Inequality in Latin America: a global measurement

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ABSTRACT

This article combines individual data from household surveys in the Latin American countries to obtain a regional income vector and analyse its distribution and recent changes. It investigates whether distributive changes in the countries over the past decade have improved income distribution between individuals or widened gaps. The region's indicators of global inequality declined significantly during 2003-2012. This drop in global inequality is explained essentially by the reduction of inequality within Latin American countries. The incomes of the inhabitants of Latin America are now more equal in relative terms than a decade ago, although differences in the countries' average incomes have increased.

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I

Introduction

The study of inequality has long been central to research on Latin American countries, especially since they have figured among the world's most unequal for as long as reliable statistics based on microdata have been available (see, for example, Alvaredo and Gasparini, 2015). A number of studies on inequality in Latin America have concentrated on inequalities within countries, and in this way there has grown up a large literature (summarized in section II of this article) studying inequality from different perspectives and seeking to understand its determinants and evolution, focusing on the reversal of the upward trend of income inequality in the region since 2002.

A question that has been raised less often in relation to Latin America, though, is how different the incomes of the region's inhabitants are when the region is considered globally, and how this inequality has evolved over the last decade, during which inequality has diminished in most of the region's countries. This article aims to address that question, since it is relevant to complete the diagnosis of the recent evolution of inequality in Latin America. With this in view, different indicators for the evolution of individual incomes in the region as a whole are presented, with the evolution of inequality in particular being analysed. The article seeks to ascertain whether distributive changes within the region's countries over the past decade have been matched by improvements in income distribution between Latin Americans, or whether gaps have widened. The analysis is based on a combination of data from household surveys in the region, using similar criteria to process the data from the different countries, and specifically to calculate household incomes, so that the resulting vector is consistent between countries.

The article is organized as follows. After this Introduction, section II presents a brief overview of developments in the discussion and measurement of global inequality in the literature. Section III summarizes the evolution of inequality within the different countries of the region in recent years, together with the explanations put forward for this. Section IV presents the data used in the article and describes the methodologies chosen to measure inequality at the regional level. After this, the main findings of this study are set forth: section V discusses average income differences in the region, and section VI shows the evolution of the incomes of Latin Americans and their distribution, comparing information from the early 2000s (specifically 2003, when the inequality trend changed in most of the region's countries) with the most recent information available, which is for 2012. Lastly, section VII offers some final comments.

II

Global inequality

The importance of studying inequality can be argued for on grounds originating in theories of social justice, and also on purely instrumental grounds of economic efficiency. Concern about inequality stemming from considerations of social justice has not gone undebated (Feldstein, 1999; Milanovic, 2007, among others), and one of a number of moot issues is whether the real concern is inequality of opportunity (as suggested by Roemer, 1998) or inequality of outcomes, including income. In a recent publication, Atkinson (2015) gives three reasons for economics to remain concerned about the distribution of outcomes, including income. First, on moral grounds, the situation of the most disadvantaged individuals cannot be ignored, even in the

hypothetical event that equality of opportunities were guaranteed.[1] Furthermore, the structure of final prices or returns is so unequal that it warrants concern about outcomes, while also accounting for the consensus over the need to ensure equality of opportunities. Lastly, inequality of outcomes in the present affects equality of opportunities for future generations. Concerns about limited social mobility and the need to ensure equality of opportunities mean there is a need to reduce inequality of outcomes in the present. If the purely instrumental arguments are considered, the empirical debate and controversy centre on the link between income inequality and economic growth, and more specifically on the potential adverse effects of inequality on growth via a number of channels that include political economy, conflict and capital market flaws, among other things (see, for example, Alesina and Rodrik, 1994; Alesina and Perotti, 1996; Persson and Tabellini, 1994; Barro, 2000).

For the reasons given, it is important to study inequality. The result has been a large literature, usually focusing on developments in one country or comparisons between countries. However, some studies have concentrated on analysing global inequality. According to Milanovic (2005), it is possible to distinguish three different concepts used in the effort to capture inequality at the world level. The first is found in the oldest studies on this issue, which estimated global inequality by considering the level that would prevail if the world were populated by representative individuals from each country, each receiving their country's average income. This is known as the international inequality approach, and basically consists in comparing average incomes in the different countries without weighting them by their respective populations. The second concept also addresses international inequality, but considers differences in country size, yielding an indicator similar to the first one but weighted by each country's population. The third concept deals with what is known as global inequality and restores the individual as the unit of analysis, ignoring national borders. This is the approach applied in this study, which seeks to capture income differences between individuals in the region.

A number of studies have sought to engage with this third concept, which reflects global inequality, by deriving worldwide distribution from per capita gross domestic product (GDP) data and summary measures of inequality within countries (Schultz, 1998) or combining information from household surveys and per capita GDP data (Berry, Bourguignon and Morrison, 1983; Bourguignon and Morrison, 2002; Sala-i-Martin, 2006, among others). Other studies have examined global inequality on the basis of information from household surveys alone, deriving worldwide income distribution from these (Milanovic, 2005).

More recent studies on global inequality in recent decades (Milanovic, 2012; Lakner and Milanovic, 2013; Niño-Zarazúa, Roope and Tarp, 2014; Anand and Segal, 2015) combine information from household surveys and consider quantiles of income distribution (usually ventiles) in each country, imputing the average per capita income to each quantile and constructing a database containing the quantiles of the world's different countries.[2] These studies all agree that the level of global inequality is very high, comparable indeed to that of the world's most unequal countries, and that it presents relatively minor variations over time.

As regards regional inequality, Gasparini and others (2008) report that, when household survey data from the region are combined, global inequality is found to have followed much the same pattern as inequality within countries: an increase in the 1990s and a decline from the early years of the 2000s.[3] Another study dealing with Latin America is Gasparini and Gluzmann (2012), which uses information from the 2006 Gallup World Poll, conducted in 132 countries that year. Although these polls do not capture income as accurately as household surveys, they can be used to analyse global inequality. The authors estimate indicators of inequality by region, finding the Gini coefficient for Latin America to be 0.525 in 2006, a much higher figure than for Western Europe (0.402), North America (0.438) or Eastern Europe and Central Asia (0.497). However, inequality was lower in the Latin America region than in South Asia (0.534), the Caribbean (0.591) or East Asia and Asia and the Pacific (0.594). The authors argue that Latin America is composed of countries with high and similar levels of inequality, but that taken as a whole the region is not the world's most unequal. Although Latin American countries

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[1] In the words of Milanovic (2007), the income of others enters each person's utility function, so that high levels of inequality affect individual welfare, although he acknowledges the possibility that individuals might be motivated by good feelings, like the subjects referred to by Atkinson (2015), or by bad feelings such as envy.

[2] Quantiles are points taken at regular intervals in the distribution function of a random variable. By way of example, when the income distribution is divided into 20 groups, they are called ventiles. Thus, the first ventile contains the poorest 5% of individuals.

[3] These estimates are for 12 countries in the 1990-2006 period.

are highly unequal in relative terms, the dispersion of income between them is smaller than in other regions of the world.

Among the main aspects deemed by Anand and Segal (2008) to justify the study of global inequality are moral factors and also the consequences that can ensue from global inequality. With regard to the former, the disparities between individual incomes at the global level can be considered unfair, and this is a reason for analysing how different individuals' incomes are when considered globally and not in relation to their nationality.[4] On the other hand, evidence on inequality at the world level is interesting for the scope it provides to analyse the predictive power of theories: according to neoclassical growth theory, incomes between countries and indeed between individuals should converge in the long run, while dependency theory predicts divergence.

