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PERSISTENT POVERTY AND EXCESS INEQUALITY: LATIN AMERICA, 1970-1995

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This work assesses the changes in aggregate poverty and inequality that have taken place in Latin America during the past 26 years. With this objective, we put together the largest number of observations on income distribution for the region for the period 1970-1995. We find that poverty and inequality have not declined during the 1990s in spite of improvements at the macroeconomic level. The characteristics of our data allow us to perform various comparisons between countries. Our results show that even though there are differences in levels across countries, inequality and poverty in most of them follow similar trends during the period under study.

JEL classification codes: D31, I32, O54.
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I. Introduction

During the past 26 years, the Latin American and the Caribbean (LAC) region has gone through three stages. The 1970s were characterized by macroeconomic

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stability and high growth rates. The 1980s were years of volatility and stagnation, while the first half of the 1990s has seen a return to a more stable macro environment and the recovery of positive growth rates.[1]

With regard to the welfare changes at the microeconomic level, it is normally thought that poverty and inequality were reduced during the 1970s, and it is widely agreed that both of these indicators deteriorated sharply during the 1980s.[2] Not much evidence has been produced for the 1990s, but in principle one would expect that given the favorable conditions, the number of poor and the level of inequality would have been reduced.

The objective of this work is to assess the changes in poverty and inequality that have taken place in LAC from 1970 to 1995, with special emphasis on the 1990s. The main distinctive characteristic of the study is that rather than focusing on individual country experiences, as most of the literature on this subject has done, we produce aggregate indicators for the whole region.

Apart from presenting aggregate poverty and inequality estimates for the past 26 years, a contribution of the paper is that it puts together the largest number of observations on income distribution during that period. We do this by expanding by 55% the database compiled by Deininger and Squire (DS) (1996). This allows us to construct several aggregate indicators such as a LAC Lorenz Curve, and to perform various comparisons between countries.[3]

Contrary to our expectations, we find that although the 1990s have been a decade of recovery and stability, poverty and inequality have not declined significantly in the region. This suggests that although a favorable macroeconomic

[1] Inter American Development Bank (1997).

[2] This has been documented by Psacharopoulos, et.al. (1993), Bulmer-Thomas (1996), Lustig (1996), Fields (1992), Morley (1992), Chen, et.al. (1994), Ravallion and Chen (1997), and Altimir (1994a), among others.

[3] In Londoño and Székely (1997) we present an Appendix where all observations for each of the 13 Latin American countries used in this paper, can be found, and we provide more information on data sources for each country. The paper and whole database can be accessed electronically at: http://www.iadb.org/oce/pdf/357.pdf.

scenario could facilitate poverty alleviation and improvements in income distribution, it is not a sufficient condition. We also find that inequality within the Latin American countries considered in our sample fluctuates considerably during relatively short time-periods, and that the differences between countries contribute much less to total inequality in the region than the differences within countries. This is in contrast with the recent "stylized fact" suggested by other authors that inequality within countries is relatively unimportant as compared with the differences between countries.

As aggregate trends inevitably hide a variety of country experiences, we also engage in an analysis of the differences between countries. We find that even though there are discrepancies in the levels of poverty and inequality across the countries in our sample, most of them followed roughly the same trend as the aggregate indicators.

The work is divided in six sections. The second section describes the data, the third presents the aggregate trends in inequality, the fourth focuses on the changes in poverty, the fifth looks at the connection between poverty and inequality, the sixth compares the welfare changes between countries, and the last draws some conclusions.

II. The Data

As argued by Deininger and Squire (1996), a "good quality" indicator on income distribution for any country fulfills at least the following minimum requirements: (i) it is obtained from a household survey, (ii) it contains information on all income sources, (iii) the unit of observation is the household or the individual, and (iv) it is representative at the national level. The main problem found when estimating the level of inequality and poverty in any region is that this kind of information is usually not readily available for all countries, and LAC is not the exception.

In the most comprehensive worldwide compilation of income distribution indicators up to date, Deininger and Squire (1996) were able to put together 96

"good quality" observations for the LAC region from 1970-1994.[4] Each observation consists of a Gini coefficient, and in most cases there is also information on the distribution of income or consumption by quintiles. By adding the restrictions (i) of having at least one observation for each decade and country,[5] (ii) of reporting both the Gini coefficient and the quintile shares,[6] and (iii) that inequality within any given country is measured consistently by using either expenditure or income as welfare indicator,[7] we ended up with 73 observations.

Following the same criteria proposed by DS, we were able to find 40 additional "good quality" observations for several Latin American countries, which are not in the original DS database.[8] As we had access to the original household surveys in each of these 40 cases (one observation for Panama and two for Peru were obtained from published sources), we estimated a Gini coefficient and the quintile

[4] The original data consists of 682 observations for 108 countries from 1947-1994. For the purposes of this work, we classified The Bahamas as a Latin American country, although it is not originally classified as such. Therefore, the number of observations in Latin America from 1970-1995 in the original database is 86.

[5] This restriction guarantees that the sample of countries is stable throughout 1970-1995. To fulfill this requirement, we discarded 9 observations belonging to Bolivia, Ecuador, El Salvador, Nicaragua, Puerto Rico, and Trinidad. We made three exceptions regarding the inclusion of a country in our sample. First, we included Guatemala although the country does not have information for the 1990s. In this case, a distribution for 1989 is available, and we used it as a proxy for the present decade. The second exception is Honduras, which originally does not have a distribution for the 1970s. Nevertheless, the country has an observation for 1968 and we used this distribution to compute the estimates for 1970. The third is the inclusion of the Dominican Republic, which does not have an observation for the 1970s.

[6] This is necessary for measuring poverty. To fulfill this restriction, we had to eliminate 16 observations.

[7] To fulfill this requirement we drop 3 observations from the original data set (Brazil 1974, and Peru 1971 and 1981).

[8] The additional observations by country were: Brazil (4), Chile (4), Colombia (1), Costa Rica (6), Dominican Republic (2), Honduras (4), Mexico (2), Panama (2), Peru (3), and Venezuela (12).

shares with primary data by using common methodology and definitions. This increases the level of comparability among these observations.[9]

To the 73 observations in DS we added our 40 observations, and ended up with an expanded data set consisting of 113 Gini coefficients and quintile shares belonging to 13 countries from 1970-1995. This is the largest "good quality" data set available for the region for this period, and it covers 83% of the LAC population. Our expanded data includes 31 observations for the 1970s, 43 for the 1980s, and 39 for the 1990s. Table A1 in the Appendix provides more information on sources.[10]

Although our data can be regarded as being of better quality and coverage than the one used in other studies,[11] some observations are still not strictly comparable. This limitation is not exclusive to the LAC region, as any international comparison faces the problem of having different methodologies and questionnaires to gather information, as well as differences in the treatment of non-cash incomes, in survey data collection, in the definition of a welfare indicator, in the unit of observation, etc.[12] As explained by Atkinson (1991) complete cross-national comparability is not attainable. Comparability is more a matter of degree and all one can hope for is reaching an acceptably high level.[13]

DS noted that the two main problems of comparability in their data (this applies

[9] The only country where the distribution refers to consumption rather than income, is Jamaica. In all other cases, the data refer to the distribution of income.

[10] On average, we have one observation per country every four years, but there are differences between countries. For instance, Venezuela has 22 surveys from 1970-1995, while Guatemala has only 3. There are also countries like The Bahamas, Brazil, and Costa Rica with 10 or more observations (which gives an average of one observation almost every two years). The remaining countries have one survey approximately every 4 years.

[11] See for instance the work by Psacharopoulos, et.al. (1993).

[12] Berry, et.al. (1983a), Atkinson and Micklewright (1992), Grosh and Glewwe (1996), Gottschalk and Smeeding (1997), and Ravallion and Chen (1997) discuss these issues.

[13] It should also be noted that the data usually does not correct for things such as the provision of public goods in each country, so the same income level or income distribution could mean different things. Adjusting each income level and distribution is a complex process and is out of the scope of this paper.

also to the expanded LAC database), are that there are differences regarding the unit of observation (individuals or households) and that in some countries the welfare indicator is income and in others it is consumption. With regard to the first problem, the authors tested the hypothesis that there is significant difference between the Gini indexes computed with the distribution by individuals, and those obtained with the distribution by households, but they found no evidence supporting the argument. Therefore, we have used all the data irrespective of the unit of observations, as this is not likely to introduce considerable bias into our results.[14]

In the case of welfare indicators, the authors found that the distribution of incomes was systematically more unequal than the distribution of consumption, as would be expected. In LAC, most countries report the distribution of income, and only Jamaica and Peru have household surveys that focus on consumption. Deininger and Squire have suggested adding 6.6 points to the Gini coefficients that are based on consumption to make them more comparable with income distribution.[15] We have not followed the same procedure here, so the implication for our conclusions is that we might be underestimating the level of poverty and income inequality in LAC (due to the incorporation of some consumption-based estimates), but the magnitude of the underestimation is not likely to be very large.

