 4.225 | 6.686 | 11.743 | 17.441 | 25.935 | 40.097 | 58.131 | 78.476 | 90.972 | 112.721 |
| El Salvador | 80 | 106 | 132 | 158 | 186 | 231 | 264 | 294 | 348 | 387 | 424 | 466 |
| Guatemala | 35 | 48 | 54 | 59 | 66 | 93 | 124 | 137 | 153 | 171 | 184 | 204 |
| Guyana | 116 | 125 | 161 | 226 | 429 | 701 | 1.413 | 1.811 | 1.992 | 2.291 | 2.501 | 2.613 |
| Haiti | 123 | 127 | 112 | 117 | 125 | 152 | 183 | 229 | 335 | N.A | 451 | 543 |
| Honduras | 72 | 76 | 77 | 81 | 89 | 110 | 147 | 160 | 177 | 221 | 279 | 362 |
| Jamaica | 127 | 147 | 156 | 169 | 194 | 236 | 357 | 632 | 772 | 1.003 | 1.250 | 1.450 |
| Mexico | 6.029 | 11.228 | 26.031 | 55.747 | 66.902 | 84.731 | 103.965 | 120.064 | 132 | 141 | 190 | 256 |
| Nicaragua | 846 | 6.609 | 66.874 | 6.898 | 335.966 | 25.483.769 | 145 | 174 | 210 | 231 | 251 | 284 |
| Panama | 42 | 42 | 43 | 43 | 43 | 43 | 44 | 45 | 45 | 45 | 46 | 46 |
| Paraguay | 7.767 | 10.233 | 12.465 | 15.280 | 19.318 | 26.693 | 33.179 | 38.198 | 45.165 | 54.649 | 61.768 | 67.800 |
| Peru | 279 | 497 | 924 | 7.085 | 247.873 | 18.792.907 | 96 | 166 | 247 | 306 | 339 | 379 |
| Suriname | 57 | 68 | 104 | 112 | 113 | 137 | 173 | 248 | 605 | 2.747 | 9.510 | N.A. |
| Trinidad and Tobago | 73 | 78 | 87 | 94 | 104 | 116 | 120 | 128 | 142 | 154 | 162 | 169 |
| Uruguay | 2.369 | 4.178 | 6.835 | 11.085 | 20.003 | 42.513 | 85.876 | 144.629 | 223 | 317 | 459 | 597 |
| Venezuela | 247 | 275 | 352 | 456 | 841 | 1,184 | 1,589 | 2,089 | 2,884 | 4,529 | 7,418 | 14,473 |

**Notes:** Poverty lines calculated using the consumption p.p.p. (Penn World Tables version Mark 5.6a) and inflated using the CPI yearly average.

**Currency Changes:**

**Argentina:** 1983: 1 peso argentino=10.000 pesos.
1985: 1 austral=1.000 pesos argentinos
1992: 1 peso argentino= 10.000 austales

**Brazil:** 1986: 1 cruzado=1.000 cruzeiros.
1989: 1 nuevo cruzado= 1.000 cruzados
1990: 1 cruzeiro= 1 nuevo cruzado
1993: 1 cruzeiro real= 1.000 cruzeiros
1994: 1 real= 2,750 cruzeiros reales

**Mexico:** 1993: 1 nuevo peso=1.000 pesos

**Nicaragua:** 1988: 1 nuevo cordoba=1.000 cordobas
1991: 1 cordoba de oro= 5.000.000 nuevos cordobas

**Peru:** 1985: 1 inti=1.000 soles.
1991: 1 nuevo sol= 1.000.000 de intis

**Uruguay:**
1993: 1 peso uruguayo= 1.000 nuevos pesos uruguayos

**Bolivia:** 1987: 1 boliviano=1,000,000 pesos.

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**Table 9  Poverty Lines Applied by the Main Studies cited in this Inventory of Poverty Estimates**
**(in current prices and local currency)**

| COUNTRY | Author | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---|---|---|---|---|---|---|---|---|
| Argentina | Psacharopoulos | 11.97 | ... | ... | ... | ... | ... | ... |
| (Greater Buenos Aires) | Morley | 16 | ... | ... | ... | ... | ... | ... |
|  | WB | 25.3 | 413.386 | 819.842 | 97.5 | 102.4 | ... | ... |
|  | CEPAL | ... | 386.424 | ... | 131 | ... | ... | ... |
|  | IDB | 12 | ... | ... | ... | ... | 114.4 | 116.3 |
| Bolivia | Psacharopoulos | 112 | | | | | | |
| (Urban) | WB | 133 | ... | ... | ... | 220 | ... | ... |
|  | CEPAL | 90 | ... | ... | 143 | ... | ... | ... |
|  | IDB | 73 | ... | ... | ... | 121 | 131 | 140 |
| Brazil | Psacharopoulos (urban) | 199 | | | | | | |
|  | (rural) | 131 | ... | ... | ... | ... | ... | ... |
|  | CEPAL | ... | 5.674 | ... | ... | ... | ... | ... |
|  | IDB | 235 | ... | ... | ... | ... | ... | 91 |
| Colombia | Psacharopoulos | 7.529 | | | | | | |
| (Urban) | WB | ... | ... | 17.293 | 22.864 | ... | ... | ... |
|  | CEPAL | ... | 23.810 | ... | 39.429 | ... | ... | ... |
|  | de Jong | 22.248 | ... | ... | ... | ... | ... | ... |
|  | IDB | 7.845 | ... | ... | 17.114 | 20.868 | 25.641 | ... |
| Costa Rica | Psacharopoulos (urban) | 2.941 | ... | ... | ... | ... | ... | ... |
|  | (rural) | 2.033 | ... | ... | ... | ... | ... | ... |
|  | Morley | 3.740 | | | | | | |
|  | CEPAL | ... | 4.452 | ... | 6.980 | ... | ... | ... |
|  | DGEC (urban) | 2,164 | 2,562 | 3,264 | 3,984 | 4,380 | 5,045 | 6,047 |
|  | (rural) | 1,872 | 2,187 | 2,810 | 3,447 | 3,812 | 4,341 | 5,238 |
|  | IDB | 2.431 | 2.868 | 3.733 | 4.593 | 5.019 | 5.625 | 6.881 |
| Chile | Psacharopoulos (urban) | 9.043 | ... | ... | ... | ... | ... | ... |
|  | (rural) | 6.098 | ... | ... | ... | ... | ... | ... |
|  | MIDEPLAN (urban) | ... | 18.594 | ... | 24.199 | ... | 30.100 | ... |
|  | (rural) | | 12.538 | | 16.316 | | 20.295 | |
|  | CEPAL (urban) | ... | 18.594 | ... | 26.218 | ... | ... | ... |
|  | (rural) | ... | 12.538 | ... | 17.679 | ... | ... | ... |
|  | IDB | 9.003 | ... | ... | ... | ... | ... | ... |
| Dominican Rep. | Psacharopoulos | 171 | ... | ... | ... | ... | ... | ... |
|  | (rural) | 171 | ... | ... | ... | ... | ... | ... |
|  | WB | ... | ... | 387 | ... | ... | ... | ... |
|  | IDB | 173 | | | | | | |
| Ecuador | Larrea | 13.183 | 19.282 | 28.994 | 49.198 | 58.131 | 78.476 | 90.972 |
| (Urban) | CEPAL | ... | ... | ... | ... | ... | ... | ... |
|  | Cabrera | ... | 49.710 | ... | ... | ... | ... | ... |
|  | Aguinaga | | | 25.250 | | | | |
|  | IDB | ... | ... | ... | ... | ... | 73.868 | ... |
| El Salvador | Psacharopoulos | ... | 390 | ... | ... | ... | ... | ... |
| (Urban) | WB | ... | ... | ... | 408 | ... | ... | ... |
|  | DI | ... | ... | ... | ... | ... | 457 | 501 |
|  | IDB | ... | 238 | ... | 271 | 327 | 368 | 400 |

