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Analysis of the evolution of global and partial (health, education and income) HDI from 2000 to 2011 and inequality-adjusted HDI in 2011 for Latin America (12 countries) and BRIC (Brazil, Russia, India and China)

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Development as an expansion of human freedoms

Since the 1980s, the assessment of development in modern societies took multifaceted features, including economic and material progress, which is only one of the directly relevant aspects. The focus of assessments has increasingly become the general living conditions and the consequent possibilities of people to live life satisfactorily and achieve accomplishments, according to their own individual and community perspectives. This comprehensive assessment perspective stemmed directly from the ideas proposed by Amartya Sen, Mahbub ul Haq and other development economists, with the so-called "capabilities approach" or by considering development as the expansion of human freedom. In this approach, human freedom is considered in its various aspects and is substantively translated into the very essence of development. Development is freedom in that it is the process that allows individuals to be well nourished, to be literate, to participate in national and community civic life, to say what they think, to enjoy good housing conditions, to have job opportunities and obtain satisfactory returns/paychecks, to have opportunities for cultural progress and continuous learning. The increase in material production

and economic income of individuals is certainly an always important and possibly decisive factor to allow the process of development as freedom to advance (expansion of the capabilities of social individuals).

Freedom implies the conditions that the individual has to perform what Sen calls functionings. Functionings are human doings or human states/beings that the individual can rationally want to accomplish or achieve: to be well nourished, to live a healthy life, to sleep well, to master his own language, to be an educated person, to practice physical activity, to listen to music, to fish, to participate in the political life of his community, to pray, to sing and so forth, in an indefinite extension sequence. Someone's capability corresponds to the set of functionings that he/she can really choose to do or be. To have capability is to be able to combine the performance of countless rationally-chosen functionings. The individual's agent condition is related to his/her human development (expansion of freedom), for the ability to choose also defines the freedom of the individual. Thus, according to Sen's approach, freedom corresponds to the expansion of capability, that is, to the increase of umpteen combinations – conceivable and rationally desirable by social individuals – of the potential achievements of human beings. To be free is to be able to be and do everything one could want among the morally-significant possibilities of social life already provided by material and intellectual progress of human societies.

The condition of the individual's freedom is limited when there is a low human development. Limitations generally result from circumstances beyond the control of individuals, such as the lack of economic opportunities, poverty, political despotism, deprivation of civil and individual rights, social exclusion, etc. Public policies can improve human development if successful in removing freedom-depriving sources affecting individuals. Freedom is a developmental end in that it substantially corresponds to the extension of individual capabilities, but is also a means to achieve development. As a means, freedom is considered by Sen instrumentally, unfolding into tangible elements through the State's organizational and operational structure: political freedoms, opportunities to access economic resources, opportunities to obtain health and education, guarantees of transparency in public affairs and social protection.

Analysis of human development

Considering development as freedom (or capabilities approach) is also recognized as the human development approach, because these ideas have inspired the construction of the Human Development Index (HDI) as the comprehensive indicator of the development process. The practicality of the HDI as a multidimensional numerical synthesis, with its three sub--indexes related to its three dimensions (health, education and income), enabled the substantial increase of human development analyses, especially comparison between countries. Comparisons of per capita income were more easily performed by using data from the national income, but health, education and quality of life indicators in general have always been more difficult to compare and include in a simple analysis.

As a summary measure, the HDI measures the average standards achieved by the population in a given country (region, municipality or social group) in three basic dimensions of human development: a long and healthy life (health), access to knowledge (education) and a decent standard of living (income).[1] As Sen says, HDI is more than a measure of economy's wealth; it seeks to measure the richness of human life.

Health, education and income are essential and interrelated dimensions of human freedom. Advances achieved in each dimension individually contribute to the improvement of the other two dimensions in a way that it is not possible to determine which is more relevant, if not perhaps in the empirical sense, and still after a very perceptive case study that is able to capture the meaning and strength of reciprocal and cumulative determinations in the evolution of partial indexes. Thus, the three dimensions equally contribute to establish the HDI.