Studies on global inequality have been motivated essentially by the need to assess the extent to which globalization, while perhaps increasing inequality within

countries, might also have caused it to decline at the global level. This would mean that differences between individuals around the world were growing smaller, and could be the result of poorer (and more populous) countries having grown more quickly than richer (and less populous) ones. These studies also set out to analyse whether the rules governing the interactions between rich and poor countries impact global inequality. The more integration there is between countries, the more factor mobility there is across borders and the more the perceptions and aspirations of a given country's people are influenced by the living conditions of other countries'. All these aspects make inequality an issue of relevance beyond national borders.

In a global inequality analysis covering the countries of Latin America, the focus of interest is not the linkages between the consequences of globalization and inequality, as when the world as a whole is considered, since the bulk of trade and financial flows takes place between the region and the world rather than within the region, and could be affecting all the countries similarly. The main interest lies in understanding the relative situation of individuals in the region and showing the extent to which the recent decline in income inequality in most of the region's countries has been accompanied by convergence or divergence in individual welfare at the regional level.

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[4] Here, Milanovic (2015) argues that, by being born in a particular country, people receive two "public goods": the country's average income and the inequality of its distribution. Over half the variability of global income is explained by circumstances of birth, including average income and income inequality in the country of birth.

III

The recent evolution of inequality in the countries of Latin America

Income inequality indicators in Latin America have shifted substantially in the last 10 years. Since 2002 or 2003 (depending on the country), levels of income inequality have been dropping in most of the region's countries. The changes have been gradual and all but imperceptible from one year to the next, but come out clearly when longer periods are compared. If the 2002-2012 period is taken, Gini coefficients declined, indicating improvements in distribution, in 16 of the 17 countries included in this study (see figure 1). The exception is Costa Rica, whose Gini coefficient was higher in 2012 than in 2002. This recent downward trend

is statistically significant and has taken place in a context of sustained economic growth and poverty reduction in the region. The downward trend in inequality has gathered pace since 2008 (ECLAC, 2013).

The changes revealed by the decline in Gini coefficients have also been reflected in the share of total income going to the top and bottom quintiles.[5] In most of the countries (the exceptions are the Dominican

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[5] The figures cited for the quintile shares refer to quintiles of households ranked by per capita income.

Republic, Paraguay and Honduras), the share of total income going to the poorest quintile increased between 2002 and 2012 (see figure 2). At the other extreme, the share of the richest quintile fell in almost all the countries, the exception being Paraguay (see figure 3). The most recent data available indicate that the poorest quintile (i.e., the lowest-income 20% of households) receives an average of 5% of total income, with the share ranging from 4% in the Dominican Republic, Honduras and Paraguay to 10% in Uruguay, while the share of total income going to the richest quintile averages 47%, ranging from 35% in Uruguay to 55% in Brazil (ECLAC, 2013).

This change in the trend of income inequality has been interpreted in various ways. Labour income, the main source of household income, has driven this decline in inequality. Notwithstanding the positive repercussions of rising employment, falling dependency ratios and redistributive cash transfers, the factor that accounts for most of the decline of income inequality has been the narrowing of the wage differential between skilled and unskilled workers (ECLAC, 2012).

The decline in the skill premium, as manifested in narrowing differentials relative to the group without education, evinces a clear and consistent pattern across countries (see figure 4). At the same time, education levels in the population (and among those in work) have risen. However, it is difficult to gauge whether the evolution of this wage differential is mainly due to changes in the relative demand for skilled workers or changes in the relative supply. While some authors have stressed the importance of the increase in the relative supply of skilled workers (López-Calva and Lustig, 2010; Azevedo and others, 2013), others have emphasized the possible role of higher relative demand for unskilled workers in the context of an increasing supply of skilled labour (Gasparini and others, 2012; De la Torre, Messina and Pienknagura, 2012).

FIGURE 1

Latin America (18 countries): Gini coefficient, around 2002 and 2012
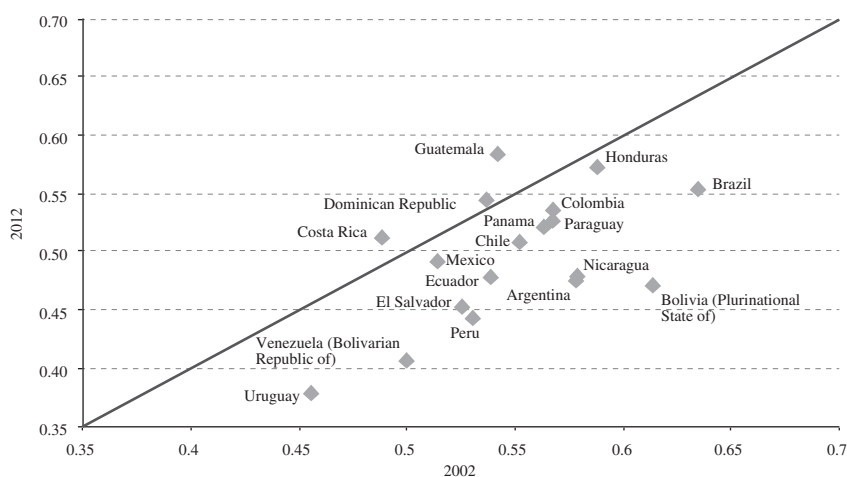
Source: Prepared by the authors, on the basis of Economic Commission for Latin America and the Caribbean (ECLAC), CEPALSTAT database.

FIGURE 2
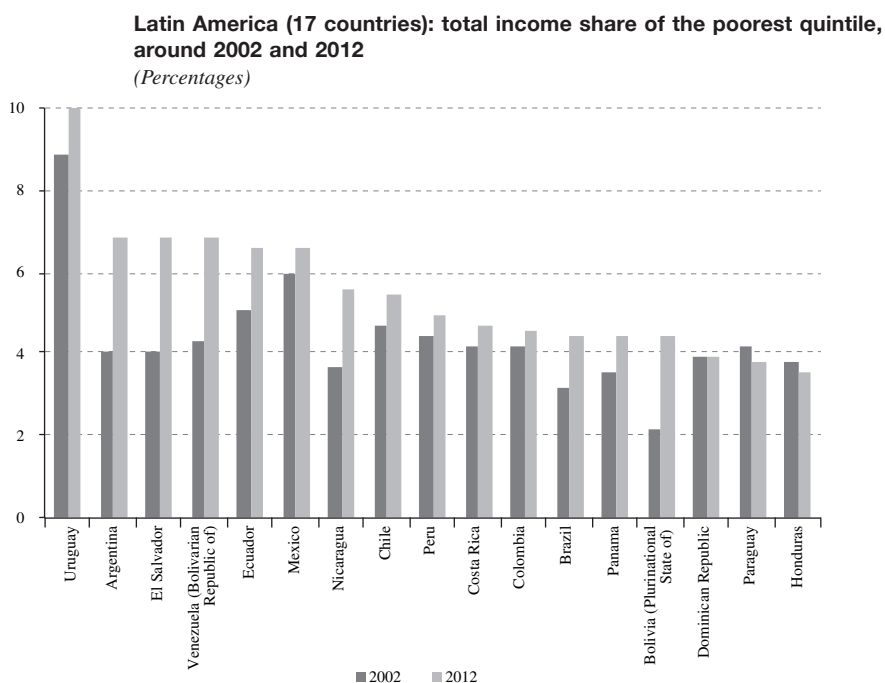
Latin America (17 countries): total income share of the poorest quintile, around 2002 and 2012

(Percentages)

■ 2002   ■ 2012

Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Social Panorama of Latin America 2013* (LC/G.2580), Santiago, 2013.