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**Table 9 continued: Poverty Lines Applied by the Main Studies cited in this Inventory of Poverty Estimates**
**(in current prices and local currency)**

| COUNTRY | Author | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---|---|---|---|---|---|---|---|---|
| Guatemala | Psacharopoulos (urbano) | 93 | ... | ... | ... | ... | ... | ... |
| | (rural) | 64 | | | | | | |
| | IDB | 64 | ... | ... | ... | ... | ... | |
| Guyana | WB | ... | ... | ... | ... | 3,958 | ... | ... |
| Honduras | Psacharopoulos (urban) | 111 | ... | ... | ... | ... | ... | ... |
| | (rural) | 111 | ... | ... | ... | ... | ... | ... |
| | WB (urban) | 113 | 142 | 211 | 193 | 251 | ... | ... |
| | (rural) | 47 | 57 | 88 | 76 | 102 | ... | ... |
| | CEPAL (urban) | ... | 131 | ... | 190 | ... | ... | ... |
| | (rural) | | 114 | | 166 | | | |
| | de Jong (urban) | 113 | ... | ... | ... | ... | ... | ... |
| | (rural) | 47 | ... | ... | ... | ... | ... | ... |
| | WB(MoP) (urban) | 172 | 219 | 334 | 300 | 390 | ... | ... |
| | (rural) | 79 | 97 | 161 | 138 | 184 | | |
| | IDB | 91 | | | | | | |
| Jamaica | Psacharopoulos (urban) | 225 | ... | ... | ... | ... | ... | ... |
| | (rural) | 206 | ... | ... | ... | ... | ... | ... |
| | Gordon | 1,261 | | | | | | |
| | IDB | 193 | | ... | ... | ... | ... | ... |
| Mexico | Psacharopoulos (urban) | 75,623 | ... | ... | ... | ... | ... | ... |
| | (rural) | 75,623 | ... | ... | ... | ... | ... | ... |
| | INEGI (extreme pov.) | 86,400 | ... | ... | ... | ... | ... | ... |
| | (rural) | 68,810 | ... | ... | ... | ... | ... | ... |
| | CEPAL (urban) | 130,200 | ... | ... | 233,661 | ... | ... | ... |
| | (rural) | 113,925 | | | 204,454 | | | |
| | IDB | 67,192 | | ... | 121,250 | ... | 142 | ... |
| Panama | Psacharopoulos (urban) | 50 | ... | ... | ... | ... | ... | ... |
| | (rural) | 34 | ... | ... | ... | ... | ... | ... |
| | CEPAL (urban) | 51 | | 52 | | | | |
| | (rural) | 44 | ... | 45 | ... | ... | ... | ... |
| | IDB | 43 | ... | | ... | ... | ... | ... |
| Paraguay (Asuncion) | Psacharopoulos | ... | 45,211 | ... | ... | ... | ... | ... |
| | WB | | 47,102 | | | | | |
| | Sauma | ... | ... | ... | 129,159 | ... | ... | ... |
| | CEPAL | ... | 46,422 | ... | 66,429 | ... | ... | ... |
| | IDB | ... | 26,969 | 33,179 | 38,198 | 45,165 | 54,747 | 63,351 |
| Peru (Urban) | Psacharopoulos | ... | 161,532 | ... | ... | ... | ... | ... |
| | Cuanto | ... | ... | 50 | ... | ... | 145 | ... |
| | IDB | ... | 298,242 | ... | ... | ... | ... | ... |

**Table 9 continued: Poverty Lines Applied by the Main Studies cited in this Inventory of Poverty Estimates**
         **(in current prices and local currency)**

| COUNTRY | Author | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---|---|---|---|---|---|---|---|---|
| Uruguay | Psacharopoulos | 24.968 | ... | ... | ... | ... | ... | ... |
| (Urban) | CEPAL | ... | 62.045 | ... | 211.077 | ... | ... | ... |
| | IDB | 22.000 | ... | ... | ... | ... | ... | 371 |
| Venezuela | Psacharopoulos (urban) | 1.227 | | | | | | |
| | (rural) | 847 | ... | ... | ... | ... | ... | ... |
| | WB | 2.140 | ... | ... | ... | ... | ... | ... |
| | Morley | 2.367 | ... | ... | ... | ... | ... | ... |
| | Marquez (urban) | 2.118 | | 3.391 | | | | |
| | (rural) | ... | ... | 2.713 | ... | ... | ... | ... |
| | CEPAL (urban) | ... | 3.333 | ... | 5.879 | ... | ... | ... |
| | (rural) | ... | 1.694 | ... | ... | ... | ... | ... |
| | IDB | 934 | ... | ... | ... | ... | ... | 6,626 |

