International Observatory of Human Capabilities,
Development and Public Policy

INTERNATIONAL OBSERVATORY OF HUMAN CAPABILITIES, DEVELOPMENT AND PUBLIC POLICY

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Organization of the Collection
Valdemar de Almeida Rodrigues

Summary

LABOUR

SOCIAL SECURITY

HEALTH

EDUCATION

ENVIRONMENT

Presentation

The International Observatory of Human Capabilities (OICH) emerged in 2012 as an extension of the activities of the Observatory of Human Resources in Health of the University of Brasilia. Since the observation of human capabilities, as proposed by Amartya Sen's interpretation, involves the monitoring of numerous economic and social variables, it should be clarified how this initiative relates to the purpose and trajectory of an observatory dedicated to the study of human resources in health.

The Observatory of Human Resources in Health of the University of Brasília incorporates a Latin American network of research that has been operating uninterruptedly since 1999, through technical cooperation and financial assistance of the Pan American Health Organization and the Brazilian Ministry of Health. Despite the term "human resources" has a managerial connotation, the analytical perspective adopted by the network in Brazil has always remained focused on the broader aspects of the study, i.e., the economical and social aspects of the workforce employed in the health sector.

In this sense, the study of human resources has been directed to numerous relevant questions that arise from the perspective of human rights and citizenship. Among such issues, the following should be highlighted:

- The demographic and regional differences in the distribution of the workforce, including internal migration, seeking to assess the degree of **equity of access to health services**;
- The types of employment status, from a perspective of legality and justice of labor relations in both the private and the public sector in order to identify and characterize precarious working conditions, which take place in the **absence of guaranteed labor and social security rights**; and

- The status and trends in the levels of education of the various categories of health professionals, in order to identify the fulfillment of the **expectation of further improvement of the educational qualification of assistants**, especially the members of nursing.

This line of research highlights not only the economic and social aspects of the health workforce, but also aspects of labor justice. This specific approach stimulated its researchers to critically discuss the various theories and interpretations of the **human dimension** of development. Among these, it is worth mentioning three aspects that are present in the international debate on development:

1) The theory of human capital as a source of competitive advantage for companies and countries (Schultz);
2) The interpretation of the role of technological innovation and highly qualified human resources required for high technology companies, members of the modern knowledge-based economy (based on Schumpeter); and
3) The interpretation about the human capabilities, which make health, education and social security indispensable conditions to ensure people's freedom to choose what they want to do and be (this being the ultimate goal of development, according to Amartya Sen).

Of these three theories, which have in common the main feature of the "human element" in development, only Amartya Sen's theory has a clearly defined origin in a concern to prevent serious personal deprivations and promote social justice. Sen never theorized about health and education as if they were mere tools of survival and employment, since, as a philosopher and not just an economist, he is not only concerned on how to guarantee the supply of a healthy and well qualified workforce to capitalist firms. Indeed, Sen has in mind, above all, the need to promote human capabilities as foundations that enable the achievement of development goals, such as freedom, that need to express themselves in the daily life of people through a variety of lifestyles.

Sen's perspective on the issue of people in development is geared towards the promotion of justice, in a sense that is attuned with the history of the research in human resources in health, since researchers in this area are also keen to overcome the utilitarian and managerialist view of the concept of resource. Therefore, it is understandable that an observatory of human resources in health decides to walk towards studying human capabilities internationally and beyond the area of health.

The first edition of reports of the International Observatory of Human Capabilities, Development and Public Policy (OICH) is largely interested in highlighting trends observable in each thematic area (health, education, labor, social security, etc.) for selected countries. Since this is a first approach to the systematic study of public policies related to the promotion of human capabilities, descriptive orientation was inevitable and even desirable. Only in reports on environment, certain issues could be addressed, especially contentious or controversial, about the negative or harmful effects of development on an international scale.

Since the concept of human capabilities refers to all the people of a country and not only the workers in the formal economy or the high-technology industries, the discussion of the study results cannot be limited to show that the citizens' material conditions of live have improved and that the economy has become, for example, more productive, diverse and rich. The prospect of justice implicated in the theory of human capabilities is answered correctly only when there are signs that the economic and social development is occurring with the creation of a plurality of lifestyles freely chosen by the people.