In Latin America, perhaps the main comparability problem is caused by the significant differences in under-reporting across countries and even within the same country through time. Therefore, an apparent change from one point in time to another could be caused simply by changes in under-reporting. There are several ways of correcting this problem, and in Section III we explain how we will proceed to do so here.

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[14] Mixing information on households and individuals implicitly assumes that household size is invariant across the distribution, and that the equivalence scale is equal to 1. It is well known however, that poorer households are usually larger; therefore, the assumption may result in underestimated poverty.

[15] By using the original data set the authors found that on average, the Gini measured with income was 6.6 greater than the Gini measured with consumption.

III. Changes in Inequality in LAC during 1970-1995

In this section we provide a picture of the changes in inequality that have taken place in LAC from 1970-1995. In contrast to related studies that look at individual countries to derive conclusions for the whole region, our objective is to produce yearly aggregate indicators for LAC. We start by discussing some methodological issues, and then present the aggregate trends.

A. Methodological Problems

There are three main problems that have to be solved in order to obtain an aggregate estimate of inequality for any region in the world. The first is missing data, the second is the selection and computation of an inequality measure, and the third is the method of aggregation.

A problem of missing data arises because the expanded data set does not include one observation per country per year. To include countries with no data, several authors have extrapolated indicators by using an econometric model applied to the existing observations,[16] but for our purposes we do not consider this necessary as our sample already covers a very large proportion (around 83%) of the LAC population. Regarding the missing years, in Table A1 in Appendix A we show that there is not a single year for which all of our 13 countries have a household survey. The closest is 1989, where Colombia and Peru are the only without information. Therefore, we need some assumptions about how income distribution changes

[16] For instance, Schultz (1997), Morley (1995), and Psacharopoulos, et.al. (1993) have used GDP per capita and regional dummies to predict the variable, while Ravallion, et.al. (1991) and Chen, et.al. (1994) use a more complex model that includes life expectancy, child mortality, school enrollment, and urban-rural distribution of the population to predict the extent of poverty in countries where information on income distribution is unavailable. One of the draw backs of the latter procedure is that Lustig (1996), Fields (1992), and Kakwani (1993) have shown that most of the times poverty and inequality in LAC and other regions in the world have been only weakly correlated to the indicators used to predict them. This suggests that any extrapolation will be subject to some error.

through time. The most common procedure is to use the distributions available and, assuming that inequality remains very stable, impute this information in other years.[17] Since we noticed that among the countries in our sample there are considerable variations in inequality in short time periods, we interpolated the quintile shares for the missing years rather than assuming that the distribution remains unchanged.[18]

Once we have one observation per country per year, we have to decide how to summarize the information on inequality. Here we will use several measures that are directly derived from the quintile shares, plus the Gini index. As shown by Lerman and Yitzhaki (1989), in the case of the Gini there are several ways of estimating the index from aggregate data. Here, we will proceed by using the parametrization suggested by Villaseñor and Arnold (1989), which produces very accurate estimates.[19]

Regarding the problem of aggregating the data to obtain an indicator for the region as a whole, there are at least three possibilities. The most straight forward is simply to obtain the average Gini index (see for instance Deininger and Squire). A second option is to follow Theil (1979), Berry, et.al. (1983b), Korzeniewics and Moran (1997), and Schultz (1997), and compute a measure of inequality by adding the inequalities within countries to the differences between countries. Still a third possibility is to compute the index by constructing a Lorenz Curve that ranks individuals according to their position within the LAC region rather than with respect to the position they hold within their country of origin. This procedure has been followed by Grosh and Nafzinger (1986), Berry, et.al. (1983a), and

[17] Ravallion and Chen (1997), Schultz (1997), Chen, et.al. (1994), and Grosh and Nafzinger (1986) have followed this procedure.

[18] In the case of Chile, Honduras, and Mexico we used the observations for 1968 to derive the trends in the early 1970s due to the lack of observations closer to 1970. To estimate inequality during the 1990s in the three countries that do not have information for 1993, 1994, or 1995 (Guatemala, the Dominican Republic, and Panama), we assume that income distribution follows the trend observed in the previous 3 years.

[19] This parametrization consists of finding the quadratic equation that provides the best fit for a Lorenz Curve, given the data ordered by population and income shares.

Atkinson (1996). Since these three methods provide useful information, we will use all of them.

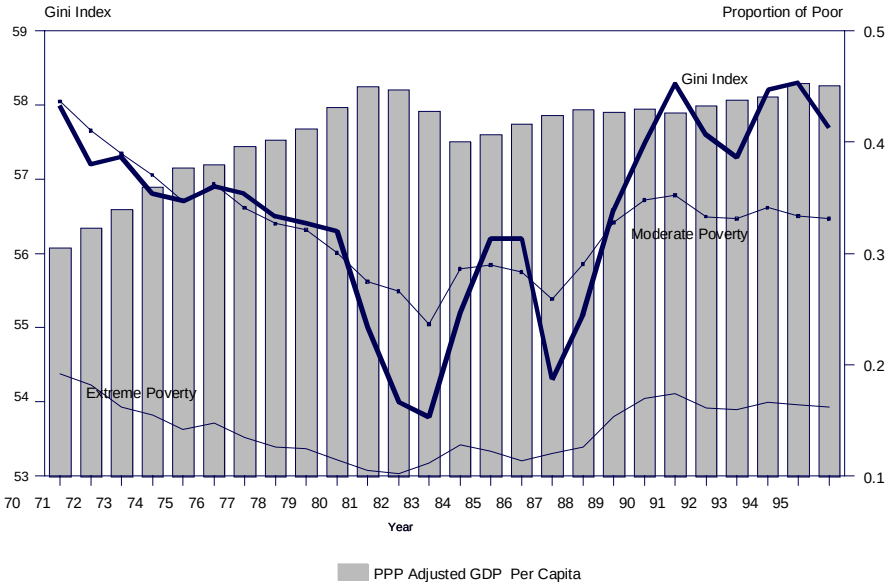
B. The Aggregate Trends

As mentioned above, one possibility for summarizing the information on income distribution is to construct a Latin-American Lorenz Curve that ranks each country's individuals according to their position in the LAC population. To obtain such ranking, we would require the income of each individual, but as we only have information on quintile shares there would be a large margin for error. Fortunately, the procedure in Villaseñor and Arnold (1989) allows us to obtain the fitted value of a Lorenz Curve with any level of disaggregation once the parameters of the original curve are known. To improve the precision of the per capita income estimates, we estimated the parameters for every country and year and then derived the fitted distribution by percentile, rather than by quintile. Given the new desegregated distributions, we computed the real income of each percentile by country, using the PPP adjusted GDP per capita from the *World Penn Tables*.[20] With the 1,300 observations per year (100 per country), it was possible to find the position of each percentile within the region. Using this methodology, we present our estimates of inequality in Figure 1.

First, regarding macro economic performance (see bars with GDP per capita), the figure illustrates that the decade of the 1970s was one of economic expansion, ending in 1981. The early 1980s were characterized first by recession and later by stagnation, while the 1990s show a recovery. Also income distribution improved substantially from 1970 to 1982 (the Gini index was reduced by five points), while the 1980s coincided with a sharp deterioration in income distribution (the Gini peaked at 58.3 in 1990). With regard to the 1990s, the distribution of income seems to have fluctuated around the level registered in 1990. Therefore, contrary to expectation, income inequality has not improved during the recovery process.

[20] This source only provides information up to 1992. We constructed the PPP GDP per capita for the missing years by using the growth of PPP adjusted GDP per capita in the World Bank World Development Indicators, 1998 edition.

Figure 1. GDP per Capita, Inequality, and Poverty in LAC during 1970-1995



Source: Authors calculations

Table A2 in Appendix A shows our computations of the average Gini coefficient calculated from the individual Gini of each country -that is, ranking individuals according to their position within the country rather than with respect to the region-. Both the average and the population-weighted Gini coefficients follow the same trend as the one computed from the LAC Lorenz Curve, although they are of different magnitude. The fact that the weighted average is greater than the non-weighed average in each year indicates that larger countries are generally more unequal.

As Atkinson (1970) explained, different inequality measures give different weight to different sections of the distribution, so it is convenient to check the robustness of our results not only to the method of aggregation, but also to the choice of an index. Table A2 presents the estimates of two other inequality measures, namely the share of the top to the bottom quintile -which only attaches weight to

the two tails of the distribution - and the Theil inequality index. The aggregate quintile shares are obtained through weighted and non-weighed averages and by using the LAC Lorenz Curve which, along with the Theil index, substantiates our conclusions about the trend from 1970 to 1995.