Public policies can positively affect the three dimensions of human development. The assessment of needs and resources of each nation in

1 Each one of these dimensions is represented in a partial normalized index, whose construction has as reference the maximum and minimum levels of four original variables: life expectancy at birth, years of education, expected years of schooling and gross national income. HDI is the geometric mean of these normalized indexes. For further details on the parameters and the reformulated methodology of the HDI in 2011, visit the UNDP website, especially the Human Development Report 2011 technical note, available at: http://hdr.undp.org/en/reports/global/hdr2011/download/.

every region and community can reveal in which dimension human development needs to advance more and which public policies are best suited to achieve it. A good knowledge of the HDI's behavior over the years and in comparison with other countries is an important contribution to the recognition of needs. This is what we intend to achieve with this analysis of the evolution of the HDI in Latin America (Brazil and 11 selected countries), compared to other BRIC countries in the period 2000-2011.

Global HDI level and evolution in Latin America

In the 11 years between 2000 and 2011, the HDI has grown in all 12 Latin American countries part of this analysis (see Table 1). It was an impressive growth since it fluctuated between 6.4% (Uruguay) to 12% (Venezuela), with an average of 8.1% for the 12 countries, which allowed 10 of them to maintain or increase their position in the international HDI ranking.[2] Even Uruguay, which already had a high human development and experienced low growth in the period, progressed from the 48th to the 45th position among 153 participating countries. Venezuela has climbed 11 positions in the ranking, from the 74th to the 63rd, while other countries have maintained or improved their position, with the exception of two countries: Peru and Bolivia. The first one had a positive HDI progress, although lower than the average of the 12 countries. It has a high HDI and lost two positions in the international ranking due to the contingency of the evolution of countries having a very similar HDI. In turn, Bolivia has only an average HDI; it lost one position in the international ranking and became the country with the lowest HDI among the 12 countries surveyed.

2 To use the change of position in the HDI ranking between 2000 and 2011 as an indicator, it was necessary to adopt for this indicator (and other similar ones, in the analysis of the evolution of partial indexes) a restriction of the total number of countries surveyed in 153, which possess the calculated index for those two years.

Table 1. HDI variation and LA 12 and world ranking position. Selected Latin American countries and BRIC – 2000 and 2011

Countries	Variation (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000	Ranking 2011	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11	LA 12 position	LA 12 position	among 153	
Argentina	6.4	11	0.6	0.4	0.7	1	2	44	43
Bolivia	8.3	5	0.7	1.2	0.4	11	12	88	89
Brazil	8.0	6	0.7	0.8	0.6	7	8	71	70
Chile	7.5	9	0.7	0.8	0.5	2	1	45	41
Colombia	8.9	2	0.8	0.7	0.8	9	9	75	72
El Salvador	8.9	3	0.8	1.0	0.6	10	10	86	86
Ecuador	7.8	7	0.7	0.8	0.6	6	7	69	69
Mexico	7.2	10	0.6	0.6	0.6	4	4	52	52
Paraguay	8.7	4	0.8	0.7	0.8	12	11	89	88
Peru	7.6	8	0.7	0.5	0.8	5	6	65	67
Uruguay	6.4	12	0.6	0.3	0.8	3	3	48	45
Venezuela	12.0	1	1.0	1.1	1.0	8	5	74	63
China	16.8	--	1.4	1.5	1.4	--	--	91	84
India	18.7	--	1.6	1.8	1.4	--	--	113	109
Russia	9.3	--	0.8	1.0	0.7	--	--	61	59
LA 12 average	8.1	--	0.7	0.7	0.7	--	--	--	--

Over 11 years, the HDI for the 12 countries evolved within the former range of "medium human development" (0.5 to 0.8), except for Chile and Argentina, which, in these 11 years, evolved to achieve the range of "high human development" (0.8 or higher), currently defined as "very high".[3] Thus, according to the new stratification, Chile and Argentina head the ranking of the 12 Latin American countries analyzed as nations with very high human development, while seven other countries have high human development (Uruguay and Mexico, with rates close to the