FIGURE 3

Latin America (17 countries): total income share of the richest quintile, around 2002 and 2012

(Percentages)

■ 2002   ■ 2012
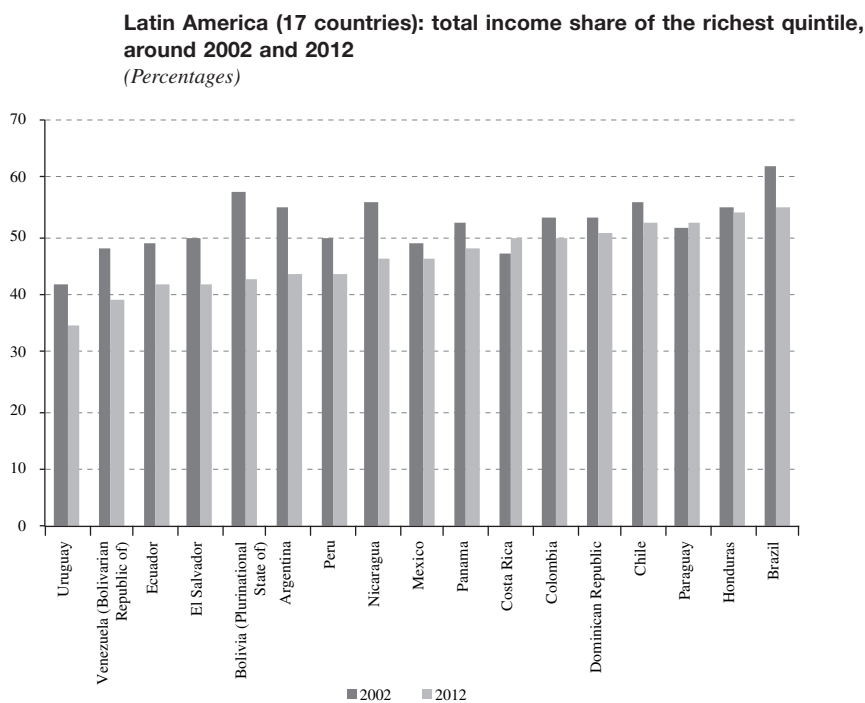
Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Social Panorama of Latin America 2013* (LC/G.2580), Santiago, 2013.

FIGURE 4

Latin America (18 countries): skill premium relative to the group with no education, 2002 and 2011

(*Percentages*)

A. Complete secondary education
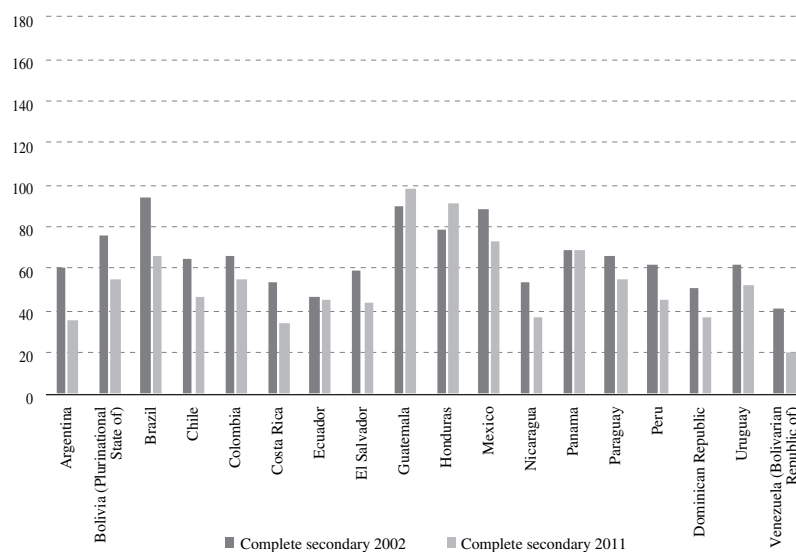
■ Complete secondary 2002   ■ Complete secondary 2011

B. Tertiary education

■ Tertiary 2002   ■ Tertiary 2011
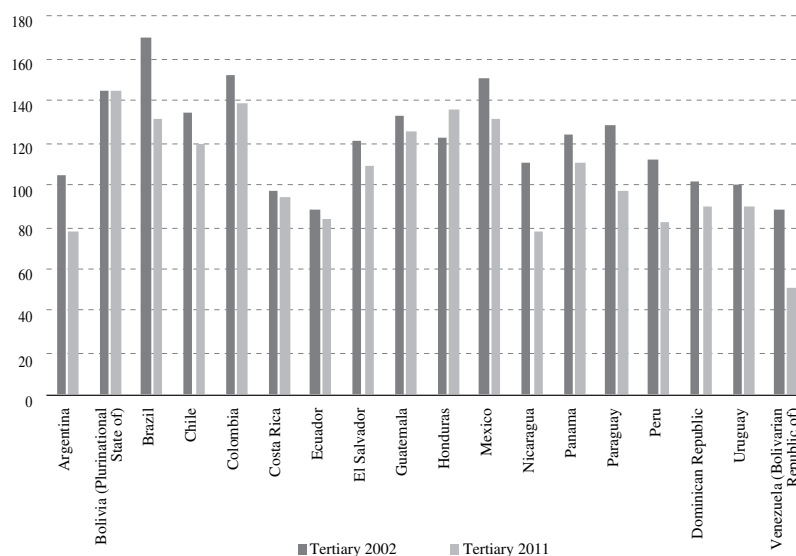
Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Compacts for Equality: Towards a Sustainable Future* (LC/G.2586(SES.35/3)), Santiago, 2014.

These distributive changes have taken place in a different political context to that of earlier decades. Democratic life has resulted in new electoral preferences and greater prominence for social demands. One consequence has been that, in a positive cycle of economic stability, governments have responded to these demands for social inclusion with policies of a more redistributive cast (Roberts, 2014). Other authors have preferred to speak of reforms inspired by the idea of "prudent redistribution with growth" (Cornia, 2010), involving progressive fiscal, labour and transfer policies. Redistributive policies and social reforms have not been the exclusive preserve of left-wing governments in the region. Rather, the institutionalization of electoral competition in contexts of high economic and social inequality seems to have led parties and governments of different ideological hues to strive to meet popular demands for equality and social inclusion (Roberts, 2014).

Thus, improved distribution may well be the most distinctive feature of the last decade in Latin America. This article will now go on to analyse whether these distributive changes within the region's countries over the last decade have been accompanied by any improvement in the income distribution between Latin Americans, or whether gaps have widened.

IV

Data for calculating regional inequality

To estimate regional inequality, a database was constructed out of a combination of variables from household surveys in 18 countries of the region at two points in time, around 2002 and around 2012.[6] These 18 countries contain 96% of the total population of Latin America. Details of sample sizes, population distribution by country and survey years can be found in table 1. The essential variables taken from these surveys are those relating to household income, and they have been standardized by the Economic Commission for Latin America and the Caribbean (ECLAC) so that they can be used to estimate factors like the incidence of poverty in the region.[7] Two income vectors are considered. The first is per capita household income, corrected for estimated survey non-response and adjusted for purchasing power parity (PPP).[8]

As an alternative way of equalling out households' purchasing power and so enabling the robustness of the results to be analysed, the poverty lines calculated by ECLAC to estimate regional poverty are used as price deflators. These lines represent the cost of purchasing a basket of staple foods and goods required to meet other basic needs, and can therefore be assumed to reflect differences in the cost of attaining a similar level of well-being across countries. To maintain consistency with the way these lines are employed by ECLAC to calculate poverty, use is made in this case of the per capita household income vector adjusted to national accounts values (see ECLAC, 2013).[9]

It is important to stress that the choice of price vector for carrying out comparisons between countries is an important methodological step. Measurements of global inequality and poverty are sensitive to the price vector used to compare incomes across countries (Chen and Ravallion, 2010; Ravallion, Chen and Sangraula, 2009; Milanovic, 2012). The new PPP vector for 2005, calculated by the International

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[6] Haiti and Cuba were not included in the analysis because the necessary information sources are not available.