One advantage of the Theil inequality index is that it can be decomposed into two terms: one that indicates the amount of inequality due to differences between countries, and another that computes the inequality within the countries.[21] Table A2 presents the separation of the index into these two terms, and shows that most of the inequality in LAC is due to differences within the countries, while only around 10% of overall inequality is due to between country disparities.

This result is interesting for three reasons. First, it shows that there are small differences between the countries of the region; thus, computing an aggregate index makes sense and provides a good representation of the country experiences. Second, it can be argued that inequality in LAC is expected to be higher than the inequality in other regions simply because LAC is large in size and it includes a large number of countries at different stages of development. However the evidence for the between-group element of the decomposition proves that this is not the case.

Third, the results suggest that the large fluctuations in aggregate inequality in LAC experienced during the past 26 years are the outcome of large income redistributions occurring within the countries. To quantify the importance of the changes within countries, we use the decomposition method suggested by Tsakloglou (1993), which allows to separate the total change in inequality into the contribution of between-group and within-group changes. As can be seen in Table A2 in the Appendix, the Theil index for the whole of Latin America declined from 23.8 to 21.7 points between 1970 and 1980. Of the total change, more than 60% is accounted for by the improvement in the distribution within countries. Between 1980 and 1990, the Theil index reached 24.2 points. All of this change is accounted for by the deterioration in the distribution within

[21] See Cowell and Jenkins (1995), Shorrocks (1980), Bourguignon (1979), and Foster and Sen (1997).

countries (the differences between countries were actually reduced). Between 1990 and 1995 total inequality remained constant, but this was the result of two opposing forces: an increase in inequality within countries, which was totally canceled out by a reduction in the differences between countries. These findings are not in line with the idea put forward as a "new stylized fact" of development by Li, et.al. (1996), Deininger and Squire, and Fields (1992), that inequality within countries is relatively unimportant as compared to with between-country discrepancies. The evidence we provide suggests that within the LAC region this is not the case.[22]

It is interesting to note that Deininger and Squire arrive at the conclusion that average inequality in LAC countries does not change significantly through time, but in this case the inference was made by looking at the average Gini for each decade, and for a non-stable sample of countries in the region (see Deininger and Squire, table 3). As the information in Table A2 corroborates, the average for the 1970s and 1980s is similar because such averages result from adding low and high Gini coefficients of similar magnitude in each case. Specifically, inequality follows a "U" shape trend because the Gini falls from high to low levels in the first decade, while rising from low to high values in the second. When the observations are summarized in a decadal average, the "U" shape is hidden by the aggregation method. Therefore, averaging over decades when there are large short-run fluctuations may lead to different impressions about the changes that are taking place.

To obtain a clearer idea about the magnitude of the changes, in Table 1 we present the distribution of income by deciles in LAC, derived from the LAC Lorenz Curve[23]. It can be seen in the upper section of the Table that there are very large differences among the income shares of different groups. Apparently the 1970s

[22] Schultz (1997) arrived at the same conclusion. This author compared the differences between and within countries by region, and found that LAC registers the lowest between-country inequality. The results can be compared to those obtained by Korzeniewicz and Moran (1997), and Theil (1979), who show that in the world aggregate - that is, for all the countries for which they have information - the between-country component of inequality is quite large (around 70%).

[23] Table A2 presents the average quintile shares as reference.

were characterized by an expansion of the incomes of the poor and the middle classes at the expense of the richest 20% of the population. The 1980s show the opposite: the income share of the poorest 90% decreased considerably (see specially the drop in the poorest decile), while the income share of the richest 10% expanded by 10.6%. The 1990s show still a different picture, with the poorest and the richest deciles losing part of their share, and the middle classes expanding it.[24]

Another way of looking at these changes is to use a set of inequality measures that apply different weight to different sections of the distribution. One such set of indices is the Generalized Entropy Family of Inequality measures (E) explained by Cowell and Jenkins (1995) and Foster and Sen (1997), which have the following form:

$$E = 1 - [\frac{1}{n_x}\Sigma^{i=1}(\frac{x_i}{\mu_x})^a]^{(1/a)}$$

where a is a parameter that can be assigned any real value. Specifying a high positive value yields an index that is more sensitive to redistributions at the upper tail of the distribution, while a negative value yields indices attaching larger weights to changes at the lower tail.

The lower section of Table 1 presents the value of E for several values of the parameter. According to our results, income distribution improved during the 1970s irrespective of the particular value attached to a. The result is corroborated by the Gini and quintile share indices. If the parameter is given a higher value, the improvement in income distribution appears to be larger. Similarly, the proportional change in the quintile shares is greater than the shift registered in the Gini. This means that most of the changes during these years were taking place at the tails of the distribution, and more specifically, that they were caused by a reduction in the income share of the richest sectors of the population. The results for the 1980s

[24] It should be noted that the 1970 distribution Lorenz dominates the 1980 distribution, and the 1990 distribution dominates the 1980 distribution, but the 1990 and 1995 Lorenz Curves intersect.

Table 1. Income Distribution in LAC

	Year				(%) Change		
	1970	1980	1990	1995	1970-80	1980-90	1990-95
Decile Distribution							
I	1.0	1.1	0.9	0.8	10.1	-15.2	-14.6
II	1.7	1.9	1.8	1.7	9.3	-5.5	-3.6
III	2.5	2.8	2.6	2.6	11.8	-6.3	2.1
IV	3.5	3.8	3.5	3.5	9.0	-7.3	0.2
V	4.5	4.9	4.7	4.8	8.4	-4.2	2.0
VI	5.9	6.2	5.9	6.2	5.4	-4.8	3.9
VII	7.7	8.5	7.7	8.0	10.3	-9.3	3.2
VIII	10.9	11.6	10.6	11.1	6.5	-8.8	4.9
IX	17.0	16.9	15.4	15.9	-0.9	-8.5	3.1
X	45.2	42.3	46.8	45.4	-6.4	10.6	-3.0
Gini Index	58.0	55.0	58.3	57.7	-5.2	6.0	-1.0
Quintile Shares	22.9	19.8	22.9	24.4	-13.5	15.7	6.6
General Entropy Index							
a=-1	1.29	1.11	1.21	1.26	-14.0	8.9	4.3
a=-.5	0.77	0.69	0.76	0.80	-10.0	10.0	5.1
a=0	0.62	0.56	0.63	0.63	-10.2	13.1	0.6
a=.5	0.60	0.53	0.62	0.61	-12.1	17.9	-1.7
a=1	0.68	0.56	0.73	0.70	-16.5	28.7	-3.3
a=2	1.63	0.99	1.94	1.79	-39.3	96.7	-7.6

Source: Authors' calculations.

confirm that there was a sharp deterioration in income distribution because the share of the richest decile increased disproportionately. By looking at the change in the quintile shares and the Entropy measures we conclude that most of the shifts take place at the tails of the distribution by a combination of a reduction in the income share of the poor and a rise in the share of the rich.

With regard to the 1990s, we find that if we attach a larger weight to the very poor, inequality appears to increase, while if we value more the transfers at the top of the distribution (particularly the top middle classes), inequality declines. This is determined by the fact that the Lorenz Curves for 1990 and 1995 intersect and therefore no unambiguous conclusion about the change in inequality can be obtained. This is interesting because as previously stated, we expected the recovery process to be accompanied by reductions in inequality, and it is specially surprising to observe that if the quintile shares are used as a measure of inequality, we will conclude that the distribution deteriorated by 6.6%. Therefore, in the past few years there were some gains for the middle deciles, but the distance between the two extremes of the distribution was expanding.

Moreover, the LAC region has huge income disparities, but the differences are much higher than what one expects given the level of development of the region. To assess the magnitude of the "excess" inequality, we estimated a regression by using the original DS data set for the whole world, where the dependant variable is the Gini coefficient and the explanatory variable is the level of PPP adjusted GDP per capita (taken from the *World Penn Tables 1995*).[25] We applied the observed PPP adjusted GDP per capita to the coefficient and constant of the regression to produce an estimate of the amount of inequality that would be expected, given the level of development. According to our results (see Table A2) the excess inequality fluctuates between 11.4 and 14.7 points of the Gini, and in 1995 LAC registered a Gini coefficient that is 25% higher than what one would expect given its GDP per capita.

IV. Changes in Poverty in LAC

This section focuses on the changes taking place at the lower tail of the LAC income distribution during 1970-1995. As in the previous section, we first discuss some methodological issues and then engage in a description of the trends.

[25] The estimates were obtained by using random effects to account for the fact that the observations are not independent but grouped by country and year. Thus, the residuals are robust.