3 In actual fact, in 2011, the HDI of Argentina would still be 0.003 points away from the old "high human development" range (HDI of 0.797). However, under the new country stratification criteria per HDI level (in four range, per quartiles), Argentina is part of the first quartile (47 countries with "very high human development") along with Chile, holding, respectively, the 45th and 44th positions in a ranking of 187 countries in 2011.

leaders, followed by Venezuela, Peru, Ecuador, Brazil and Colombia) and three countries have medium human development (El Salvador, Paraguay and Bolivia). Therefore, it is worth reaffirming that none of these 12 major Latin American countries have low human development and they all had a positive HDI growth over the period.

The relatively favorable improvement of the HDI in the 12 Latin American countries corresponds to the awareness of increasing advances in the region, which sponsor new possibilities towards less unequal societies and more widespread access to well-being. Such advances correspond to reducing poverty and inequality, especially in view of the increase in labor income and public transfers of income to the most vulnerable sectors (ECLAC, 2012). Poverty and indigence stand at their lowest level in the last 20 years, which is not reflected in a more accelerated growth of the income indicator (see ahead), but may be favoring improvements in the average social conditions of health and education.

Venezuela stands out among these 12 countries, since the greater growth of its HDI significantly changed its ranking in the group, going from 8th to 5th. It was the only country to display a significant change of position against the others in the comparison of HDIs. Venezuela has surpassed Peru, Ecuador and Brazil, which have lost one spot in the 12-country ranking. In the same period, Chile surpassed Argentina and became the country with the highest HDI in Latin America, while Paraguay surpassed Bolivia, leaving the latter country last among the 12 Latin American surveyed nations (see Table 1).

Comparison with Asian countries

When comparing data from these countries with data from the other three BRIC countries, we note that, regarding HDI evolution, Russia, India and China rose more than all the Latin American countries, except Venezuela, whose HDI grew more than Russia's. In fact, the HDI evolution in that country was similar to the average for Latin American countries, while the trend observed for India and China was impressive, exceeding by two times or more the HDI growth in those nations. It should be noted that

these discrepancies in the evolution of the HDI can be largely explained by the low HDI level of India and China in 2000, both lower than those of all 12 Latin American countries at the time. With the evolution noted over 11 years, China has achieved an HDI level that would rank it 10th among the analyzed Latin American countries, surpassing El Salvador, Paraguay and Bolivia. Despite being the country with the largest HDI increase among the 15 analyzed countries, India has evolved from a low to a medium level of human development, but stood 26 positions below Bolivia in 2011 in the international ranking of 187 countries. Russia has a high HDI, which sets it well with regard to the surveyed Latin American countries, as it would rank 5th, just behind the bloc of the four largest HDIs, namely, Chile, Argentina, Uruguay and Mexico.

Unfolding evolution in two subperiods

The HDI evolution in the subject 11 years can be split into two subperiods: 2000-2005 and 2005-2011, as indicated in Table 1. It is thus possible to check whether the already commented HDI evolution in 15 countries was relatively homogeneous for the period or faster at the beginning or the end of the first decade of the twenty-first century. Among Latin American countries, there were six cases of significant evolution differences in the two subperiods.[4] Bolivia, Chile and El Salvador have experienced greater growth in the first five years, and the annual growth difference for the first country was very significant (three times greater, or 0.8 p.p.). Conversely, other three countries had higher HDI growth in the last six years of the series: Argentina, Peru and Uruguay.[5] Regarding the other three countries considered, the first subperiod was more positive, with significant differences for Russia and India, while China practically maintained the same HDI growth rate in the two subperiods.

4 In this analysis, the occurrence of differences equal to or greater than 0.3 percentage points in their respective average annual growth rates was considered a significant difference between the two subperiods.

5 In all three cases, this positive evolution is mainly due to the HDI income, which grew much more in the 2005-11 period.