[7] Another way of capturing household welfare is to consider household consumption rather than income. Income and spending surveys, which measure consumption spending by households, are also carried out periodically in the region. They are not available at the same points in time for a large set of countries, however, whereas household surveys are.

[8] Incomes were taken up to 2005 by considering the change in each country's general consumer price index (CPI) so that the PPP factors estimated for that year could be applied. In the case of Argentina, a simple average of price indices from five provinces was used as the deflator from 2007 onward. See World Bank, World Development Indicators [online] http://data.worldbank.org/data-catalog/world-development-indicators.

[9] There are two databases that compile household surveys from the region, constructing standardized income variables for the different countries. One is the ECLAC database, which the present study relies on, and the other is the Socio-Economic Database for Latin America and the Caribbean (SEDLAC) maintained by the Centre for Distributive, Labour and Social Studies (CEDLAS) of the National University of La Plata and the World Bank.

Comparison Programme, involved higher price estimates for most poor countries, with the result that global inequality levels were calculated to be over five points higher than with the previous PPP vector (Milanovic, 2012). As will be seen later, the results presented in this article are robust to both of the price vectors used in the study to carry out comparisons between countries.

TABLE 1

Latin America: household survey sample sizes and populations[a]

Around 2002	Sampling cases (*thousands*)	Percentage distribution of sampling cases	Expanded cases (*thousands*)	Percentage distribution of expanded cases	Population (*thousands*)	Percentage distribution of population
Argentina 2002	22 832	4	24 546	5	36 906	7
Bolivia (Plurinational State of) 2002	5 746	1	8 488	2	8 362	2
Brazil 2002	105 984	20	173 104	36	174 506	33
Chile 2000	65 007	13	15 033	3	15 455	3
Colombia 2002	129 164	25	39 767	8	39 900	8
Costa Rica 2002	11 094	2	3 991	1	3 930	1
Dominican Republic 2002	5 720	1	8 553	2	8 575	2
Ecuador 2002	6 030	1	8 288	2	12 567	2
El Salvador 2001	11 953	2	6 415	1	5 959	1
Guatemala 2002	2 759	1	11 556	2	11 204	2
Honduras 2002	22 010	4	6 668	1	6 236	1
Mexico 2002	17 167	3	101 522	21	101 721	20
Nicaragua 2001	4 191	1	5 193	1	5 101	1
Panama 2002	13 404	3	2 991	1	3 053	1
Paraguay 2001	8 131	2	5 333	1	26 004	5
Peru 2001	16 515	3	26 660	6	5 350	1
Uruguay 2002	18 421	4	2 678	1	3 321	1
Venezuela (Bolivarian Republic of) 2002	53 124	10	25 767	5	24 408	5
Latin America	519 252	100	476 556	100	521 429	100
Around 2011						
Argentina 2012	69 293	10	25 351	5	40 370	7
Bolivia (Plurinational State of) 2011	8 851	1	10 691	2	9 995	2
Brazil 2012	114 906	16	196 723	36	195 153	33
Chile 2011	59 084	8	16 941	3	17 149	3
Colombia 2012	228 662	33	45 029	8	46 448	8
Costa Rica 2012	11 374	2	4 661	1	4 669	1
Dominican Republic 2012	8 163	1	10 077	2	9 907	2
Ecuador 2012	19 840	3	14 676	3	15 018	3
El Salvador 2012	21 710	3	6 245	1	6 218	1
Guatemala 2006	13 686	2	12 966	2	14 334	2
Honduras 2010	7 043	1	8 041	1	7 619	1
Mexico 2012	9 002	1	117 284	21	115 301	20
Nicaragua 2009	6 515	1	5 755	1	5 813	1
Panama 2011	12 379	2	3 624	1	3 676	1
Paraguay 2011	4 894	1	6 465	1	29 272	5
Peru 2012	25 091	4	30 533	6	6 458	1
Uruguay 2012	43 839	6	3 373	1	3 373	1
Venezuela (Bolivarian Republic of) 2012	37 643	5	28 819	5	29 039	5
Latin America	701 975	100	547 256	100	590 082	100

Source: Prepared by the authors, on the basis of data from household surveys in the respective countries and Latin American and Caribbean Demographic Centre (CELADE) - Population Division of ECLAC, Population database.

[a] Further details on the databases used can be found at [online] http://interwp.cepal.org/badehog/acercade.asp.

V

The average incomes of Latin Americans

An initial approach to GDP and average incomes in the region's countries brings some major differences to light (see table 2). The ranking of the countries is similar in both cases, although not identical (see figure 5). If data from 2011 are taken, Chile is the country with the highest per capita GDP in the region (US$ 21,011 a year at PPP), while Uruguay has the highest per capita household income (US$ 554 a month at PPP).

The per capita GDP ratio between the richest country and the poorest (Chile and Nicaragua, respectively) rose from 4.0 to 5.5 between 2002 and 2011. Average differences in per capita household income have also

widened, with the ratio rising from 3.0 in 2002 (between Chile and Nicaragua) to 3.7 in 2012 (between Uruguay and Nicaragua). Chile is the country with the highest ratio between per capita household income and the poverty line (3.6 in the starting year and 4.2 in the end year), while this ratio is lowest in Honduras (0.9 and 1.0 in the starting and end years, respectively). The ratio between the highest and lowest per capita incomes relative to the poverty line fell over the period. The coefficient of variation of the three variables increased over the period (albeit only slightly in the case of income relative to the poverty line).