**Sources:** See table 2.

**Note:** Poverty lines are national unless it is otherwise indicated.

**Table 10: Nutrition Basket Estimates for Selected Countries.**

| Country | Source | K/Cal per | Cost of BFB (c) | Nat. currency as | Dollars (b) | Inverse of Engel Coeff. |
|---|---|---|---|---|---|---|
| Argentina | CEPAL | 2211 | 380.7 | 2nd Sem. 1988 | 31.53 | urban areas 2, rural areas |
| | WB (official) | 2700 | 49.47 | current 1993 | 49.47 | 2.07 |
| Brazil | CEPAL | 2183 | 12,250 | 2nd Sem. 1988 | 30.39 | urban areas 2, rural areas |
| Colombia | CEPAL | 2151 | 8,477.3 | 2nd Sem. 1988 | 26.67 | urban areas 2, rural areas |
| Costa Rica | CEPAL | 2167 | 2,047.3 | 2nd Sem. 1988 | 52.69 | urban areas 2, rural areas |
| | WB | 2900 | 1,265 | 1986 | 21.48 | 1.6 |
| Ecuador | | 2240 | 19,923.84 | current 1990 | 22.69 | 2.5 |
| | INEC | 2300 | 30,426 | current 1991 | 23.95 | 2.11 |
| El Salvador | WB (official) | 2200 | 204 | current 1990 | 25.5 | 2 |
| Guatemala | | | | | | |
| Urban | CEPAL | 2135 | 56.7 | 2nd Sem. 1988 | 41.94 | 2 |
| Rural | CEPAL | 2150 | 48.2 | 2nd Sem. 1988 | 31.19 | 1.75 |
| Guyana | WB (official, | 2400 | 2,927.92 | current 1993 | 22.38 | 1.35 |
| Honduras | | | | | | |
| Urban | WB (official, | 2600 | 195 | current 1993 | 26.71 | 2 |
| Rural | WB (official, | 2380 | 138 | current 1993 | 18.9 | 1.33 |
| Mexico | | | | | | |
| Urban | CEPAL | 2125 | 60,413.5 | 2nd Sem. 1988 | 52.98 | 2 |
| Rural | CEPAL | 2165 | 50,362.9 | 2nd Sem. 1988 | 38.64 | 1.75 |
| Panama | CEPAL | 2138 | 33.8 | 2nd Sem. 1988 | 33.8 | urban areas 2, rural areas |
| Peru | CEPAL | 2154 | 6,015.5 | 2nd Sem. 1988 | 26.78 | urban areas 2, rural areas |
| Uruguay | CEPAL | 2152 | 10,337 | 2nd Sem. 1988 | 25.77 | urban areas 2, rural areas |
| Venezuela | CEPAL | 2140 | 953.2 | 2nd Sem. 1988 | 35.3 | urban areas 2, rural areas |

**Notes:** (a) Poverty line for Bogot<. DANE has calculated individual lines for differente cities.

(b) Using the series "rf" (semester average) from IFS on exchange rates to convert the CEPAL lines and the annual average average for the other lines. Data taken from the IMF International Statistics Yearbook (various issues).

(c) Basic Food Basket.

**Table 11:  Poverty-Growth Elasticity in Latin America and the Caribbean, 1980-95.**

| | Poverty Incidence (P0)-Growth Elasticity | | Poverty Gap (P1)-Growth Elasticity | |
|---|---|---|---|---|
| | 'Adjusted data' | 'Non-adjusted data' | 'Adjusted data' | 'Non-adjusted data' |
| **IDB Poverty estimates** | | | | |
| Around 1980 (n=18) | -1.08* | -0.91* | -1.50* | -1.20* |
| Around 1989 (n=25) | -0.88* | -0.48** | -1.02* | -0.65** |
| Pooled 1980-95 (n=59) | -0.86* | -0.62* | -1.12* | -0.81* |
| | | | | |
| **Psacharopoulos, et al. estimates** | | | | |
| Around 1980 (n=25) | -1.60* | ... | ... | ... |
| Around 1989 [1] (n=19) | -1.42* | ... | ... | ... |
| | | | | |
| **Morley estimates (1992)** [2] | | | | |
| Pooled 1960-90 (n=128) | -2* | ... | ... | ... |

**Note**:  Basic equation ln P $''$ = $a$ + $b$ ln YPC + $c$ DU + $d$ DBRA, where P$a$= Poverty rate; YPC=Income per capita;
DU=Urban dummy; DBRA=Dummy for Brazil.  Regression coefficient b represents the poverty-income elasticity.
*-significant at 1% level.
**-significant at 5% level.

1) Psacharopoulos, et al. (1993) only estimate a poverty-growth elasticity for 1980, using the indicated functional specification.  They apply another regression equation for 1989 data.  The elasticity shown here for 1989 is a re-estimation using the same equation used for all other estimates.

2) Morley (1992) uses a different log specification with additional structural variables (minimum wage, education and inflation) and additional country dummies (see Morley 1992).

**Table 12:  Trends in Poverty Incidence (Using Adjusted Income)[1]**

| Country and period | Increase | Decrease | Unchanged | Trend |
|---|---|---|---|---|
| Argentina (GBA) 1989-94 | 1.5-2 | 0.5-1.5 | 0-0.5 | Ambiguous |
| Bolivia  (urban) 1986-89 | 0-0.4 | 0.4-0.9; 1.1-2 | 0.9-1.1 | Ambiguous |
| Bolivia (urban) 1993-95 | 0.8-2 | ... | 0-0.8 | Ambiguous |
| Brazil (national)1979-89 | 0-2 | ... | ... | Increased |
| Colombia (urban) 1980-89 | ... | 0-2 | ... | Decreased |
| Colombia (national) 1993-94 | ... | 0-2 | ... | Decreased |
| Costa Rica (national) 1981-90 | ... | 0-2 | ... | Decreased |
| Costa Rica (national) 1990-95 | ... | 0-2 | ... | Increased |
| Ecuador (urban) 1988-93 | 0-2 | ... | ... | Increased |
| El Salvador (national) 1992-95 | ... | 0-2 | ... | Decreased |
| Guatemala (national) 1986-89 | 0-1.6 | ... | 1.6-2 | Ambiguous |
| Honduras (urban) 1986-89 | 0.7-2 | ... | 0-0.7 | Ambiguous |
| Mexico (national) 1984-92 | 0-0.7 | 0.9-2 | 0.8 | Ambiguous |
| Mexico (national) 1992-94 | ... | 0.2-2 | 0-0.2 | Ambiguous |
| Panama (national) 1979-89 | 0-2 | ... | ... | Increased |
| Paraguay (Asuncion) 1983-94 | ... | 0.3-2 | 0-0.3 | Ambiguous |
| Uruguay (urban) 1981-89 | ... | 0.2-2 | 0-0.2 | Ambiguous |
| Uruguay (urban) 1989-95 | ... | 0.2-2 | 0-0.2 | Ambiguous |
| Venezuela (national) 1981-89 | 0-2 | ... | ... | Increased |

**Source:**  See graphs in Appendix 2, which are based on household survey data.
**Notes:**  1) By poverty line range. Numbers in the table indicate at which poverty line level distribution lines show an increase, decrease or no change in the poverty incidence.  Poverty lines are expressed as a proportion of the benchmark US $60 poverty line at 1985 PPP (=1), for a range of 0 to 2.