Establishing the global HDI through its three dimensions

An important observation in the evolution of HDI is the influence exerted by the three dimensions (partial HDIs) in establishing the global index, either regarding its level or its evolution. For the latter, we note in Table 2 that education showed the best evolution in the 11-year period in 9 of the 12 Latin American countries. For only three countries (Argentina, Ecuador and Peru) the income index grew most in the period, and there were no cases in which the health index grew more than the other two indexes. There is a contrast with BRIC countries (excluding Brazil), because in all of them the positive evolution of the income dimension was primarily responsible for the improvement of the HDI, although India's education has contributed equivalently to the overall advance.

Table 2. HDI variation (Global, Education, Health and Income). Selected Latin American countries and BRIC – 2000 to 2011

(%)

Countries	Global HDI	Education	Health	Income
Argentina	6.4	7.3	4.0	8.0
Bolivia	8.3	11.3	8.4	5.6
Brazil	8.0	10.7	6.7	6.4
Chile	7.5	12.4	3.8	6.1
Colombia	8.9	15.6	5.2	6.0
El Salvador	8.9	19.1	4.7	4.1
Ecuador	7.8	8.7	4.2	10.7
Mexico	7.2	15.1	4.8	2.5
Paraguay	8.7	15.6	4.9	5.7
Peru	7.6	4.6	7.0	11.0
Uruguay	6.4	7.9	4.2	7.0
Venezuela	12.0	32.1	3.7	2.8
China	16.8	16.4	4.3	31.8
India	18.7	23.3	9.3	23.9
Russia	9.3	7.0	8.5	12.5
LA 12 average	8.1	13.4	5.1	6.3

Regarding Latin American countries, it is possible that increased social expenditure, especially in education, is contributing to better relative outcomes of this dimension in the HDI. ECLAC's data for a set of 21 Latin American countries indicate an increase of the total social expenditure as a proportion of GDP, from a (weighted) average of 11.3% in 1990-91 to 15% in 1998-99 and 17.9% in 2008-09 (ECLAC, 2012).[6] In these countries, total social expenditure per capita grew 113% in real terms over almost two decades and 50% in the 10 years between 1998 and 2008 (Ibidem). Following social security and welfare expenditure, education expenses were the fastest growing in the period, hiking from 3.1% to 4.2% and finally 4.9% of GDP in the same biennia.

Among the nine Latin American countries that had better relative evolution in the education dimension, Venezuela stands out; there the education index growth exceeded tenfold the variations of the other two indexes. All its remarkable progress in the evolution of global HDI is explained by the evolution of the education HDI, because the other two dimensions, although positive, had the weakest (health) or the second weakest (income) growth among the 12 countries (see Table 2). Also in the cases of Mexico and El Salvador, the improvement of the education dimension was notably higher. Total social expenditure had an outstanding evolution in Venezuela, all of it concentrated in the 10 years between 1998-99 and 2008-09, rising from about 8.5% (equivalent to the 1990-91 level) to 12.5% of the GDP, equivalent to a real per capita expenditure increase of 55% in the same decade (ECLAC, 2012).[7]

When we look at the relative levels of partial HDIs, which express the human development in the health, education and income dimensions compared to the average expressed in the global HDI, we can point out how each one of these dimensions affects this average by either increas-

6 The 21 countries considered in ECLAC's statistics are: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Trinidad and Tobago, Uruguay and Venezuela.

7 It is likely that education expenditure has accounted for most of the increase of social expenditure in the case of Venezuela (with a social expenditure per capita of US$ 768 of 2005 in the biennium 2008-09). The ECLAC report "Social Panorama of Latin America" indicates that, for countries with per a capita social expenditure of less than US$ 1,000, education receives the lion's share of social expenditure (ECLAC, 2012).

ing or decreasing it (see Table 3). For all Latin American countries under review, the health dimension largely contributes to raising the global index, standing at 11-25% above it in 2011 (and from 11 to 29% above it in 2000). So it is no surprise that the health HDI has displayed the lowest positive evolution among the three dimensions in all countries (with the exception of Peru), which set up a movement towards greater balance among the dimensions of human development (as shown in the normalized indexes).