A. Methodological Problems in the Measurement of Poverty

Fortunately, in the case of poverty measurement there are no aggregation problems, because the number of poor for a region can be obtained simply by adding up the number of individuals below a poverty line in each country, without having to make decisions on how they are summed up. Perhaps this is the reason why in contrast to the literature on inequality measurement, there are some works estimating the magnitude of poverty in LAC, although most of them concentrate on the 1980s.[26]

Rather than compiling poverty estimates from other works, we will use a common methodology to measure poverty in each of the countries for which "good quality" data are available. This guarantees that there is some level of comparability across estimates.

There are at least four decisions we must take before engaging in the computation of a LAC index. First, it is necessary to choose a poverty line; second, we need to deal with the problems of differences in under-reporting and choose a welfare indicator; third, an adult equivalence scale has to be selected; and fourth, we need to choose an estimation method that allows us to measure poverty when only data aggregated by quintiles are available.

Regarding the definition of a poverty line, the topic has been addressed in a large number of works and we will not engage in a detailed discussion here.[27] For the purposes of this work, we will follow most of the literature and use two definitions of poverty line: a 1985 PPP adjusted "dollar-a-day" line to measure extreme poverty, and $2 1985 PPP adjusted dollars per head per day for moderate poverty. This methodology has the advantage of allowing for cross-country

[26] It should be noted however, that for the case of the poverty gap and the common FGT (2) index (which are discussed later), the same aggregation problems as in the case of inequality measures, arise.

[27] See Ravallion (1994) and Lipton and Ravallion (1995) for recent discussions of the general issues, and Mejía and Vos (1997) for the problem of defining a common poverty line for Latin America.

comparisons, but it should be borne in mind that its application may leave out some of the poor that according to country characteristics should be classified as such. It should also be noted that LAC country-specific poverty lines systematically yield greater poverty estimates than those obtained with this method.[28]

As we mentioned in the first section, one of the main problems with information gathered from household surveys is that there are sometimes differences between the incomes and expenditures reported in a household survey, and their counterpart in the National Accounts. Normally, the differences are attributed to under-reporting in the surveys, but unfortunately there is no way to satisfactorily correct for this problem. The two main alternatives used among studies for LAC have been to assume either that under-reporting is a function of the type of income that individuals receive (see Altimir (1987) and CEPAL (1994, 1995, 1996)), or that under-reporting is evenly distributed among the population (as in Psacharopoulos, et.al. (1993)). Given the restrictions imposed by our data, we use the latter.

The problem of under reporting is closely linked to the selection of a welfare indicator because the "correction" applied to household survey data usually takes either the income or consumption from National Accounts as reference. There are several well-known arguments suggesting that poverty should be measured by using consumption rather than income. For instance, consumption provides a better idea about the access to a bundle of goods because it can be smoothed by savings, or more importantly, using consumption is more adequate because utility is normally regarded as the benefit from the consumption of goods. For the purposes of this work we compute poverty estimates by using PPP adjusted private consumption per capita as a reference.[29]

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[28] See Londoño and Székely (1997).

[29] To construct this variable we used the same deflators and adjustment factors used in the *World Penn Tables 1995*. It should be borne in mind that in almost all cases the distribution that we use for computing the poverty estimates, are based on the distribution of income. The argument for using private consumption per capita from the National Accounts is that this is a comparable and credible measure of the resources available to households.

This is an important choice because very different and even opposite conclusions about the direction and magnitude of a change in poverty can be obtained if, for instance, we use GDP from the National Accounts (this has been the alternative followed by Psacharopoulos, et.al. (1993) and Mejía and Vos (1997) for a set of LAC countries). The differences might be even larger when examining changes in poverty during periods of macroeconomic instability, as is our case here, because if a currency devalues, GDP may rise due to an increase in exports, while consumption levels could fall due to the reduction in real wages that result from the shock.

Since poverty has to be measured on an individual basis, it is also necessary to determine the share of household income that each person inhabiting the unit receives. Due to the lack of more detailed data we will simply assume that income is divided in equal proportions among household members. As argued by Lanjow and Ravallion (1996) there may be some economies of scale in consumption, so the assumption may overestimate poverty among the largest households, which are usually the poorest.

Finally, with regard to the procedure to compute poverty indexes, Datt and Ravallion (1992) suggested some formulae that allow us to compute several poverty measures when only aggregate data are available. The formulae requires only the parameters of the Lorenz Curve, the average income or consumption of the population, and the poverty line, and provides very accurate estimators which do not differ substantially from those obtained from micro data.[30] In Section I we already explained the procedure for obtaining the yearly distribution of income by quintiles for the countries in our sample. By inserting the parameters of each distribution (obtained through the procedure in Villaseñor and Arnold (1989)), the poverty lines, and the PPP adjusted private consumption per capita derived from National Accounts, we obtained an estimate of poverty for each of the 13 countries and for each of the years within the 1970-1995 period. It must be stressed that contrary to the case of the inequality estimates, our poverty results for each

[30] We were able to confirm this for a large number of cases for which we had both, the original household survey, and the quintile shares.

year and country do capture changes in the economic cycle because they are calculated by using yearly consumption figures.

B. The Poverty Trends

The results for poverty in LAC for the past 26 years are found in Figure 1, which plots the head count ratio during these years, as well as in Table 2, where we summarize the results for several poverty measures.

Figure 1 shows that moderate poverty rates fell quite dramatically during the 1970s - from 43.6% to 27.5% - since these were years of both high growth and improvements in income distribution. On the other hand, poverty rose sharply during the second half of the 1980s - reaching a peak of 35.2% by 1990-, which confirms the findings of several studies. Surprisingly, the proportion of moderately poor individuals did not decline during the 1990s recovery; rather, the head count ratio remained at around 33%. The trend followed by the extreme poverty index is very similar.

With respect to absolute numbers (see Table 2), our result show that by 1970 51.4 and 117.1 million individuals were classified respectively as extreme and moderately poor. The figure declined during the decade, and by the 1980s, the amount had been reduced by 33% and 20%, respectively.[31] Table 2 also presents the value of the poverty gap and the FGT (2) index.[32] The poverty gap declines by around 60% and 40%. This means that not only were there fewer extreme and moderately poor individuals during the first decade under study, but that those who remained poor were on average less poor than before. According to our estimates, the value of the FGT (2) index also reduced significantly during these

[31] To obtain the absolute number of poor in LAC we assumed that the 83% of the population covered by our sample of 13 countries represents the whole population in the region.

[32] The poverty gap is the average shortfall of the income of the poor with respect to the poverty line, multiplied by the head count ratio. The FGT(2) index corresponds to the index suggested by Foster, et.al. (1984), when the parameter is equal to 2 (it is equivalent to the squared poverty gap). In this last measure, the lowest incomes are given more weight in the measurement.

Table 2. Poverty Measures for LAC, 1970-1995

Year	Moderate Poverty				Extreme Poverty				Excess Poverty in LAC*
	Head Count Ratio	Poverty Gap	FGT(2) Index	Million of Poor	Head Count Ratio	Poverty Gap	FGT(2) Index	Million of Poor	
1970	43.6	18.7	11.2	117.1	19.2	6.5	4.0	51.4	39.0
1971	41.0	18.2	10.9	112.9	18.2	5.3	3.8	50.1	42.0
1972	38.9	16.9	10.1	109.8	16.2	4.7	3.5	45.6	45.4
1973	37.0	15.8	9.4	107.1	15.5	4.1	3.1	44.8	47.4
1974	34.7	14.7	8.6	103.0	14.2	3.6	3.0	42.1	50.6
1975	36.2	15.5	9.3	110.1	14.8	4.5	3.4	44.9	50.4
1976	34.1	14.3	8.6	106.0	13.4	3.8	3.1	41.8	54.1
1977	32.7	13.6	8.2	104.0	12.6	3.6	3.0	40.2	55.7
1978	32.1	13.8	8.6	104.7	12.5	3.6	3.1	40.7	57.3
1979	30.1	12.6	7.6	100.3	11.4	3.3	2.8	38.2	60.4
1980	27.5	11.1	6.9	93.8	10.5	2.6	2.6	36.0	61.5
1981	26.6	10.7	5.9	92.8	10.2	3.0	2.9	35.7	56.4
1982	23.7	10.2	6.0	84.5	11.2	3.8	2.4	39.9	45.3
1983	28.6	12.4	7.0	104.4	12.8	4.2	2.1	46.8	47.8
1984	29.0	12.2	6.7	108.1	12.2	3.7	1.9	45.5	49.8
1985	28.3	11.3	5.8	107.8	11.4	2.9	1.3	43.3	52.7
1986	25.9	10.0	4.9	100.7	12.0	2.3	1.0	46.8	50.9
1987	29.0	12.2	6.7	115.2	12.6	3.7	2.3	50.0	48.3
1988	32.8	14.2	7.8	132.6	15.3	4.5	2.1	61.9	48.1
1989	34.8	15.6	8.8	143.5	17.0	5.4	2.8	70.2	50.5
1990	35.2	16.4	9.7	147.9	17.4	6.3	3.6	73.1	48.2
1991	33.3	15.5	9.3	142.7	16.1	6.1	3.7	69.2	49.4
1992	33.1	15.5	9.4	144.5	16.0	6.3	4.2	69.7	48.3
1993	34.1	16.0	9.7	151.7	16.6	6.5	3.9	73.9	49.4
1994	33.3	15.7	9.7	150.9	16.4	6.6	4.2	74.4	51.3
1995	33.1	15.4	9.2	152.5	16.2	6.1	3.7	74.5	50.3