**Table 13:  Trends in Poverty Incidence (Using Non-adjusted income)[1]**

| Country and period | Increase | Decrease | Unchanged | Trend |
|---|---|---|---|---|
| Argentina (GBA) 1989-94 | 0.7-1.9 | 0.7-1.9 | 0-0.3; 0.6;1.9 | Ambiguous |
| Bolivia (urban) 1986-89 | 0-0.2 | 0.2-2 | ... | Ambiguous |
| Bolivia (urban) 1993-95 | 0.7-2 | ... | 0-0.7 | Ambiguous |
| Brazil (national)1979-89 | 0-2 | ... | ... | Increased |
| Colombia (urban) 1980-89 | ... | 0-2 | ... | Decreased |
| Colombia (national) 1993-94 | ... | 0-2 | ... | Decreased |
| Costa Rica (national) 1981-90 | ... | 0-2 | ... | Decreased |
| Costa Rica (national) 1990-95 | ... | 0-2 | ... | Decreased |
| Ecuador (urban) 1988-93 | 0-2 | ... | ... | Increased |
| El Salvador (national) 1992-95 | ... | 0-2 | ... | Decreased |
| Guatemala (national) 1986-89 | 0.2-2 | ... | 0-0.2 | Ambiguous |
| Honduras (urban) 1986-89 | 0.5-2 | ... | 0-0.5 | Ambiguous |
| Mexico (national) 1984-92 | ... | 0.4-2 | 0-0.4 | Ambiguous |
| Mexico (national) 1992-94 | 0.7-2 | … | 0-0.7 | Ambiguous |
| Panama (national) 1979-89 | 0-2 | ... | ... | Increased |
| Paraguay (Asuncion) 1983-94 | ... | 0-2 | ... | Decreased |
| Uruguay (urban) 1981-89 | ... | 0.2-2 | 0-0.2 | Ambiguous |
| Uruguay (urban) 1989-95 | ... | 0.2-2 | 0-0.2 | Ambiguous |
| Venezuela (national) 1981-89 | 0-2 | ... | ... | Increased |