Table 3. Relationship between Global HDI and its component indexes. Selected Latin American countries and BRIC – 2000 and 2011

(Global HDI = 100)

Countries	2000			2011		
	Education	Health	Income	Education	Health	Income
Argentina	100	113	88	101	111	89
Bolivia	110	111	82	113	111	80
Brazil	90	119	94	92	118	92
Chile	95	120	88	99	116	87
Colombia	88	123	92	94	119	89
El Salvador	86	127	91	95	122	87
Ecuador	94	126	84	95	122	86
Mexico	88	119	95	94	117	91
Paraguay	91	129	85	97	125	83
Peru	100	118	85	97	118	87
Uruguay	96	117	89	97	115	89
Venezuela	80	126	99	94	117	91
China	91	137	80	91	123	90
India	79	142	89	82	131	93
Russia	106	103	92	104	102	94
LA 12 average	93	121	89	97	117	88

The evolution of the income dimension was close to that of the global index in almost all countries (except for Venezuela, with a worse development), which kept the absolute level of HDI income below the

global HDI in all of them. In the other three Asian countries, we note that education and income dimensions are below average while health stands above, just as in Latin American countries. In the case of Russia, education is also above average, but differences are small: there is a great balance between dimensions. Regarding the three countries, there was a rapprochement between partial indicators, since the health HDI showed lower growth than the others in the period.

HDI's evolution in the health dimension

As already noted, the health HDI indicator was the component that less evolved in Latin America between 2000 and 2011. In this regard, the average variation of Latin American countries was 5.1% (or 0.5% p.a.), opposed to 13.4% of education, 6.3% of income and 8.1% of the global index (Table 2).

Table 4. Variation of health HDI and position in the LA 12 and world rankings. Selected Latin American countries and BRIC – 2000 and 2011

Countries	Variation (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000	Ranking 2011	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11	LA 12 position	LA 12 position	among 194	
Argentina	4.0	10	0.4	0.4	0.3	4	4	54	54
Bolivia	8.4	1	0.7	0.8	0.7	12	12	137	140
Brazil	6.7	3	0.6	0.6	0.6	9	9	99	85
Chile	3.8	11	0.3	0.5	0.2	1	1	31	36
Colombia	5.2	4	0.5	0.5	0.4	7	8	82	83
El Salvador	4.7	7	0.4	0.4	0.4	11	11	102	107
Ecuador	4.2	9	0.4	0.5	0.3	5	5	60	57
Mexico	4.8	6	0.4	0.4	0.4	3	3	49	44
Paraguay	4.9	5	0.4	0.5	0.4	10	10	101	102
Peru	7.0	2	0.6	0.8	0.5	8	7	92	78
Uruguay	4.2	8	0.4	0.4	0.3	2	2	46	43

Countries	Variation (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000	Ranking 2011	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11	LA 12 position	LA 12 position	among 194	
Venezuela	3.7	12	0.3	0.3	0.4	6	6	66	72
China	4.3	--	0.4	0.3	0.4	--	--	79	86
India	9.3	--	0.8	0.8	0.8	--	--	141	142
Russia	8.5	--	0.7	0.5	1.0	--	--	127	125
LA 12 average	5.1	--	0.5	0.5	0.4	--	--	--	--

Bolivia was the country with the highest growth in the health indicator (8.4%, rising from 0.678 to 0.735). Still, the improvement was not enough to remove it from the last position among the 12 Latin American countries. Among the 194 countries of the world considered for this indicator, Bolivia fell from 137th place in 2000 to 140th in 2011 (Table 4). The country with the highest health index is Chile, which showed a small evolution in the period (increase of 3.8%, just above Venezuela's 3.7% improvement). Brazil has improved its index, which rose from 0.791 to 0.844, but was insufficient to improve its position in Latin America and is ranked 9th in the health category and 85th in the world in 2011, ahead of China, India and Russia. Furthermore, as shown in Table 3, the health dimension increases Brazil's global HDI.