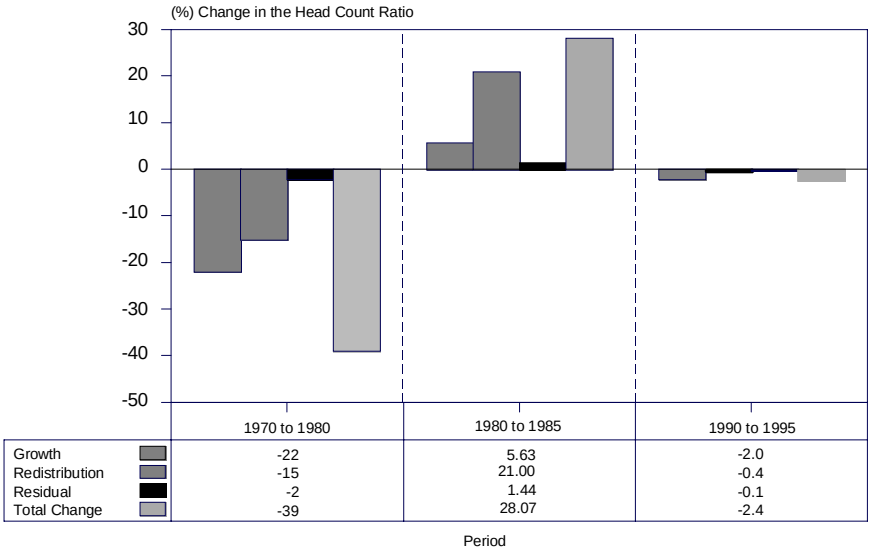
Source: Authors' calculations.

*Proportion of the actually observed poverty presented in the first column of the table.

years. The decline in this case was of around 33% and 39%, respectively. This means that there was a general and relatively well-distributed improvement in welfare among the poor.

The estimates presented in Table 2 indicate that during the 1980s the number of individuals below the extreme and moderate poverty lines increased from 36 and 93.8 million, to 73.1 and 147.9 million, respectively. This represented a rise of around 54 million poor individuals. According to our calculations, the number of extremely poor doubled during the course of this decade, while the moderately poor increased by 60%. With regard to the poverty gap and the FGT(2) index, we found that the poverty measured by each of these two indicators increased by much more than the proportion of poor, in percentage terms.[33] Thus, there is evidence that the welfare losses were concentrated amongst the poorest of the poor.

Figure 2. Decomposition of the Change in Poverty into Growth and Redistribution Effects for LAC, 1970-1995



Source: Own calculations from the LAC Integrated data set

[33] The value of the poverty gap and FGT(2) indices increased by 47% and 42%, as compared to the 28% rise in the head count.

During the 1990s, LAC did not make substantial progress in reducing poverty in spite of recovering positive growth rates. According to our estimates, the number of extreme and moderately poor has even increased by 1.5 and 5 million individuals respectively, during the first half of the decade. It can be seen in Table 2 that the poverty gap and the FGT(2) index at the higher poverty line declined slightly, indicating that there was some improvement in the conditions of the poor. However, the FGT(2) index for extreme poverty continued to increase during this period. This leads us to think that the poorest of the poor have not benefited from the recovery process, and that contrary to expectation their condition may have even worsened.

In order to assess the impact on poverty of the changes in private consumption and the changes in inequality, we followed the procedure suggested by Datt and Ravallion (1992) to decompose changes in poverty into growth and distribution effects. Figure 2 presents the results of the decomposition, which was obtained by computing each component for every country and for every year, and adding them up to obtain the LAC estimate.

As expected, the figure shows large differences over time. Poverty during the 1970s declined due to the high growth rates (which would have reduced poverty by around 22% on their own) and due to the progress in income distribution. The 1980s are quite different, and it is interesting to see that most of the raise in poverty is attributed to changes in inequality, and not only to the economic stagnation observed during these years, as is normally thought.

Perhaps the most striking result is that during the 1990s poverty has not declined due to the low impact of growth on poverty reduction, and to the lack of distributive progress. This last result seems surprising because the GDP per capita in the region increased by almost 6% in real terms between 1990 and 1995. The explanation for these phenomena is that we are using private consumption per capita for computing the poverty indexes, rather than GDP per capita, and the latter grew by less than 4% during the course of these years. Our estimates therefore reveal that consumption has been less responsive than income during the 1990s. Perhaps the reason is that growth in LAC has been more concentrated in export-oriented sectors, which may have a larger impact on GDP estimates than on private consumption.

V. The Relation between Poverty and Inequality

In a recent work, Ravallion (1997) addressed the question of whether the poor face the same prospects of escaping poverty in developing countries with high inequality as in those with low inequality, and arrived to a conclusion that helps us to interpret our results. The author found evidence suggesting the rate of poverty reduction to be systematically lower in high-inequality countries because the growth elasticity of poverty reduces as the distribution worsens. Intuitively, the argument is that even if growth occurs in the context of a constant distribution - i.e. all individuals raise their income by the same proportion -, as seemed to be the case in the 1990s, the poor will receive less in absolute terms. In the extreme case of a country where all income is concentrated in the hands of one individual, neutral economic growth would have no effect whatsoever. However, if income is distributed evenly among the population, the rate of poverty reduction will be maximized by growth.

To explore the relevance of the latter argument for LAC, we estimate the elasticity of poverty to growth by using the formulae derived by Kakwani (1993b). According to our results, by 1982 -when the Gini index reached its lowest level-, the elasticity was 1.9%, meaning that a 1% increase in per capita consumption would yield almost a 2% reduction in poverty as measured by the FGT(2) index. During the 1990s the elasticity was reduced to 1.3, indicating that poverty was less responsive to growth. When we look more closely at the variables, we notice that private consumption per capita was very similar at the beginning of the 1980s and during the first five years of the 1990s. Therefore, the sensitivity of poverty is lower because resources are now more concentrated.

So, it seems that inequality levels in LAC are so high that poverty will not decline substantially as a natural outcome of growth, even in periods of economic recovery. In an attempt to assess the effect of inequality on the possibility of alleviating poverty in the future, we follow a procedure similar to the method we used in Section I for estimating the “excess” inequality in the region. In this case we use the original Deininger-Squire data set for all the countries in the world for

which information is available, and performed five regressions where the dependent variable was each of the quintile shares, and the independent variable was GDP per capita. By using the coefficients (which were estimated with random effects), we determine the expected quintile shares given the PPP adjusted GDP per capita of the region. With this information we obtained the expected Lorenz Curve and recompute the poverty estimates using the actually observed private consumption per capita. The results are reported in the last column of Table 2.

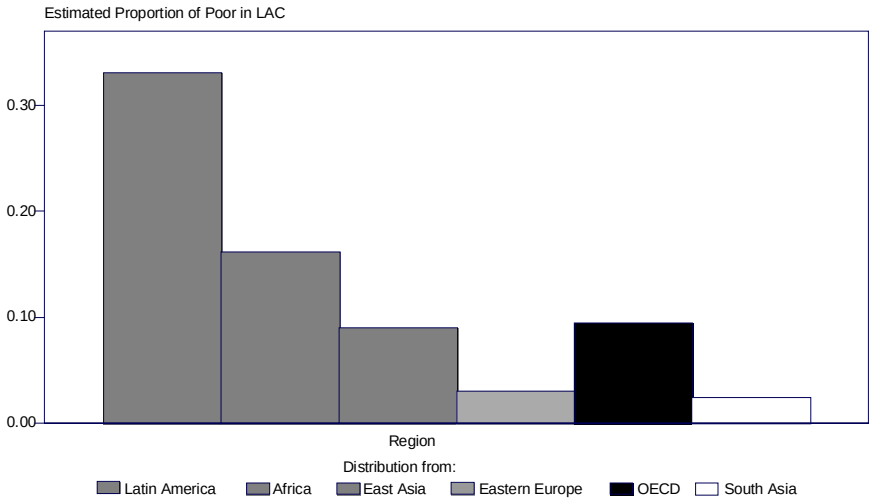
According to our estimates, LAC registered an "excess" of poverty of around 50% during the 1990s. In other words, if income distribution corresponded to what one would expect given the level of development of the region, the number of poor would be half the number actually observed. The "excess" poverty is now higher than during the first years of the 1970s, and this implies that LAC has not made substantial progress in poverty reduction, not only because of the lack of economic growth in the 1980s, but also due to its incapacity to improve its income distribution throughout the past 16 years.