In this context, one must ask, in a very relevant way, if the capitalist development, such that has occurred in Latin America and other continents, does not inevitably impose certain standardized and controlled lifestyles in society, within which there is no unveil of the freedom horizon promised by Sen's theory. Often it seems that this freedom horizon is definitely made unviable due to the development style imposed unilaterally by the State, a phenomenon that can occur in both contexts of authoritarian as democratic regimes.

Perhaps this is the most prominent issue in the theoretical discussion by an international observatory of human capabilities. We must rec-

ognize that this issue has not been properly asked or answered in the first round of observations, but so insightful stands as a challenge for future developments of this initiative.

In producing its thematic reports, the observatory had over a dozen external collaborators who acted independently of each other. The series of annual data for each subject, compiled by international organizations, with a focus on the 2000s, served as a suggestive basis for the analysis. Thus, there wasn't a predefinition of issues or trends considered relevant to the analysis. The collaborators felt free to develop their reports based on that data or other they deemed most relevant. This method of working in network of collaborators was very productive and an innovation in relation to the operational scheme of observatories, based on small research teams, and with a more or less permanent status. Thus, in the first round of observation and reports that make up this collection, the method of the network allowed the following areas to be addressed: 1) economic and social context, 2) human development, 3) inequality and poverty; 4) work and welfare; and 5) health, education and environment.

However, even if maintaining this network conformation, a further round of the observatory should, preferably, start from an interpretive framework about the global macroeconomic context, without abandoning, however, the examination of the economic and social indicators. So, it would have as initial reference an explicit critical understanding of the current global crisis and its possible consequences for public policy and the guarantee of social rights.

Several scholars of the world economy, among them Immanuel Wallerstein, have stated that the crisis that began in 2007 is much more serious and profound than one may think. It is not a mere temporary and cyclical inflection of capitalism, but assumes the character of a fork on a planetary scale, with the potential to cause a world economic order that, for all the people, can be even more cruel or more just than the current, depending on the decisions that, until now, are imponderables.

For the entirety of Latin American economies, it is clear now that the process called development remains a very vulnerable and subordinate insertion of Latin American countries into the world economy, based on the export of commodities. But even such alternative of subordinate

insertion in relation to the central axis formed by the United States, China and the European Union can no longer work in the favorable forms of the 2000s. What is threatened currently is not GDP growth at high rates, but rather the optimistic outlook of integrated development, economic and social, which encouraged the analysts of this decade and is evident in reports gathered here. In many Latin American countries, despite the more or less marked decrease in the growth rate of the economy, domestic labor market and consumption remains warm and dynamic, and this condition may persist for some time, but not indefinitely, if there is no solution to the impasse of world capitalism.

We must, therefore, perform the demand in the short term, a careful evaluation of the consequences of the current crisis on public investment in social policies, especially in health, education, social security and income distribution.

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Human capabilities, development and public policies

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Human capabilities, development and public policies

Roberto Passos Nogueira

Since its foundation in the 1990s, at the initiative of the Pan American Health Organization (PAHO), the Latin American Network of Observatories of Human Resources in Health has focused mainly on the description and analysis of issues related to the labor market and the educational background of professionals who provide health services in the public sector and, in a complementary way, in the private sector. Some topics of particular relevance to public policies have been highlighted in studies published by the Network: the unequal distribution within the national territory, the precariousness of employment contracts, the high rate of turnover of professionals in the workplace, the internal and international migration of doctors and nurses, the adaptation of educational curricula to the priorities of health care policies, etc.

In recent years, the little success achieved by State policies to generate an adequate number of jobs and secure strategic positions to professionals in the health system of each country has been a common point of discussion in several countries. It has been suggested that the State lacks ability to attract, organize and retain human resources in these key positions. This deficiency is apparently less related to problems of a fiscal or a funding system nature than with the bureaucratic capacity of the State. Therefore, it is not an issue that only regards the public health system, but rather the loss of effectiveness of the State actions as a whole.