HDI's evolution in the education dimension

Argentina has the highest HDI in the education dimension and since 2000 was already ranked 1st. The relatively low growth of the education index (7.3%), just higher than that of Peru, led to a ranking loss in world terms, falling from 33rd to 38th place among 157 countries (see Table 5). In the education category, Venezuela was the country with the highest evolution, moving up from the 12th to the 7th position among the 12 analyzed countries of Latin America and from the 98th to the 74th position in the world ranking. El Salvador, Paraguay and Colombia had significant increases in the education index , with the greatest variations after

Venezuela. However, the first two countries hold the last positions in the education category in Latin America.

Table 5. Variation of the education HDI and position in the LA 12 and world rankings. Selected Latin American countries and BRIC – 2000 and 2011

Countries	Variation (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000	Ranking 2011	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11	LA 12 position	LA 12 position	among 157	
Argentina	7.3	11	0.6	0.7	0.6	1	1	33	38
Bolivia	11.3	7	1.0	1.3	0.7	4	4	62	54
Brazil	10.7	8	0.9	1.5	0.5	8	10	82	84
Chile	12.4	6	1.1	1.4	0.8	2	2	51	42
Colombia	15.6	4	1.3	1.1	1.5	9	9	88	82
El Salvador	19.1	2	1.6	2.4	0.9	11	12	94	93
Ecuador	8.7	9	0.8	0.7	0.9	6	8	75	77
Mexico	15.1	5	1.3	1.3	1.3	7	5	76	63
Paraguay	15.6	3	1.3	1.7	1.0	10	11	92	91
Peru	4.6	12	0.4	0.2	0.6	5	6	63	71
Uruguay	7.9	10	0.7	0.6	0.7	3	3	52	50
Venezuela	32.1	1	2.6	2.8	2.3	12	7	98	74
China	16.4	--	1.4	1.6	1.2	--	--	93	95
India	23.3	--	1.9	2.8	1.2	--	--	130	123
Russia	7.0	--	0.6	1.0	0.3	--	--	44	46
LA 12 average	13.4	--	1.1	1.3	1.0	--	--	--	--

Despite obtaining a 10.7% (0.9% p.a.) variation over the period (from 0.599 in 2000 to 0.663 in 2011), Brazil was surpassed by Ecuador and Colombia, falling from the 8th to the 10th place among the 12 Latin American countries and from 82nd to 84th among 157 countries of the world. Nevertheless, education was the HDI dimension in which Brazil had the highest variation (see Table 2).

On the one hand, compared with the other BRIC countries, only Argentina (0.806) and Chile (0.797) have a higher education performance than Russia (0.784). On the other hand, no country has a lower performance than that of China (0.623) and India (0.450), even with the substantial improvement of the education indicator in these two countries (16.4% in China and 23.3% in India) (see Table 5).

HDI's evolution in the income dimension

In the income index, the highest growth in Latin America between 2000 and 2011 occurred in Peru, rising from 0.571 to 0.634, leading it to the 7th place among Latin Americans and 80th among 183 countries of the world. Still, this growth was lower than the spectacular growth of China and India and even lower than that of Russia (Table 6).

The income index in Latin America had a higher growth in the second half of the decade than in the first half (0.7% p.a. between 2005 and 2011 compared to 0.4% p.a. between 2000 and 2005), unlike education and health indexes. In this regard, Bolivia and Ecuador are an exception since they performed better at the beginning of the decade. However, Ecuador was the second country with the greatest income index increase, going from 0.560 to 0.620, while Bolivia increased from 0.502 to 0.530, remaining in the last spot among Latin American countries and behind most BRIC, just ahead of India. Brazil recorded an intermediate improvement among Latin American countries (5th largest growth), going from 0.622 to 0.662, remaining in 6th place among the 12 countries in the region but losing positions in the world, dropping from the 69th to the 74th place among 183 countries (see Table 6).