TABLE 2

Latin America: per capita gross domestic product (GDP) and household income, 2002, 2011 and 2012
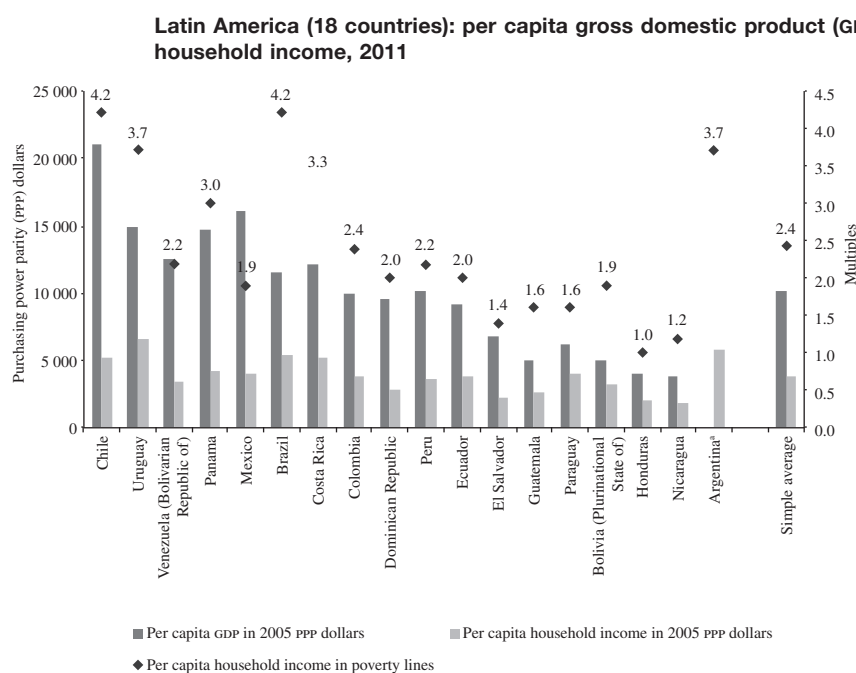
	Per capita GDP (*in 2005 PPP dollars*)		Per capita household income (*in 2005 PPP dollars*)[b] (*monthly*)		Per capita household income (*in poverty lines*)[b]	
	2002	2011	2002	2012	2002	2012
Argentina[a]	7 948	…	281	482	2.1	3.7
Bolivia (Plurinational State of)	3 229	4 936	189	273	1.4	1.9
Brazil	7 395	11 515	316	445	3.0	4.2
Chile	10 413	21 001	363	427	3.6	4.2
Colombia	6 154	9 973	213	311	1.8	2.4
Costa Rica	7 491	12 074	327	433	3.0	3.3
Dominican Republic	5 539	9 617	247	228	1.8	2.0
Ecuador	5 954	9 155	290	311	1.7	2.0
El Salvador	4 920	6 785	228	189	1.5	1.4
Guatemala	3 717	4 914	189	223	1.3	1.6
Honduras	2 724	4 031	174	171	0.9	1.0
Mexico	10 361	16 044	305	335	2.0	1.9
Nicaragua	2 572	3 797	143	151	1.1	1.2
Panama	7 190	14 756	318	356	2.4	3.0
Paraguay	4 025	6 112	252	333	1.3	1.6
Peru	5 219	10 076	190	304	1.4	2.2
Uruguay	7 819	14 970	430	554	3.1	3.7
Venezuela (Bolivarian Republic of)	7 997	12 534	172	289	1.6	2.2
Simple average	6 148	10 135	257	323	1.9	2.4
Highest	10 413	21 001	430	554	4	4
Lowest	2 572	3 797	142.74	151.4	0.9	1
Ratio highest/lowest	4.0	5.5	3.0	3.7	4.3	4.0
Coefficient of variation	0.39	0.47	0.30	0.35	0.40	0.42

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

[a] Per capita GDP figures in PPP have not been published for Argentina since 2007.

[b] The 2002 figures include data from 2000 in Chile and from 2001 in El Salvador, Nicaragua, Paraguay and Peru. The 2012 figures include data from 2011 in Chile, Panama, Paraguay and the Plurinational State of Bolivia, 2010 in Honduras and 2006 in Guatemala.

FIGURE 5

Latin America (18 countries): per capita gross domestic product (GDP) and household income, 2011

■ Per capita GDP in 2005 PPP dollars   ■ Per capita household income in 2005 PPP dollars

◆ Per capita household income in poverty lines

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

[a] Per capita GDP figures in PPP have not been published for Argentina since 2007.

The widening of average differences in per capita GDP and income between the region's countries, then, does not support the idea that the average situation is one of convergence between them. As will be seen in the following section, though, if the borders between countries are ignored and individuals are taken as the unit rather than country averages, the differences have narrowed.
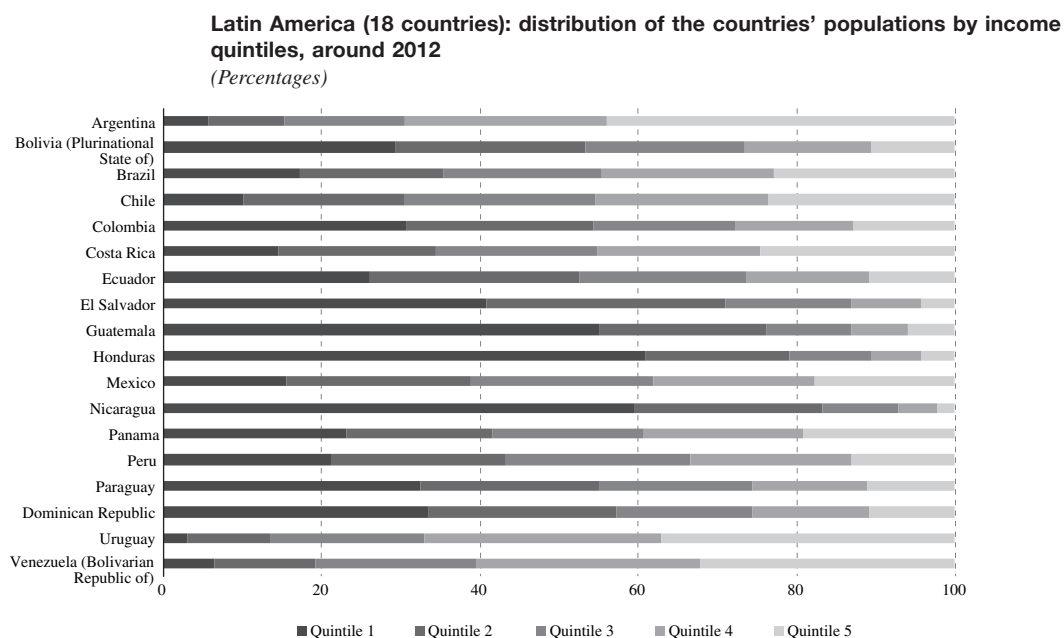
VI

Income distribution between Latin Americans

The analysis of global inequality uses the traditional statistical tools employed to analyze income inequality between households at a national level. As discussed earlier, the first step is to construct an income vector that is comparable across the region's countries. The results presented below were obtained by considering income values in PPP dollars. The results obtained using the ECLAC poverty line as the measurement unit are given in the annex, since they are generally similar to those shown below.

The distribution of the countries' populations within these global quintiles is an initial indicator of the income differences between countries (see figure 6 and table A.1 of the annex). In countries such as Argentina, Brazil, Chile, Costa Rica and Uruguay, over half the population is in the top two quintiles of the regional distribution. At the other extreme, over half the population in El Salvador, Guatemala, Honduras and Nicaragua (and to a lesser extent the Dominican Republic, Mexico and the Plurinational State of Bolivia) is in the bottom two quintiles of the regional distribution. As was to be expected, the larger countries, which weigh more heavily in the construction of the quintiles, have more homogeneously distributed populations. The results obtained when incomes are compared using the poverty line as the unit of measurement are similar (see table A.2 of the annex).