**Source:**  See Table 12.
**Note:**  1) See Table 12.

## Figure 1 Latin America: Poverty and Growth in the 1980s

### (non-adjusted income data for poverty incidence; IDB poverty line)



## Figure 2 Latin America: Poverty and Growth in the 1990s

### (non-adjusted income data for poverty incidence: IDB poverty line)

## Figure 3 Latin America: Poverty and Growth in the 1990s

### (adjusted income data for poverty incidence; IDB poverty line)
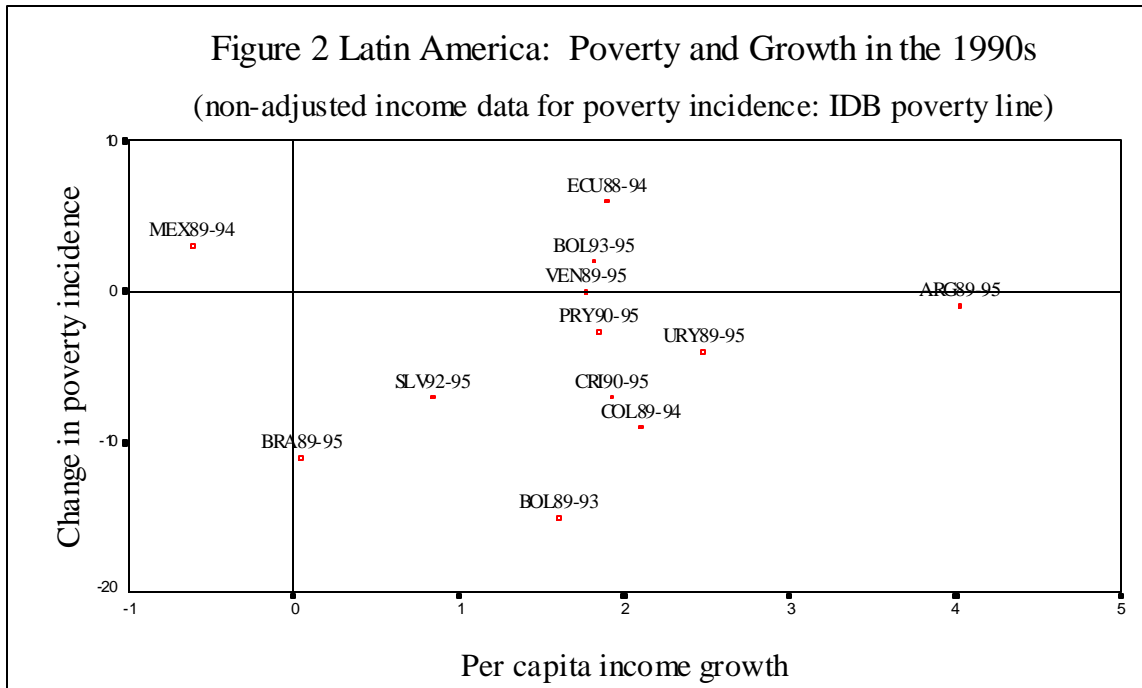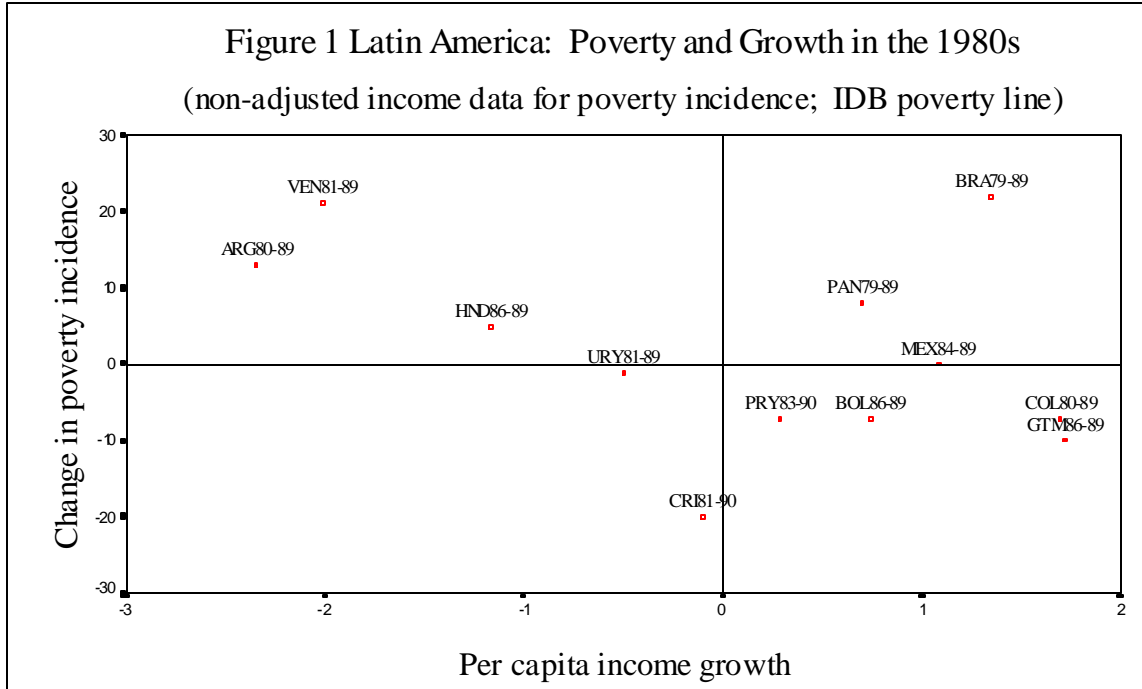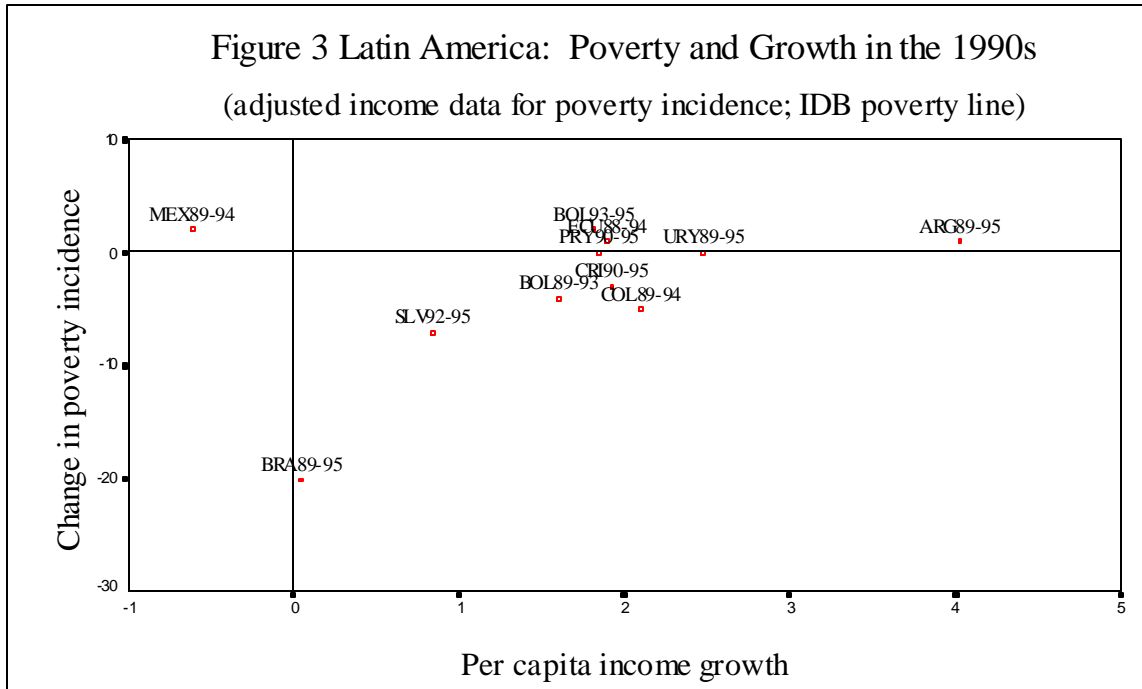
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# APPENDICES