Table 6. Variation of income HDI and position in the LA 12 and world rankings. Selected Latin American countries and BRIC – 2000 and 2011

Countries	Variation (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000	Ranking 2011	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11	LA 12 position	LA 12 position	among 183	
Argentina	8.0	3	0.7	0.2	1.1	3	1	56	53
Bolivia	5.6	9	0.5	1.4	-0.3	12	12	108	117
Brazil	6.4	5	0.6	0.3	0.8	6	6	69	74
Chile	6.1	6	0.5	0.4	0.7	2	2	55	58
Colombia	6.0	7	0.5	0.4	0.6	7	8	78	81
El Salvador	4.1	10	0.4	0.4	0.3	9	10	91	99
Ecuador	10.7	2	0.9	1.2	0.7	10	9	93	90
Mexico	2.5	12	0.2	0.2	0.2	1	3	50	59
Paraguay	5.7	8	0.5	0.1	0.9	11	11	102	110
Peru	11.0	1	1.0	0.5	1.4	8	7	88	80
Uruguay	7.0	4	0.6	-0.1	1.2	4	4	57	60
Venezuela	2.8	11	0.2	0.2	0.3	5	5	59	70
China	31.8	--	2.5	2.6	2.5	--	--	118	92
India	23.9	--	2.0	1.8	2.1	--	--	136	121
Russia	12.5	--	1.1	1.4	0.8	--	--	66	54
LA 12 average	6.3	--	0.6	0.4	0.7	--	--	--	--

Adjusting the global HDI through distributive inequality

As already indicated, the partial indexes and the global HDI express average values of the gross variables for each country. However, in each country, access to income, health and education is more or less differentiated among individuals of the population. Thus, the average number of years of schooling or the expected years of schooling may vary widely among members of the same national population, as occurs with income and life expectancy. To address this limitation of the original indicator, UNDP has developed the concept of inequality-adjusted HDI (IHDI),

which seeks to capture the inequality of the distribution of each dimension among the population.

IHDI measures the inequalities in HDI dimensions by "discounting" the average value of each dimension according to their level of inequality. IHDI is equal to HDI when there is no inequality between people, but falls below HDI in case of inequality. Thus, the IHDI can be interpreted as the actual level of human development (taking into account the inequality), while the HDI can be viewed as a "potential" human development index that could be achieved by each individual in the national community if there were no inequality.

An HDI reduction is noted in all countries when HDI is adjusted for inequality. However, countries differ in the levels of this loss, since the higher the inequality is in the country the greater the loss.[8] In Latin America (12 countries) this loss reaches 24.9% on average (compared to 21.5% for the average of 134 countries). On average, these countries lose 12 positions in the ranking when the HDI is adjusted for inequality (see Table 7). This relatively higher degree of inequality in Latin America reflects existing historical structural trends, despite the relative reduction of inequality and poverty in the last two decades, attributed to the improvement in income distribution, especially labor incomes, as well as the State's redistributive role through cash transfers (ECLAC, 2012).

8 In the IHDI analysis we only considered only the 134 countries for which both indexes are calculated in 2011. The loss in HDI values,resulting from the consideration of inequality, varies between 5.1% and 43.5%, with an average of 21.5%.

Table 7. Relationship between HDI and IHDI and position in rankings (LA12 and world). Selected Latin American countries and BRIC – 2011

Countries	Relative (x 100) IHDI / HDI	Loss / Gain (%)	AL 12 Ranking		World Ranking		Positions
			HDI	IHDI	HDI (134)	IHDI	loss / gain
Argentina	80	-19.6	2	3	34	47	-13
Bolivia	66	-34.1	12	12	75	87	-12
Brazil	72	-27.7	8	8	60	73	-13
Chile	81	-19.0	1	2	32	44	-12
Colombia	67	-32.5	9	11	62	86	-24
El Salvador	73	-26.6	10	10	72	82	-10
Ecuador	74	-25.7	7	7	59	69	-10
Mexico	76	-23.5	4	4	41	56	-15
Paraguay	76	-24.1	11	9	74	78	-4
Peru	77	-23.2	6	5	58	63	-5
Uruguay	84	-16.5	3	1	36	43	-7
Venezuela	73	-26.5	5	6	51	67	-16
China	78	-22.3	--	--	69	70	-1
India	72	-28.3	--	--	94	93	1
Russia	89	-11.3	--	--	46	39	7
LA 12 average	75	-24.9	--	--	--	--	-12