By looking at the previous result, it seems quite obvious that poverty in LAC is to a large extent a distributive problem. This is an interesting finding because it implies the policy instruments to reduce poverty must be different from those used in other regions where poverty is more associated with insufficiency of resources (this is probably the case in Africa and South Asia). In fact, if instead of having the income distribution actually observed during the 1990s, LAC had the inequality of any other region in the world, poverty would be much lower. Figure 3 presents a simulation where poverty in LAC is computed first by using its own distribution, and then by substituting it for the average quintile shares for the 1990s from Africa, East Asia, Eastern Europe, OECD countries, and South Asia.[34]

According to Figure 3, the proportion of poor individuals would reduce dramatically if income was distributed in a more egalitarian way. For instance, if LAC had the distribution observed in Eastern Europe or South Asia, poverty would be practically eliminated (only around 3% of the population would be below the

[34] The regional average quintile shares were calculated from the DS data set.

Figure 3. Moderate Poverty Estimated by Using LAC PPP Adjusted per Capita Consumption and Income Distribution of other Regions



Source Authors calculations from the LA integrated data set and Deininger-Squire Data Set. Poverty line=2$ a day.

moderate poverty line).[35] In a recent work, Chen and Ravallion (1997) estimated poverty in the Middle East and North Africa in 1993 at 4.1%, while it was found to be at 3.5% in Eastern Europe and Central Asia. Thus, if LAC had a distribution of income similar to the one observed in those regions, it would have the lowest poverty rates in the developing world. Similarly, if any other region in the world had the LAC distribution, the proportion of the population below the poverty line would increase dramatically.

VI. Comparisons between Countries

Although aggregate trends provide a good idea about the evolution of poverty and inequality in the region as a whole, they inevitably hide specific country

[35] The purpose of the exercise is to illustrate that inequality is perhaps the most important determinant of poverty in the region. The simulations do not account for the possibility that redistributions can have implications for economic growth and are only intended to provide a benchmark for our discussion.

experiences. This section compares the levels and changes in these welfare indicators across the 13 countries in our sample. Recalling our discussion in Section I, some advantages of this work with respect to related studies are that we present the first comparative study for LAC for the 1990s, and that we use the most complete data base available for the region. A detailed description of the data and of the levels and changes in poverty and inequality by country, is presented in Londoño and Székely (1997), where we also compare our estimates with those obtained by other authors.

A. A Look at the Differences in Levels

To look at the differences in poverty and inequality by country, we rank each of the LAC countries in our sample according to three variables: PPP adjusted private consumption per capita, the Gini index, and the proportion of poor individuals in the 1990s. Table 3 presents the results. In the third column we rank the countries by their poverty rate. The relation between this and the previous two columns is that poverty in any population depends on the amount of resources available in the economy, and on the way in which such resources are distributed. If poverty depended solely on the insufficiency of resource in an economy, the rankings in the first and third columns would be identical, but since this is not the case, we observe several reversals.

For instance, we find that the country where the ranking differs the most, is Brazil. This country is ranked relatively highly with respect to consumption levels, but it presents large poverty rates. The connection between these two results is column 2, where Brazil has the highest inequality (a similar situation arises in Mexico). In contrast, Peru and Jamaica are ranked better in terms of poverty than in terms of consumption, in which case, the explanation is the relatively low inequality.[36]

[36] It should be borne in mind, however, that the data for Jamaica comes from a consumption survey, rather than an income survey as is the case for the rest of the countries. Since consumption is better distributed than income, we would be underestimating poverty in Jamaica, with respect to the other countries due to the characteristics of the data.

Table 3. Country Ranking in the 1990s According to Different Welfare Indicators

Private consumption perc.		Gini index		Proportion of poor	
1 Honduras	892	1 Brazil	61.4	1 Honduras	65.6
2 Panama	1,341	2 Guatemala	59.9	2 Panama	48.4
3 Peru	1,419	3 Panama	57.4	3 Brazil	43.5
4 Jamaica	1,453	4 Honduras	56.9	4 Guatemala	42.5
5 Dominican R	1,759	5 Chile	56.5	5 Dominican R.	39.5
6 Guatemala	1,759	6 Mexico	54.2	6 Peru	35.0
7 Brazil	1,769	7 Dominican R	51,6	7 Jamaica	25.1
8 Colombia	2,057	8 Colombia	48.2	8 Colombia	23.8
9 Costa Rica	2,088	9 Venezuela	47.1	9 Chile	23.5
10 Chile	2,659	10 Costa Rica	46.5	10 Mexico	22.3
11 Mexico	2,751	11 Bahamas	45.0	11 Costa Rica	22.1
12 Venezuela	3,718	12 Peru	44.9	12 Venezuela	13.4
13 Bahamas	7,427	13 Jamaica	37.9	13 Bahamas	8.9

Source: Authors'calculations.

Another way of looking at the differences in poverty levels, is the geographic distribution of the poor. Table 4 presents these indicators for 1970 and 1995. Brazil, Costa Rica, Guatemala, Honduras, and Venezuela have increased their share of extreme poverty in the region, while Colombia and Mexico reduced their share by more than three percentage points. In the case of moderate poverty, the largest shifts are in Brazil, Honduras, Guatemala, and Peru, which increased their proportion, and in Colombia and Mexico, which reduced their proportions.

If every country had the same poverty rate, the distribution of the poor would equal the distribution of the total population. In order to identify countries contributing more than proportionally to the number of poor in the region, we include the distribution of the whole population in the table. When we compare

Table 4. Distribution of the Poor in LAC by Country (% of the Total Poor Population)

Country	Distribution of Total Population		Distribution of Extremely Poor		Distribution of Moderately Poor	
	1970	1995	1970	1995	1970	1995
Bahamas	0.06	0.06	0.02	0.03	0.02	0.02
Brazil	35.72	35.42	44.39	49.81	40.43	46.05
Chile	3.54	3.13	1.21	0.60	1.92	2.00
Colombia	7.96	7.68	7.47	3.21	9.76	5.03
Costa Rica	0.64	0.72	0.11	0.34	0.38	0.50
Dominican R.	1.65	1.70	1.70	1.24	1.88	1.90
Guatemala	1.96	2.19	1.02	3.31	1.16	2.96
Honduras	0.97	1.16	2.46	2.97	1.56	2.44
Jamaica	0.70	0.58	0.53	0.13	0.58	0.43
Mexico	18.04	19.31	15.10	12.87	16.75	13.21
Panama	0.56	0.57	0.93	0.91	0.68	0.80
Peru	4.92	5.12	3.58	3.23	3.37	5.13
Venezuela	3.95	4.59	2.14	2.24	2.17	1.88
Others	19.34	17.77	19.34	19.12	19.34	17.65

Source: Authors' calculations.

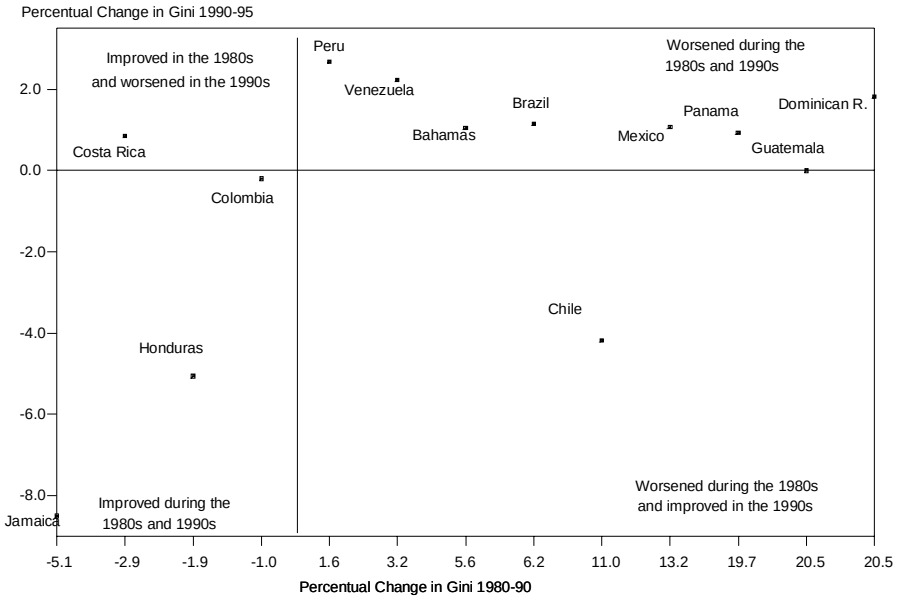
the distribution of the poor versus the proportion of population, we find, not surprisingly, that Honduras, Panama, and Brazil contribute more than proportionally to moderate and extreme poverty. The relative contribution to extreme poverty is especially high in Honduras. We find that even though Costa Rica is *not* one of the countries with high consumption levels, its contribution is very small when compared to the size of its population. The proportion in the remaining countries corresponds roughly to what we predict.