**Appendix 1:  Overview of Household Surveys Characteristics.**

**Appendix 2:  Sensitivity Analysis.**

**Appendix 3:  Country Tables.**

Appendix 1: **Table A.1: Overview of Household Surveys Characteristics.**

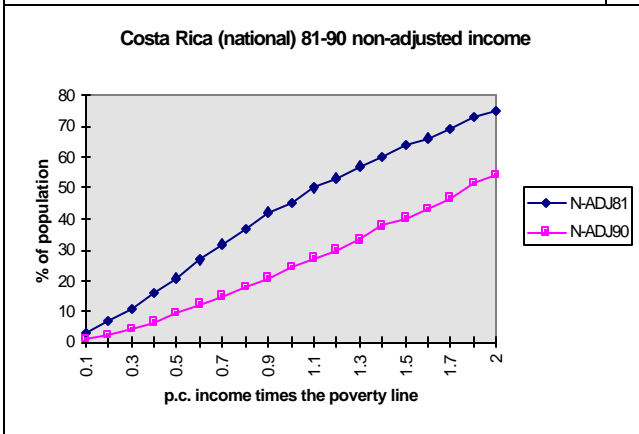| Country | Year | Coverage | Reference period | Period of survey | Name | Number of HH | Type of Survey |
|---|---|---|---|---|---|---|---|
| Argentina | 1980 | Greater Buenos Aires | Month | Oct. | Encuesta Permanente de Hogares | 3,400 | HHS |
| Argentina | 1986 | Greater Buenos Aires | Month | Oct. | Encuesta Permanente de Hogares | 4,498 | HHS |
| Argentina | 1989 | Greater Buenos Aires | Month | May | Encuesta Permanente de Hogares | 4,893 | HHS |
| Argentina | 1994 | 23 Urban centers | Month | May | Encuesta Permanente de Hogares | 22,507 | HHS |
| Argentina | 1995 | 23 Urban centers | Month | May | Encuesta Permanente de Hogares | ... | HHS |
| Argentina | 1996 | Greater Buenos Aires | Month | April | Encuesta Permanente de Hogares | ... | HHS |
| Bolivia | 1986 | Urban | Month | Year | Encuesta Permanente de Hogares | 12,226 | HHS |
| Bolivia | 1989 | Urban | Month | Nov. | Encuesta Integrada de Hogares | 37,864 | HHS |
| Bolivia | 1993 | Urban | Month | Aug. | Encuesta Integrada de Hogares | 19,769 | HHS |
| Bolivia | 1994 | Urban | Month | Aug. | Encuesta Integrada de Hogares | ... | HHS |
| Bolivia | 1995 | Urban | Month | Aug. | Encuesta Integrada de Hogares | ... | HHS |
| Brazil | 1979 | National | 22-28 Oct. | Nov. | Pesquisa Nacional por Amostra de Domicilios | 88,975 | HHS |
| Brazil | 1989 | National | 24-30 Sep. | Oct.-Nov. | Pesquisa Nacional por Amostra de Domicilios | 70,777 | HHS |
| Chile | 1980 | National | Variable | Fourth quarter | Encuesta Nacional de Empleo | 26,366 | LF |
| Chile | 1986 | National | Variable | Fourth quarter | Encuesta Nacional de Empleo | 32,950 | LF |
| Chile | 1989 | National | Variable | Fourth quarter | Encuesta Nacional de Empleo | 32,456 | LF |
| Colombia | 1980 | Urban | Month | Sep. | Encuesta Nacional de Hogares-Fuerza de Trabajo | 7,473 | HHS/LF |
| Colombia | 1986 | Urban | Month | Sep. | Encuesta Nacional de Hogares-Fuerza de Trabajo | 17,438 | HHS/LF |
| Colombia | 1989 | Urban | Month | Sep. | Encuesta Nacional de Hogares-Fuerza de Trabajo | 17,949 | HHS/LF |
| Colombia | 1992 | National | Month | Sep. | Encuesta Nacional de Hogares-Fuerza de Trabajo | 23,796 | HHS/LF |
| Colombia | 1993 | National | Month | Sep. | Encuesta Nacional de Hogares-Fuerza de Trabajo | 23,796 | HHS/LF |
| Colombia | 1994 | National | Month | Sep. | Encuesta Nacional de Hogares-Fuerza de Trabajo | 23,796 | HHS/LF |
| Costa Rica | 1981 | National | Month | July | Encuesta Nacional de Hogares-Empleo y Desempleo | 6,604 | HHS/LF |
| Costa Rica | 1986 | National | Month | July | Encuesta Nacional de Hogares-Empleo y Desempleo | 7,627 | HHS |
| Costa Rica | 1989 | National | Month | July | Encuesta de Hogares de Propositos Multiples | 7,637 | HHS |
| Dominican Rep. | 1989 | National | Month | March | Encuesta de Gasto Social | 799 | HHS |
| Ecuador | 1987 | Urban (major cities) | Variable | Nov. | Encuesta Periodica sobre Empleo y Desempleo | 5,558 | LF |
| Ecuador | 1994 | National | 2 weeks | May - July | Encuesta de Condiciones de Vida | 4,536 | LSMS |
| Ecuador | 1995 | National | 2 weeks | May- July | Encuesta de Condiciones de Vida | ... | LSMS |
| El Salvador | 1989 | Urban | Month | Oct/1988-Feb/ 1989 | Encuesta de Hogares de Propositos Multiples | 5,775 | HHS |
| El Salvador | 1990 | Urban | Month | Oct. | Encuesta de Hogares de Propositos Multiples | 6,405 | HHS |

**Table A.1 continued:  Overview of Household Surveys Characteristics.**

| Country | Year | Coverage | Reference period | Period of survey | Name | Number of HH | Type of Survey |
|---|---|---|---|---|---|---|---|
| El Salvador | 1992 | National | Month | Oct/1991-Mar./1992 | Encuesta de Hogares de Propositos Multiples | 20,504 | HHS |
| El Salvador | 1993 | National | Month | Oct/1992-Mar/1993 | Encuesta de Hogares de Propositos Multiples | 20,504 | HHS |
| El Salvador | 1994 | National | Month | Continuos, all year | Encuesta de Hogares de Propositos Multiples | 20,064 | HHS |
| El Salvador | 1995 | National | Month | Continuos, all year | Encuesta de Hogares de Propositos Multiples | 10,064 | HHS |
| Guatemala | 1986-87 | National | Month before | Oct/1986-Aug/1987 | Encuesta Nacional Socio-Demografica | 9,660 | HHS |
| Guatemala | 1989 | National | Month before | April 4 - July 24 | Encuesta Nacional Socio-Demografica | 10,934 | HHS |
| Honduras | 1986 | Urban | Month before | Sep. | Encuesta Continua Sobre Fuerza de Trabajo | 8,650 | LF |
| Honduras | 1989 | National | Month before | Sep. | Encuesta Permanente de Hogares de Propositos Multiples | 8,648 | HHS |
| Jamaica | 1989 | National | Month before | July | Jamaica Survey of Living Conditions | 2,725 | IES |
| Mexico | 1984 | National | Month before | First quarter | Encuesta Nacional de Ingreso-Gasto de los Hogares | 4,963 | IES |
| Mexico | 1989 | National | Month before | Third quarter | Encuesta Nacional de Ingreso-Gasto de los Hogares | 11,535 | IES |
| Mexico | 1992 | National | Month before | Third quarter | Encuesta Nacional de Ingreso-Gasto de los Hogares | 10,178 | IES |
| Mexico | 1994 | National | Month before | Third quarter | Encuesta Nacional de Ingreso-Gasto de los Hogares | 12,530 | IES |
| Panama | 1989 | National | Month beofere | Aug. | Encuesta de Hogares, Mano de Obra | 8,817 | HHS/LF |
| Panama | 1979 | National | Week/month | Sep. 19 - Oct. 28 | Encuesta de Hogares, Mano de Obra | 8,593 | HHS/LF |
| Paraguay | 1983 | Greater Asuncion | Month | June - Aug. | Encuesta de Hogares, Mano de Obra | 5,138 | HHS/LF |
| Paraguay | 1990 | Greater Asuncion | Month | June - Aug. | Encuesta de Hogares, Mano de Obra | 4,791 | HHS/LF |
| Paraguay | 1994 | Urban | Month | June - Aug. | Encuesta de Hogares, Mano de Obra | 2,950 | HHS/LF |
| Paraguay | 1995 | National | Month | June-Nov. | Encuesta de Hogares | ... | HH |
| Peru | 1985-86 | National | Week/month | July/1985-July/1986 | Peru:  Estudio de medicion de los niveles de vida | 4,981 | IES |
| Peru | 1990 | Lima | Previous 7 days | June - July | Peru:  Estudio de medicion de los niveles de vida | 1,385 | IES |
| Uruguay | 1981 | Urban | Month before | July - Dec. | Encuesta Nacional de Hogares | 9,506 | HHS |
| Uruguay | 1986 | Urban | Month before | July - Dec. | Encuesta Nacional de Hogares | ... | HHS |
| Uruguay | 1989 | Urban | Month beofre | July - Dec. | Encuesta Nacional de Hogares | 21,473 | HHS |
| Venezuela | 1981 | National | Week/month | July - Dec. | Encuesta de Hogares por Muestra | 45,421 | HHS |
| Venezuela | 1986 | National | Week/month | July - Dec. | Encuesta de Hogares por Muestra | 129,663 | HHS |
| Venezuela | 1989 | National | Week/month | July - Dec. | Encuesta de Hogares por Muestra | 61,385 | HHS |