The greater inequality in the distribution of the components of the HDI in Latin America occurs in Bolivia, whose IHDI is 34.1% lower than the HDI without adjustment, implying a 12-spot loss in the ranking of 134 countries. Other highlighted inequalities are observed in Colombia, with a 32.5% loss in the HDI value and a 24-spot decline in the international ranking, and Brazil, with a loss of 27.7% and a 13-spot decline. The lowest loss and thus the best distribution of health, education and income conditions occurs in Uruguay, whose HDI loses only 16.5% of its value after adjustment. Thus, Uruguay becomes the country with the highest human development among the 12, surpassing Chile and Argentina.[9]

9 Yet inequality in Uruguay remains within Latin American standards since it falls seven spots in the international ranking.

On the other hand, China and India have similar levels to those countries when it comes to inequality in the distribution of the HDI dimensions, indicated by losses of 22.3% and 28.3% in the national HDI values, respectively. Russia's situation is different; it has a much more equal distribution, with a loss of only 11.3% and a 7-spot increase in the international ranking.

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Appendix
Original Raw Data

Note: all tables in the text are sourced from Table A-1, or ranking data calculated directly from the site indicated below the table.

Table A - 1. International Human Development Indicators

	Human Development Index (HDI) value		Inequality--adjusted HDI value	Health index		Education index		Income index	
Countries	**2000**	**2011**	**2011**	**2000**	**2011**	**2000**	**2011**	**2000**	**2011**
Argentina	0.749	0.797	0.641	0.848	0.882	0.751	0.806	0.660	0.713
Bolivia	0.612	0.663	0.437	0.678	0.735	0.673	0.749	0.502	0.530
Brazil	0.665	0.718	0.519	0.791	0.844	0.599	0.663	0.622	0.662
Chile	0.749	0.805	0.652	0.898	0.932	0.709	0.797	0.661	0.701
Colombia	0.652	0.710	0.479	0.805	0.847	0.577	0.667	0.597	0.633
El Salvador	0.619	0.674	0.495	0.786	0.823	0.535	0.637	0.562	0.585
Ecuador	0.668	0.720	0.535	0.842	0.877	0.631	0.686	0.560	0.620
Mexico	0.718	0.770	0.589	0.857	0.898	0.631	0.726	0.683	0.700
Paraguay	0.612	0.665	0.505	0.789	0.828	0.556	0.643	0.522	0.552
Peru	0.674	0.725	0.557	0.796	0.852	0.673	0.704	0.571	0.634
Uruguay	0.736	0.783	0.654	0.863	0.899	0.707	0.763	0.654	0.700
Venezuela	0.656	0.735	0.540	0.827	0.858	0.524	0.692	0.651	0.669
China	0.588	0.687	0.534	0.808	0.843	0.535	0.623	0.469	0.618
India	0.461	0.547	0.392	0.656	0.717	0.365	0.450	0.410	0.508
Russia	0.691	0.755	0.670	0.710	0.770	0.733	0.784	0.634	0.713

Accessed: 7/19/2012,7:55 PM from: http://hdr.undp.org

Source

Education index: HDRO calculations

Health index: HDRO calculations

Human Development Index (HDI) value: HDRO calculations based on data from UNDESA (2011), Barro and Lee (2010), UNESCO Institute for Statistics (2011), World Bank (2011a) and IMF (2011).

Income index: HDRO calculations

Inequality-adjusted HDI value: Calculated as the geometric mean of the values in Columns 5, 7 and 9 using the methodology in Technical note 2.