FIGURE 6

Latin America (18 countries): distribution of the countries' populations by income quintiles, around 2012

(Percentages)

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

Between 2002 and 2012, the average per capita income of the region's inhabitants, expressed in PPP, grew by 28%. If income is measured in poverty lines, the growth in the period was 30%. The strongest growth was at the bottom of the distribution, as illustrated in figure 7, which presents changes by decile and percentile. In terms of both PPP-adjusted income and income relative to the poverty line, it can be seen that the increase tails off up the income scale. In the terminology of Ravallion and Chen (2003), the growth incidence curve is indicative of pro-poor growth. This evolution is more marked in the case of PPP-adjusted income, which shows higher growth than poverty line-adjusted income for households in the bottom half of the income distribution. This higher growth in the incomes of individuals in the lower part of the regional distribution is thus a first indication of a decline in global inequality in the region.
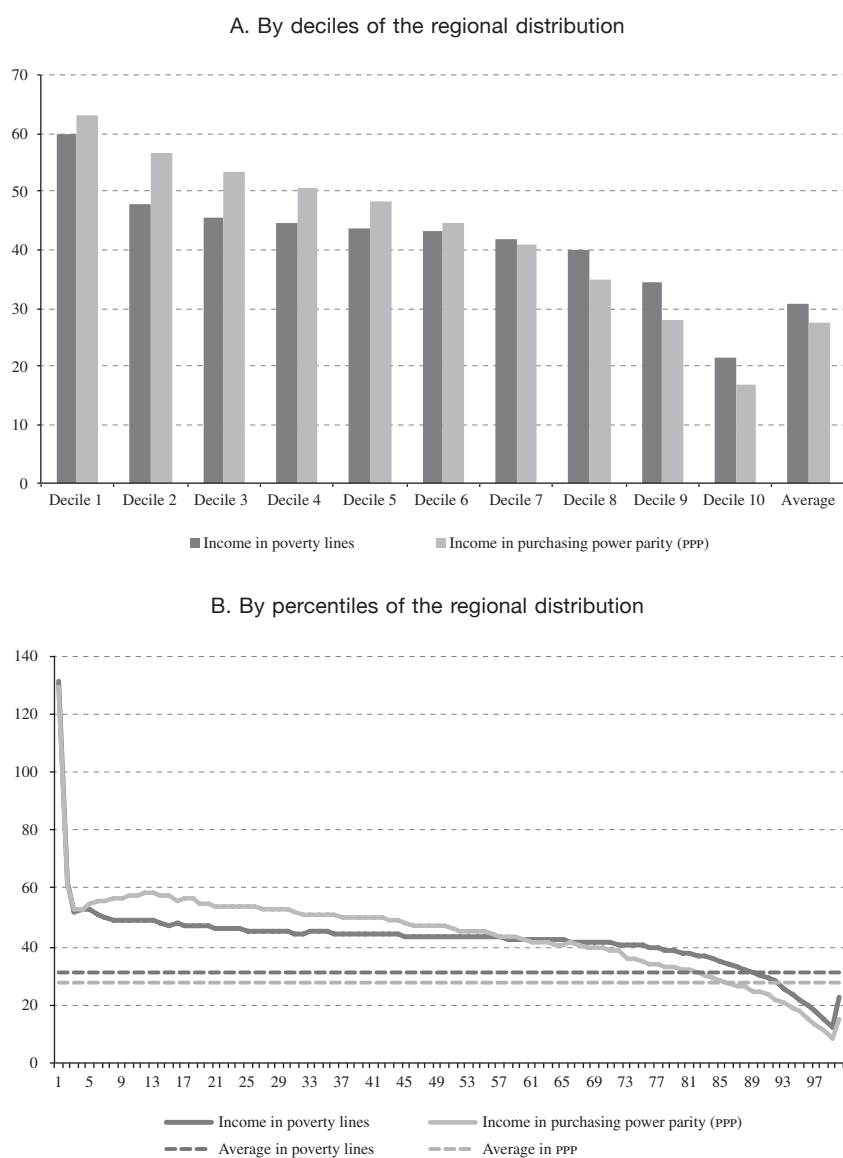
Aggregated for the whole set of countries, this growth curve masks differences in the behaviour of groupings. This can be better appreciated if countries are clustered in four groups based on changes in their average incomes in the period considered (see figure 8). Changes in income and the classification of the countries into groups are presented in table A.3 of the annex. While some countries show a growth pattern

that is clearly favourable to the poor (Argentina, the Bolivarian Republic of Venezuela, Paraguay and Uruguay are the extreme cases), in others the curve rises with income, with this showing stronger growth in the upper part of the distribution (Guatemala, Honduras and Nicaragua). Once again, both income vectors used yield similar results.

All the global inequality indicators calculated for the region show a similar pattern: inequality levels are higher when measured for Latin America as a whole than they are in most of the region's countries taken individually (see table 3), a finding also yielded by calculations of global inequality at the world level (see, for example, Anand and Segal, 2015; Lakner and Milanovic, 2013). In the second place, between 2002 and 2012, a period when inequality declined steadily in most of the region's countries, indicators of global inequality also dropped significantly, with the Gini coefficient, the Theil index and the 90/10 ratio all presenting a considerable decline. The Theil index fell by more than the Gini coefficient, since the former gives greater weight to what happens at the bottom of the distribution, which, as already seen, is where the greatest improvements occurred. The findings point in the same direction whether income is adjusted for PPP or for the poverty line.

FIGURE 7

Latin America: changes in real incomes, 2002-2012
(Percentages)

A. By deciles of the regional distribution

■ Income in poverty lines   ■ Income in purchasing power parity (PPP)

B. By percentiles of the regional distribution

—— Income in poverty lines   —— Income in purchasing power parity (PPP)
---- Average in poverty lines   ---- Average in PPP

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

FIGURE 8

Latin America: income changes by country grouping, 2002-2012

A. Income in purchasing power parity (PPP)

Chile and Panama	Dominican Republic, El Salvador, Ecuador and Mexico
Bolivia (Plur. State of), Brazil, Colombia, Costa Rica and Peru	Argentina, Paraguay, Uruguay and Venezuela (Bol. Rep. of)
Guatemala, Honduras and Nicaragua	

B. Income in poverty lines

Chile and Panama	Dominican Republic, El Salvador, Ecuador and Mexico
Bolivia (Plur. State of), Brazil, Colombia, Costa Rica and Peru	Argentina, Paraguay, Uruguay and Venezuela (Bol. Rep. of)
Guatemala, Honduras and Nicaragua	

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

TABLE 3

Latin America: global inequality indices, 2002 and 2012

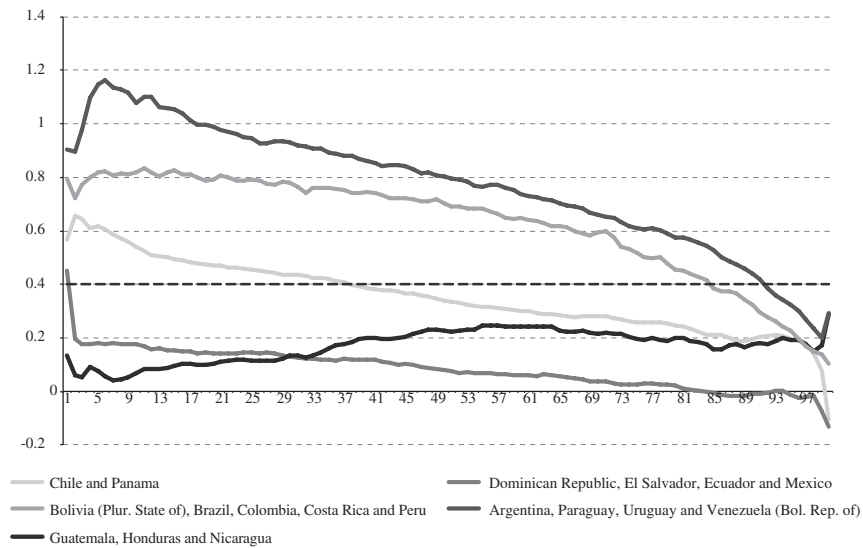| Income in purchasing power parity (PPP)	2002	2012	Percentage change
Gini coefficient	0.587	0.539	-8
Theil index	0.760	0.658	-13
90/10 ratio	14.4	11.3	-21
Income in poverty lines			
Gini coefficient	0.580	0.546	-6
Theil index	0.768	0.703	-8
90/10 ratio	12.1	10.6	-12