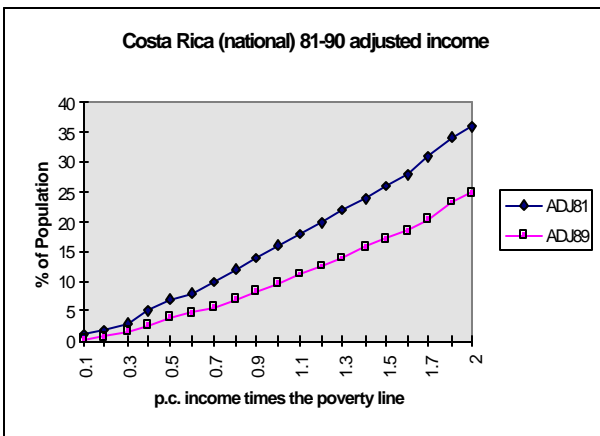**Notes**:  HHS:  Household Survey

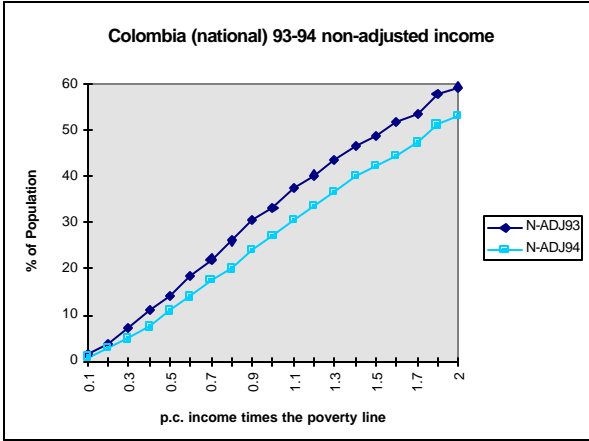LF:  Labor Force Survey

IES:  Income and Expenditures Survey

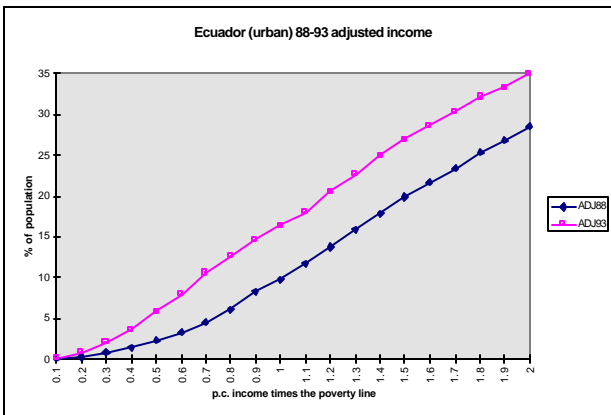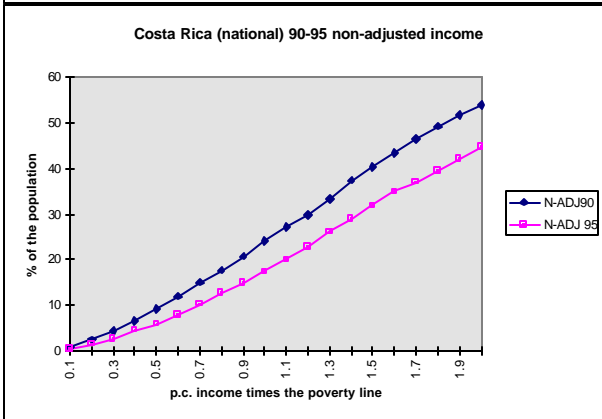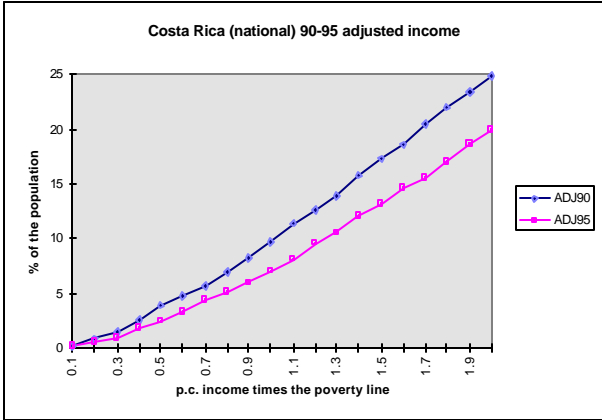# Appendix 2: Sensitivity Analysis.