In different countries and according to different sectors of activity, the State has not found suitable solutions to provide greater administrative efficiency to the management of its human resources, which necessarily involves several aspects such as valuing the workforce, creating stimu-

lus to retain health professionals, improving career structure and recruit-
ment processes, and so on. There are other political, social and economic
constraints linked to this State's inability in Latin America which are not
yet well understood, but certainly related to the overly long period during
which public policy focused more on strengthening the private sector than
on the State's regulatory and service delivery capacity.

However, a new scenario of growth and income distribution poli-
cies emerges in the 2000s. In many Latin American countries, a virtuous
combination between economic growth and reduction of social inequali-
ties has been observed, as the titles of some recent articles on the subject
announce (see bibliography attached). The social and economic achie-
vements reported in these articles result from the combination of gross
domestic product (GDP) per capita growth and certain well-conducted
income transfer policies as part of the poverty eradication program. Howe-
ver, these achievements are clearly limited due to the State's inability, but
also the lack of a long term development strategy, something that should
be on the political agenda of many governments to allow the next step of
this journey.

The aforementioned State's inability becomes more severe when
taking into consideration the circumstances in which Latin America is
entering a truly favorable economic, social and international conjuncture,
compared to the past two decades. Due to these auspicious circumstan-
ces, it is expected that the development strategy will be on the agenda of
national governments.

It is worth mentioning in this case that the authors of the "new
developmentalism" stress that the capability of the State is decisive in
itself, but it needs to be combined with an institutional base acting: 1) on
relationships with market players; 2) along civil society participation chan-
nels; 3) towards strengthening the "human capability", as advocated by
the human capability approach of Amartya Sen. According to this appro-
ach, health, education and social participation enjoy special prominence
not only as preconditions of the development process, but also as its ulti-
mate goals, since it strengthens the exercise of the citizens' freedoms as a
possibility of freely choosing what to be, to have and if to take part in the
civil voicing of preferences.

That is why the new features and possibilities of the socioeconomic context in Latin American require a broadening observation focus by the Network Observatory of Human Resources throughout Latin America. Indeed, the observation of objects can no longer be restricted to human health and its relationship with the sector policies. The objectives of the analysis proposed here seek to meet the needs of both the State's capability and the actions undertaken in each country to promote human development, i.e., conducting studies focused on specific topics such as health, education, labor, social security, environment and socioeconomic conditions in general in order to diagnose the human capability progress in different Latin American countries.

Based on Amartya Sen's idea of justice, the concept of human capability is currently a theoretical assumption to various mainstream development theories in Brazil and other Latin American countries. According to this philosopher-economist, human capability is both the purposes and key conditions to development, where it is important that public policies enhance the way the aforementioned conditions are part of not only the means but especially the ends pursued by national development. Good health and education conditions and the citizen's engagement in public debates are goals in themselves, because they broaden people's freedom so they can choose how they want to live. But also they represent skills that favor productivity and creativity and therefore become development inducing factors.

It is well known that Sen considers essential to remove the variation measures in GDP from its position of centrality in developmental assessments. The real purpose of development should be to increase personal freedoms, so that each can achieve the life goals they have reason to value. This is the true meaning of his "development as freedom" proposal, based on a liberal matrix connected with the thought from Adam Smith.

According to the review of social data from several countries, Sen stresses in his studies that the progress made on health and education indicators have enabled certain economic reforms to achieve better results for the economy in a subsequent period. Thus, based on the finding that education and healthcare can be productive enough to increase economic growth, the argument to give greater emphasis to these social arrange-

ments in underdeveloped economies gains strength, without having to wait for the prior enrichment of such societies (SEN, 1999).

New developmentalism has emphasized not only this prerequisite, associated with the outcomes of policies commonly known as "social", but also the innovative dimension of the State's institutional resources, to the extent that these elements are capable of setting unprecedented directions in development from the historical and cultural context of each country, thus excluding the possibility of imitating the political-economic path followed by other countries.