B. A Look at the Changes

Given the differences in the levels of poverty and inequality across countries, we expect that the countries in our sample will present considerable disparities regarding the changes in poverty and inequality through time. Figure 4 plots the proportional change in the Gini coefficient from 1980-1990 and 1990-1995, and shows that surprisingly 8 out of the 13 countries analyzed follow a similar trend.

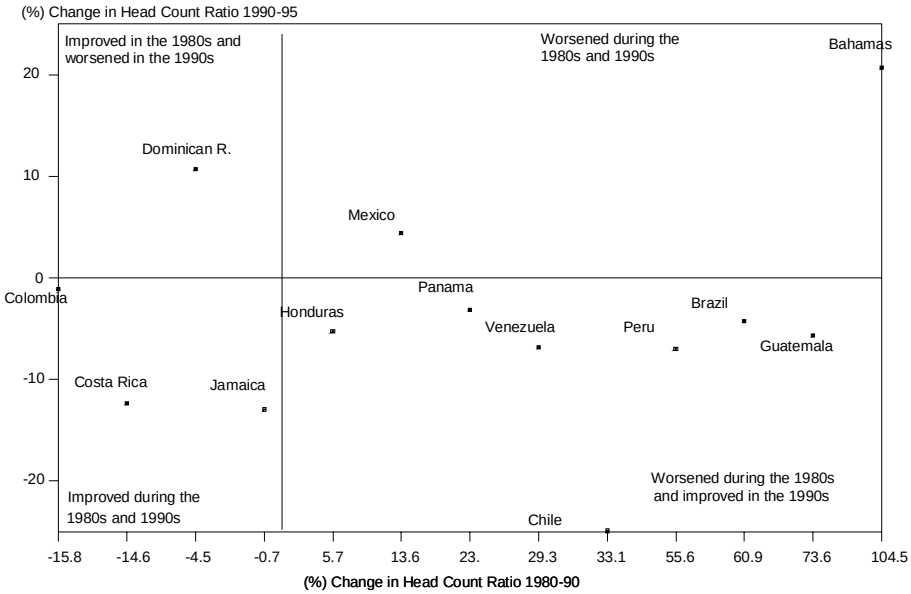
For instance, Jamaica, Honduras and Colombia are the only countries where income distribution improved during the 1980s and 1990s. Costa Rica is the only country to have improved in the 1980s and worsened in the 1990s. With the exception of Chile, the rest of the countries followed the pattern we observe in Figure 1. One interesting feature is that the only country where the changes

Figure 4. Change in Inequality by Country in LAC during 1980-1990 and 1990-1995



Source: Author's Calculations

Figure 5. Change in Poverty by Country in LAC during 1980-1990 and 1990-1995



Source: Author's calculations

correspond to what one expects from the macroeconomic scenario is Chile, where inequality rose in the 1980s crisis years, and recovered in the 1990s.[37]

We observe a similar situation with regard to the changes in poverty. Figure 5 plots the proportional change in the head count ratio for the 1980s and the 1990s. Most of the countries registered sharp increases in poverty during the past decade, and have shown some improvement during the 1990s. However, the reductions in poverty during the 1990s are much smaller than expected.

According to the results, poverty only reduced in the 1980s and 1990s in Costa

[37] But even this conclusion is not very robust (see Londoño and Székely (1997)). The reason is Chile has two types of household surveys: the one we have used to derive our estimates, and the CASEN. Ferreira and Lietchfield (1997) show that if the CASEN is used to compute the inequality index, the distribution of income in Chile appears to be very stable during the 1990s.

Rica and Jamaica, and only worsened in the same periods in Mexico and The Bahamas. The Dominican Republic and Colombia appear to be the only cases where the head count declined in the 1980s and increased in the 1990s.

The most interesting feature of the previous two figures is that although there are some differences between countries, the similarities appear remarkable, and the countries that do not conform to the trends shown in Figure 1 seem to be the exception rather than the rule. Therefore, it does make sense to discuss the aggregate trends in poverty and inequality in LAC because the aggregate picture provides a good description of the changes in welfare experienced by 83% of the population of the region.

In order to examine the changes in poverty more closely, we decomposed the change in the absolute number of poor individuals in the region, by country and decade. Table 5 presents the results. According to our estimates, moderate and extreme poverty was reduced by 23.3 and 15.46 million individuals, respectively, in the 1970s. These reductions are mainly attributable to the decline in the number of poor in Brazil, Colombia, and Mexico. The picture for the 1980s is quite different because there were 54.11 million additional individuals in poverty, 34.75 of which were located in Brazil, and most of the remaining additional poor were in Chile, Guatemala, Peru, the Dominican Republic, and Venezuela. In the 1990s, there was a rise in the number of moderate and extremely poor individuals. Of the additional 4.56 million moderately poor, four million were in Mexico, and are attributed to the decline in private consumption per capita between 1994 and 1995.

Even though almost all the additional poor individuals in the 1990s were concentrated in a single country, none of the countries in our sample registered a significant reduction in the number of poor. Therefore, our conclusion about the lack of considerable poverty reduction during the 1990s recovery years seems to be well founded.

Table 5. Change in Absolute Poverty in LAC by Country (Millions)

Country	Moderate Poverty			Extreme Poverty		
	1970-1980	1980-1990	1990-1995	1970-1980	1980-1990	1990-1995
Latin America	-23.30	54.11	4.56	-15.46	37.14	1.14
Bahamas	-0.01	0.01	0.01	-0.01	0.01	0.01
Brazil	-13.12	34.75	1.24	-10.10	23.75	0.51
Chile	0.38	1.47	-1.04	0.23	0.21	-0.62
Colombia	-4.21	0.67	-0.21	-1.51	0.57	-0.52
Costa Rica	0.19	0.11	0.01	0.23	-0.00	-0.03
Dominican R.	-0.51	1.34	-0.14	-0.61	0.86	-0.20
Guatemala	0.43	2.38	0.33	0.17	1.57	0.20
Honduras	0.52	0.97	0.40	0.21	0.49	0.24
Jamaica	0.10	-0.12	-0.01	0.01	-0.15	-0.03
Mexico	-2.23	-1.25	4.00	-0.12	1.49	0.42
Panama	-0.00	0.49	-0.07	-0.16	0.41	-0.06
Peru	1.41	3.18	-0.70	-0.33	0.86	0.02
Venezuela	-0.88	1.10	0.10	-0.14	0.72	-0.01
Other	-5.37	9.00	0.63	-3.32	6.36	1.21

Source: Authors' calculations.

VII. Conclusions

The objective of this work has been to document the changes in aggregate poverty and inequality in LAC during the past 26 years. Our contributions to this field of study are that we compile the largest number of observations on income distribution for the 1970-1995 period, and that rather than only looking at specific country experiences, we focus on aggregate trends. The expanded database we use includes observations for 13 countries, and covers 83% of the LAC population.

With regard to inequality, we produce some evidence that confirms that this is the region of the world where income is more unequally distributed. According to our estimates, aggregate inequality reduced significantly during the 1970s,

deteriorated sharply during the 1980s, and has remained around the level registered in 1990 during the present decade. The reason why there has not been significant improvement during the present decade is that the individuals located at the lower tail of the distribution do not seem to have benefited from growth to the same extent as other sectors of the population.

Despite the fact that the 1970s and the first half of the 1990s had a stable macroeconomic environment in common, it is surprising that while income distribution and poverty were reducing sharply in the first decade, the 1990s did not show distributive progress. One of the most striking results is that inequality levels within countries have been changing considerably even during short time periods, and that the differences between countries are relatively unimportant and stable as compared to within-country inequalities. This regional pattern is not in line with the recently established "stylized fact of development" that argues that income distribution within countries is very stable and relatively unimportant, as compared to the differences between countries.

One way of aggregating the information on inequality, is to construct a LAC Lorenz Curve by ranking individuals according to their position within the region rather than within their country of origin. We construct a LAC Lorenz Curve for several years and were able to explore the differences at the two tails of the distribution.

LAC has a very high degree of inequality in absolute terms. After comparing the level actually observed with the inequality we expect given the level of development of the region, we find that there is approximately 25% "excess" inequality, and that such "excess" has been increasing during the past 26 years.

The changes in poverty during recent years are not encouraging either. The 1970s were characterized by large reductions in the number and proportion of poor, while the 1980s showed the opposite trend with poverty rates peaking by 1990 and the number of poor increasing by more than 54 million individuals. During the 1990s, no substantial improvement has been registered, and moreover, the number of poor increased by more than four million.