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.
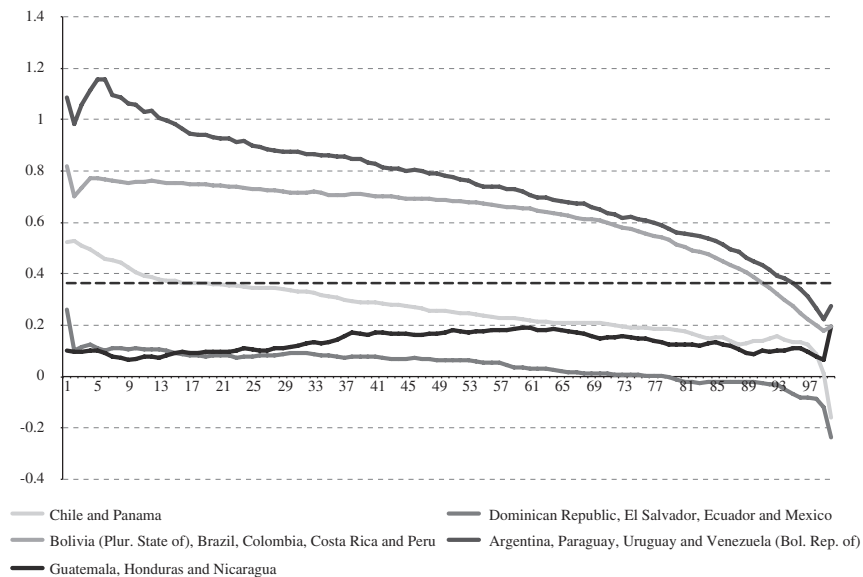
The income share captured by the richest percentiles in the region fell over the period, although the decline was very small, especially when PPP-adjusted income is taken (see figure 9).[10] Once again, the results indicate that the gaps between people in the region as a whole are smaller than a decade ago, reaffirming the finding of a decrease in regional inequality when this is considered globally.

Income inequality between individuals in the region can be broken down into inequality between countries and inequality within countries. The former is equivalent to considering inequality between all individuals in the region, assuming that each has an income equal to his or her country's average per capita income. Inequality within groupings or within countries, meanwhile, is a weighted average of national inequality indicators, the weights being each country's income as a share of the Latin American total.

[10] This indicator is calculated on the basis of household survey information and consequently underestimates the true share of wealth captured by the highest percentiles, whose incomes tend not to be fully reflected in surveys of this type.

FIGURE 9

Latin America: income shares captured by the top percentiles, 2002-2012
(Percentages)
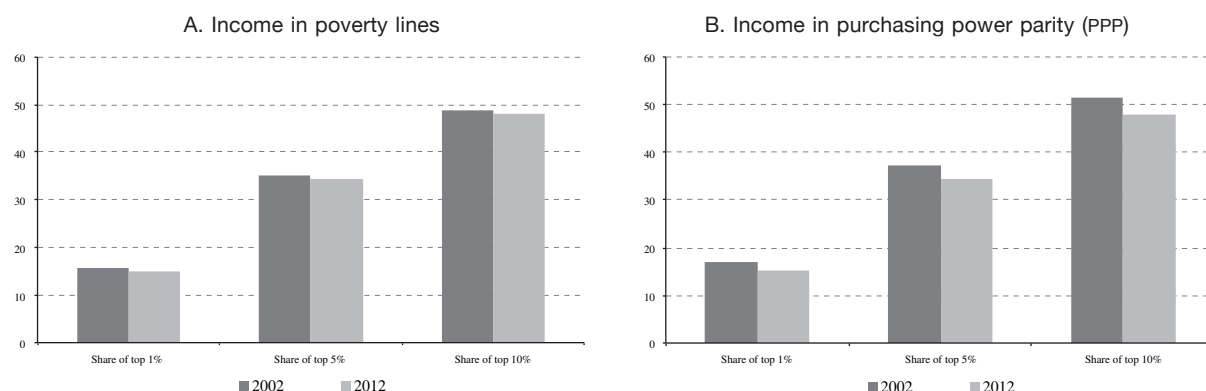
A. Income in poverty lines

B. Income in purchasing power parity (PPP)

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

The Theil index is used to display this decomposition of global inequality in the region, as it meets the requirements for this. A first aspect that emerges from this decomposition is that the bulk of regional inequality is within countries (see table 4). About 90% of global inequality in the region is the result of differences within countries. This finding is different from that yielded by worldwide decompositions, which indicate that between 80% and 90% of global inequality at the world level (depending on the measures and years taken) derives from differences in average incomes between countries (Anand and Segal, 2015). Restricting the analysis to

Latin American countries reveals greater homogeneity between these, as might be expected from the smaller number of countries in the calculation; in turn, inequality within countries explains almost the entirety of regional inequality. These results indicate that the internal dynamics of countries, associated with their social, institutional and political situations, are more relevant to regional inequality than dynamics between countries (associated with migration or trade, for example). Again, it is worth recalling that each country's contribution to inequality depends mainly on its share of the total income of the region's households, so that Brazil and Mexico feature very prominently (see table A.4 of the annex).

A second aspect to be highlighted in this decomposition exercise is that the reduction in global inequality in the region during the period is mainly explained by the decline in inequality within countries. Once again, this result is strongly influenced by the distributive improvements that have taken place in Brazil and Mexico. The importance of inequality between countries (reflecting differences in average income by country) has consistently increased with the trend towards greater divergence in average incomes discussed in section V. Inequality between countries accounts for a small but growing share of global inequality in the region. These results indicate that the living conditions of Latin America's inhabitants are more egalitarian in relative terms now than a decade ago, although the differences between the countries' average incomes are greater. The findings regarding the decrease in global inequality in the region, and the absolute predominance of inequality within countries, with its deconcentrating effect, are similar to (although more pronounced than) those reported in Gasparini and others (2008) for the 1992-2006 period.

TABLE 4

Decomposition of the Theil index for Latin America, 2002 and 2012

	Theil index		Importance of the components (*percentage share*)		Percentage change
	2002	2012	2002	2012	2012-2002
Income in poverty lines					
Within countries	72.4	63.2	94	90	-13
Between countries	4.5	7.1	6	10	60
Theil index	76.8	70.3	100	100	-8
Income in purchasing power parity (PPP)					
Within countries	72.9	61.7	95	88	-15
Between countries	3.1	4.1	4	6	33
Theil index	76.0	65.8	100	100	-13

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

VII

Final comments

Notwithstanding differences between countries, the income growth experienced by Latin American households in the last decade has been highest among households and individuals in the bottom stratum of the distribution. Global inequality in the region declined between 2002 and 2012 as a result, indicating that the living conditions of the inhabitants of Latin America were more equal at the end of those 10 years than at the start. These findings are robust to both price vectors used to compare income between countries.

Although the incomes of individuals in Latin America as a whole are less unequal now than a decade ago, this finding is the outcome of two opposing effects: a decline in inequality in most of the countries and a widening of the differences between the countries' average incomes. Although the second effect is very slight, it is apparent that widening income gaps between the region's countries can become a factor that works against the reduction of inequality from a regional perspective.