The 'y' axis represents the percentage of the total population that would be under the poverty line if that were the value of the poverty line. The 'x' axis represents the poverty line as a proportion of the original US$60 PPP 1985 poverty line expressed in current local currency, i.e. a value equal to unity is the point where per capita income is the same as the poverty line.
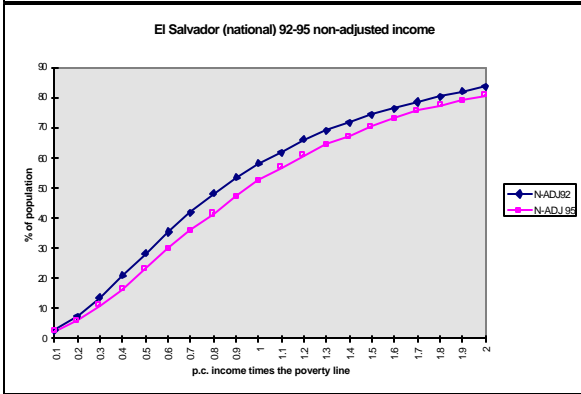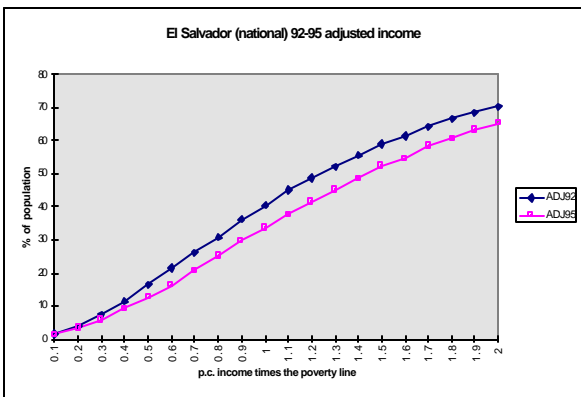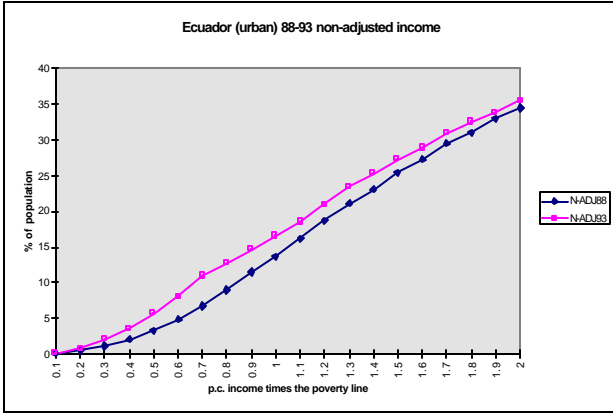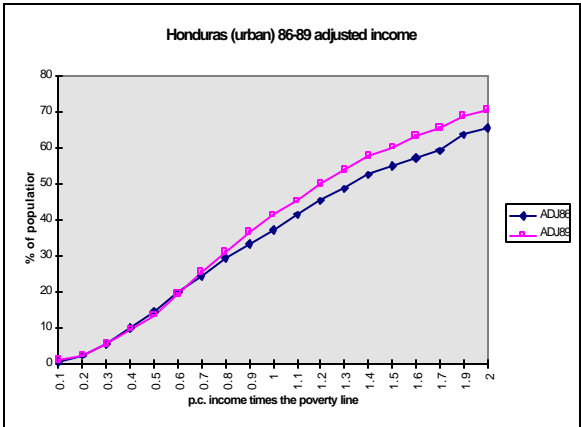
Bolivia (urban) 93-95 adjusted income



Bolivia (urban) 93-95 non-adjusted income



Brazil (national) 79-89 adjusted income



Brazil (national) 79-89 non-adjusted income

**Colombia (urban) 80-89 adjusted income**

**Colombia (urban) 80-89 non-adjusted income**

**Colombia (national) 93-94 adjusted income**

**Colombia (national) 93-94 non-adjusted income**



**Costa Rica (national) 81-90 adjusted income**



**Costa Rica (national) 81-90 non-adjusted income**

**Costa Rica (national) 90-95 adjusted income**



**Costa Rica (national) 90-95 non-adjusted income**



**Ecuador (urban) 88-93 adjusted income**

**Ecuador (urban) 88-93 non-adjusted income**



**El Salvador (national) 92-95 adjusted income**



**El Salvador (national) 92-95 non-adjusted income**

**Guatemala (national) 86-89 adjusted income**



**Guatemala (national) 86-89 non-adjusted income**



**Honduras (urban) 86-89 adjusted income**

**Honduras (urban) 86-89 non-adjusted income**



**Mexico (national) 84-92 adjusted income**



**Mexico (national) 84-92 non-adjusted income**

**Mexico (national) 92-94 adjusted income**



**Mexico (national) 92-94 non-adjusted income**



**Panama (national) 79-89 adjusted income**

**Panama (national) 79-89 non-adjusted income**



**Paraguay (Asunción) 83-94 adjusted income**



**Paraguay (Asuncion) 83-94 non-adjusted income**

Uruguay (urban) 81-89 adjusted income



Uruguay (urban) 81-89 non-adjusted income



Uruguay (urban) 89-95 adjusted income

**Uruguay (urban) 89-95 non-adjusted income**



**Venezuela (national) 81-89 adjusted income**



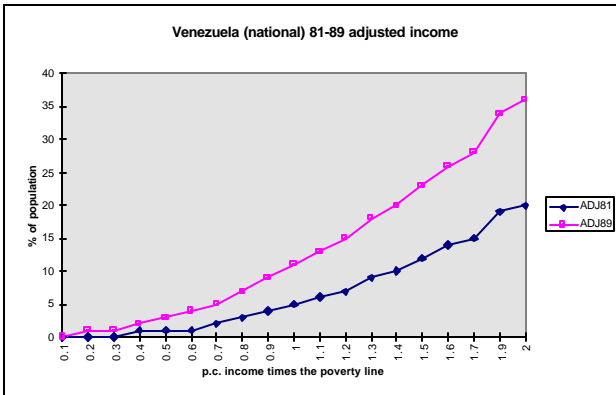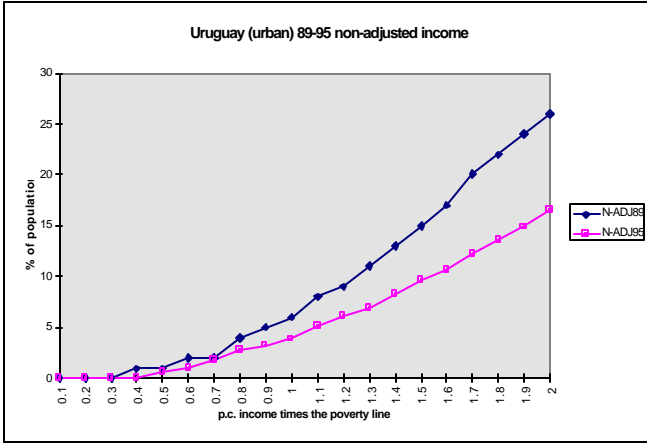**Venezuela (national) 81-89 non-adjusted income**

# Appendix 3:  Country Tables

(Note:   Poverty estimates included in Appendix Tables refer to estimates from alternative sources and mostly are not comparable for the variety of reasons explained in the text. Poverty estimates from alternative sources were calculated after doing adjustments for income underreporting unless otherwise estated in the country table's notes.)