According to our calculations, the lack of progress in poverty reduction is due to the persistently high inequality levels. We estimate that in the hypothetical case

of having no "excess" inequality, the proportion of poor in LAC would be reduced by half. Similarly, if LAC had a distribution similar to other developing countries, it would be the developing region with the lowest poverty rates.

One advantage of the expanded data set we use is that it allows for various comparisons between countries. We find that inequality and poverty in most of the countries considered followed similar trends in the 1980s and 1990s, than the aggregate indicators. One exception is Mexico, where poverty rates did increase substantially in the 1990s (four million additional individuals have become poor during 1990-1995).

Our results show that the distributive problem in LAC is crucial for poverty reduction. Achieving macro economic stability is one of the necessary ingredients for generalized improvements in welfare, yet if the structure of the economies remains unchanged, it will be increasingly difficult to translate economic growth into welfare improvements for the whole population.

Appendix A.

Table A1. Data Sources

Country	Source	Years	# Surveys
Bahamas	Deininger-Squire (1996)	1970,1973,1975,1979, 1986 1988, 1989, 1991, 1992, 1993	10
Brazil	Deininger-Squire (1996)	1970, 1972, 1976, 1979, 1980, 1981	
	Deininger-Squire (1996)	1982, 1983, 1985, 1986, 1987, 1989	
	PNAD	1990, 1992, 1993, 1995	16
Chile	Deininger-Squire (1996)	1971, 1980, 1989, 1994	
	Encuesta Nacional de Empleo	1990, 1991, 1992, 1993	8
Colombia	Deininger-Squire (1996)	1970, 1971, 1972, 1974, 1978 1988, 1991	
	Londoño (1996)	1993	8
Costa Rica	Deininger-Squire (1996)	1970, 1971, 1977, 1979, 1981 1982, 1983, 1986, 1989	
	Encuesta de Hogares de Propósitos Múltiples	1990, 1991, 1992, 1993, 1994, 1995	15
Dominican Republic	Deininger-Squire (1996)	1984, 1989	
	Encuesta de Ingreso-Consumo	1986	
	Encuesta de Ingresos y Gastos	1992	4
Guatemala	Deininger-Squire (1996)	1979, 1987, 1989	3
Honduras	Deininger-Squire (1996)	1992	
	Encuesta Permanente de Hogares	1989, 1990, 1994, 1995	5

Table A1. (Continue) Data Sources

Country	Source	Years	# Surveys
Jamaica	Deininger-Squire (1996)	1975, 1988, 1989, 1990	
		1991, 1992, 1993	7
Mexico	Deininger-Squire (1996)	1977, 1984, 1989	
	Encuesta Nacional de Ingreso		
	y Gasto de los Hogares	1992, 1994	5
Panama	Deininger-Squire (1996)	1970, 1979, 1980, 1989	
	Cepal, Serie de Distribución		
	del Ingreso núm. 16	1986	6
	Encuesta de Hogares	1991	
Peru	Cepal, Serie de Distribución		
	del Ingreso #8, 1989	1970, 1973	
	Estudio de Medición de los		
	Niveles de Vida	1986	
	Deininger-Squire (1996)	1994	4
Venezuela	Deininger-Squire (1996)	1970, 1971, 1976, 1977, 1978,	
		1979, 1981, 1987, 1989, 1990	
	Encuesta de Hogares		
	por Muestreo	1980, 1982, 1983, 1984, 1985, 1986	
		1988, 1991, 1992, 1993, 1994, 1995	22
Total Deininger-Squire			73
Total Other Sources			40
Total			113

Table A2. Indicators of Income Distribution in LAC, 1970-1995

Year	Income Distribution by Quintile in LAC (%) Share of Total Income (Non weighed Average)					Gini Index for LAC			Quintile I to V Ratio			Theil Index			Excess Inequality*
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Estimated from LAC Lorenz C*	Average from 13 Countries	Weighted Avg. 13 Countries	Estimated from LAC Lorenz C*	Average from 13 Countries	Weighted Avg. 13 Countries	Within Countries	Between Countries	Total Inequality	Points of Observed Gini*
1970	3.9	7.6	12.7	20.4	55.3	58.0	51.2	55.2	22.9	17.2	17.9	21.0	2.9	23.8	13.1
1971	3.7	7.6	12.9	20.7	55.0	57.2	50.8	55.0	22.3	17.0	18.5	21.2	2.6	23.8	12.9
1972	3.8	7.6	13.0	20.7	54.9	57.3	50.5	54.8	21.9	16.5	18.6	21.3	2.3	23.5	12.7
1973	3.8	7.6	13.2	20.8	54.6	56.8	50.2	54.5	21.3	16.0	18.6	21.1	2.0	23.0	12.4
1974	3.8	7.6	13.1	20.9	54.6	56.7	50.2	54.1	21.3	15.9	18.6	20.9	1.9	22.7	12.5
1975	3.8	7.6	12.9	20.9	54.8	56.9	50.4	54.1	21.2	16.0	18.8	20.9	2.0	22.9	12.8
1976	3.9	7.6	13.0	21.0	54.6	56.8	50.1	54.1	22.0	15.7	19.0	21.0	2.0	22.9	12.6
1977	3.9	7.8	13.1	20.9	54.3	56.5	49.9	53.9	21.4	15.6	19.0	20.8	1.9	22.8	12.3
1978	4.0	7.9	13.4	20.9	53.8	56.4	49.4	53.7	22.2	15.0	18.7	20.6	2.0	22.6	11.9
1979	4.1	8.2	13.3	21.1	53.3	56.3	48.8	53.5	21.4	14.5	18.5	20.4	2.1	22.5	11.4
1980	4.0	8.1	13.4	21.1	53.4	55.0	49.4	52.5	19.8	14.5	17.1	19.6	2.0	21.7	12.2
1981	4.0	8.1	13.4	21.2	53.3	54.0	49.1	51.4	18.7	14.4	16.0	18.6	2.3	20.9	11.8
1982	4.0	8.2	13.5	21.1	53.3	53.8	49.0	51.0	18.0	14.0	14.1	17.3	2.1	19.4	11.6
1983	4.0	8.1	13.1	20.9	53.9	55.2	49.4	52.9	20.7	14.8	18.6	20.0	1.9	21.9	11.9
1984	3.8	7.9	12.8	20.5	55.0	56.2	50.6	53.9	20.9	16.7	19.0	20.6	1.9	22.5	13.1
1985	3.9	7.9	12.9	20.7	54.6	56.2	50.2	54.0	20.2	15.3	17.2	20.3	2.0	22.3	12.8

Table A2. (Continue) Indicators of Income Distribution in LAC, 1970-1995

Year	Income Distribution by Quintile in LAC (%) Share of Total Income (Non weighed Average)					Gini Index for LAC			Quintile I to V Ratio			Theil Index			Excess Inequality*
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Estimated from LAC Lorenz C*	Average from 13 Countries	Weighted Avg. 13 Countries	Estimated from LAC Lorenz C*	Average from 13 Countries	Weighted Avg. 13 Countries	Within Countries	Between Countries	Total Inequality	Points of Observed Gini*
1986	3.8	8.0	12.9	20.7	54.7	54.3	50.1	52.4	18.0	15.6	16.2	19.1	1.7	20.8	12.7
1987	3.7	8.1	12.9	20.5	54.9	55.2	50.5	53.5	19.0	16.3	18.1	20.2	1.5	21.8	13.2
1988	3.6	8.1	12.7	20.3	55.2	56.6	50.8	54.5	20.8	16.8	19.1	21.2	1.7	22.9	13.5
1989	3.5	7.8	12.5	20.2	56.0	57.5	51.8	55.5	21.9	18.1	20.4	22.2	1.8	24.0	14.4
1990	3.5	7.9	12.7	20.2	55.7	58.3	51.6	55.7	22.9	18.1	21.3	22.1	2.1	24.2	14.2
1991	3.5	8.0	12.9	20.2	55.3	57.6	51.1	55.0	24.0	17.8	21.6	21.9	2.4	24.3	13.7
1992	3.6	8.1	13.2	20.4	54.6	57.3	50.4	54.7	23.5	17.4	21.6	21.5	2.7	24.1	13.1
1993	3.7	7.9	12.9	20.3	55.2	58.2	51.3	55.8	24.5	17.8	22.8	22.2	2.5	24.7	14.0
1994	3.5	7.7	12.8	20.3	55.7	58.3	51.7	56.0	25.1	19.2	23.3	22.6	2.3	24.9	14.4
1995	3.6	7.7	12.9	20.2	55.6	57.7	51.5	55.8	24.4	18.7	22.5	22.4	1.8	24.2	14.3

* Estimated from LAC Lorenz Curve, which ranks each individual according to the position within the region (not within the country or origin)

Source: Calculated from Extended database that includes 13 countries and 83% of the LAC total population

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