ANNEX

TABLE A.1

Latin America (18 countries): distribution of the population by regional income quintiles[a], 2002 and 2012

(Percentages)

		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Argentina	2002	14.1	17.1	19.1	22.7	27.1	100.0
	2012	5.6	9.5	15.4	25.4	44.0	100.0
Bolivia (Plurinational State of)	2002	39.8	22.2	15.8	12.7	9.6	100.0
	2011	29.1	24.1	20.1	16.0	10.6	100.0
Brazil	2002	22.0	20.0	19.0	18.3	20.6	100.0
	2012	17.3	18.0	19.9	21.9	22.9	100.0
Chile	2000	9.5	18.5	22.7	24.3	25.0	100.0
	2011	10.0	20.4	24.2	21.8	23.6	100.0
Colombia	2002	30.5	24.6	19.4	14.3	11.1	100.0
	2012	30.8	23.4	18.0	15.0	12.8	100.0
Costa Rica	2002	10.7	13.7	21.3	26.4	27.9	100.0
	2012	14.4	20.0	20.4	20.5	24.7	100.0
Dominican Republic	2002	20.8	22.5	22.4	19.5	14.7	100.0
	2012	33.3	24.0	17.2	14.6	11.0	100.0
Ecuador	2002	17.8	23.4	24.3	20.9	13.6	100.0
	2012	26.2	26.5	20.9	15.6	10.9	100.0
El Salvador	2001	29.6	23.0	20.1	16.3	11.1	100.0
	2012	40.7	30.3	15.8	9.0	4.3	100.0
Guatemala	2002	31.4	27.1	17.1	14.0	10.5	100.0
	2006	55.0	21.0	10.8	7.1	6.0	100.0
Honduras	2002	53.6	19.9	13.0	8.3	5.3	100.0
	2010	60.8	18.3	10.3	6.4	4.2	100.0
Mexico	2002	8.3	17.7	22.0	26.2	25.8	100.0
	2012	15.4	23.4	23.1	20.2	17.9	100.0
Nicaragua	2001	51.0	24.0	13.2	7.7	4.2	100.0
	2009	59.4	23.8	9.5	4.9	2.4	100.0
Panama	2002	23.4	17.8	18.2	20.6	19.9	100.0
	2011	23.1	18.4	19.1	20.0	19.4	100.0
Peru	2001	29.5	24.2	21.0	15.7	9.6	100.0
	2012	21.1	22.2	23.1	20.5	13.0	100.0
Paraguay	2001	27.3	21.7	21.7	16.5	12.8	100.0
	2011	32.3	22.6	19.4	14.5	11.2	100.0
Uruguay	2002	3.4	12.3	20.0	29.2	35.1	100.0
	2012	3.0	10.4	19.4	30.1	37.1	100.0
Venezuela (Bolivarian Republic of)	2002	11.1	15.4	21.2	25.3	27.0	100.0
	2012	6.5	12.7	20.2	28.1	32.3	100.0

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

[a] In 2005 purchasing power parity (PPP) dollars.

TABLE A.2

**Latin America (18 countries): distribution of the population
by regional income quintiles**[a]

(Percentages)

		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Argentina	2002	23.2	19.5	19.1	19.3	18.9	100.0
	2012	9.6	13.4	19.9	26.1	31.0	100.0
Bolivia (Plurinational State of)	2002	38.5	21.4	15.4	13.7	10.9	100.0
	2011	26.9	23.8	21.7	17.5	10.1	100.0
Brazil	2002	18.4	17.0	18.0	20.8	25.7	100.0
	2012	13.2	14.5	17.6	23.7	31.1	100.0
Chile	2000	6.2	11.7	18.8	27.3	36.0	100.0
	2011	6.6	13.5	21.9	27.7	30.3	100.0
Colombia	2002	23.7	23.0	20.9	17.9	14.5	100.0
	2012	24.3	22.2	20.6	18.1	14.7	100.0
Costa Rica	2002	8.2	10.0	17.3	27.7	36.8	100.0
	2012	12.1	16.2	21.3	23.3	27.0	100.0
Dominican Republic	2002	22.2	21.2	21.2	20.0	15.4	100.0
	2012	32.6	21.5	17.7	16.3	11.9	100.0
Ecuador	2002	22.4	23.4	22.7	18.5	13.0	100.0
	2012	22.3	25.2	23.8	18.1	10.6	100.0
El Salvador	2001	24.6	21.4	20.9	19.7	13.4	100.0
	2012	33.2	29.9	20.4	11.6	4.9	100.0
Guatemala	2002	30.6	26.5	17.8	14.5	10.6	100.0
	2006	44.9	23.7	14.4	9.9	7.0	100.0
Honduras	2002	55.2	20.0	12.3	7.7	4.8	100.0
	2010	58.8	18.3	11.7	6.9	4.2	100.0
Mexico	2002	13.0	22.8	23.9	21.9	18.3	100.0
	2012	25.7	28.0	22.3	14.1	9.9	100.0
Nicaragua	2001	43.5	23.6	15.8	11.0	6.2	100.0
	2009	46.8	25.9	15.5	8.0	3.8	100.0
Panama	2002	19.0	15.5	18.0	22.1	25.4	100.0
	2011	18.9	16.7	19.9	22.9	21.6	100.0
Peru	2001	27.3	24.1	21.9	16.3	10.4	100.0
	2012	18.0	21.3	24.7	22.7	13.3	100.0
Paraguay	2001	31.9	24.3	19.5	14.7	9.7	100.0
	2011	40.4	23.0	17.9	11.8	6.9	100.0
Uruguay	2002	3.4	10.1	17.6	29.8	39.1	100.0
	2012	3.4	8.9	18.3	32.6	36.9	100.0
Venezuela (Bolivarian Republic of)	2002	23.7	21.7	20.8	19.3	14.5	100.0
	2012	16.1	22.3	24.6	24.1	13.0	100.0

Source: Prepared by the authors, on the basis of data from household surveys in the respective countries.

[a] Income in poverty lines.

TABLE A.3

Latin America (18 countries): country groupings and changes in per capita household income in purchasing power parity (PPP)

(Percentages)

Grouping	Country	Changes in per capita income in PPP[a], 2002-2011
1	El Salvador	-10
1	Dominican Republic	-2
1	Ecuador	0
1	Mexico	3
2	Guatemala	6
2	Honduras	7
2	Nicaragua	7
3	Panama	11
3	Chile	16
4	Peru	31
4	Costa Rica	32
4	Brazil	32
4	Bolivia (Plurinational State of)	33
4	Colombia	46
5	Venezuela (Bolivarian Republic of)	52
5	Uruguay	53
5	Paraguay	53
5	Argentina	76

Source: Prepared by the authors on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

[a] In purchasing power parity (PPP) dollars.

TABLE A.4

Latin America (18 countries): contribution to intra-group inequality, 2002 and 2012

	2002			2012		
	Theil index	Percentage income share	Percentage contribution to intra-group inequality	Theil index	Percentage income share	Percentage contribution to intra-group inequality
Argentina	0.487	5	4	0.322	6	4
Bolivia (Plurinational State of)	0.742	1	1	0.391	1	1
Brazil	0.735	41	49	0.614	44	52
Chile	0.570	4	4	0.450	4	3
Colombia	0.660	6	7	0.570	7	8
Costa Rica	0.465	1	1	0.501	1	1
Dominican Republic	0.533	2	1	0.420	1	1
Ecuador	0.565	2	2	0.434	2	2
El Salvador	0.505	1	1	0.368	1	0
Guatemala	0.596	2	2	0.680	1	1
Honduras	0.768	1	1	0.617	1	1
Mexico	0.486	23	18	0.469	20	18
Nicaragua	0.824	1	1	0.440	0	0
Panama	0.612	1	1	0.529	1	1
Paraguay	0.655	1	1	0.588	1	1
Peru	0.619	4	4	0.404	5	4
Uruguay	0.357	1	1	0.247	1	0
Venezuela (Bolivarian Republic of)	0.400	3	2	0.273	4	2

Source: Prepared by the authors, on the basis of World Bank, World Development Indicators, and household survey data from the respective countries.

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