The two assumptions mentioned, the State's capability and human capabilities, are articulated as follows by Peter Evans, one of the most prominent theorists of the new developmentalism:

> (...) the 21st century development will depend on generating intangible assets (ideas, skills, and networks) rather than on stimulating investment in machinery and physical assets oriented to the production of tangible goods. This makes investment in human capabilities (which include what is traditionally known as "human capital") more economically critical. At the same time, new development theories assume that economic growth depends on political institutions and the capacity to set collective goals. The capability approach sets out the political argument most firmly, arguing that only public interchange and open deliberation can effectively define development goals and elaborate the means for attaining them (EVANS, 2008, p. 3).

Regarding the human capabilities included in these assumptions, two critical remarks are relevant and will be presented here very briefly and preliminarily. The first concerns to the human preconditions of the State's capability and the second refers to certain characteristics of the accelerated growth process accompanying development.

The argument on the first issue can be formulated as follows: the concept of human capabilities, which Evans and Sen have as focus and ultimate goal of development, cannot be restricted to the field of citizenship, but must immediately be applied to State agents. However, this is not just an educational or technical qualification of bureaucracy in order to deal with the administrative procedures of development projects. It is necessary to emphasize that State agents must also be endowed with skills

to face "public debate and honest deliberation". If the State consists only of a technically qualified/well prepared bureaucracy but lacking such skills of political and citizen nature, it is unlikely that its agents can adequately participate in discussions with representatives from the civil society and business community about the directions and the development process.

Such qualities could be required of the bureaucracy in general, but maybe it's enough being narrowed to a fraction of State agents raised to the status of managers and directors. But surely, the more these skills are spread throughout the state bureaucracy, the better the outcome for the presupposed process of "participatory development". The need for a Neo--Weberian bureaucracy which would stand out only for its technical and educational abilities seems to be clearly insufficient when compared to the final outcome coveted by new developmentalism. In Brazil, for example, it is not plausible to redevelop a State technocracy similar to that which coordinated the projects of the "Brazilian Miracle" in the 1970s.

The inevitable conclusion is that the goal of promoting debate and public deliberation skills should apply to both State agents as to citizenship in general, assuming, of course, that in this context, State agents nurture Republican interests. Therefore, it is appropriate to ask how Brazil will create sufficient objective and subjective conditions so that development policies begin to be implemented in compliance with the assumptions stated here, that is, based on the adequate capacity of the State to discuss and deliberate with society.

These are examples that make it imperative to establish a "capital regulation" by the public policies for development, in accordance with certain concepts originally formulated by Karl Polanyi, whereby the boundaries of reproduction of a capitalist economy must be set by State measures, assuming that work is not a true commodity. In other words, the regulation of capital is not a mere political alternative, but rather a requirement for the protection of human capabilities, not only as workforce, but in all its diversity. In line with this requirement, it is worth emphasizing the need to create a special interpretive framework for the promotion and protection of human capabilities within development policies in Latin American countries that complies with the valuable concepts of justice elucidated by Amartya Sen.

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Latin America in the first decade of the XXI century: the "China effect" and growth with inclusion[1]

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LATIN AMERICA IN THE FIRST DECADE OF THE XXI CENTURY: THE "CHINA EFFECT" AND GROWTH WITH INCLUSION

EDUARDO COSTA PINTO

1. INTRODUCTION

Latin America and the Caribbean, after two decades of low growth and various economic and political crises, succeeded, in the first decade of the XXI century, to reduce significantly its external vulnerability, to sustain high growth rates of the Gross Domestic Product (GDP) even after the profound 2008 international crisis, and to reduce income inequality and extreme poverty.

The configuration of this new pattern of Latin American growth in the 2000s, from 2002, was made possible by a number of external and internal factors to the region. Externally, China's rise has caused structural economic changes in the world economy that had positive impacts for many Latin American countries, especially the South Americans. Domestically, the failure of the neoliberal model to fulfill its promises (growth, stability and income distribution) in the 1990s led to the electoral victory of many rulers of the far left political spectrum, who adopted policies of effective demand, in particular, those of cash transfer.

Thus, this report aims to present the outlines of the new growth pattern (in its economic and social dimensions) of Latin American and the Caribbean in the first decade of the XXI century, seeking, on the one hand, to identify what were the impacts (positive and negative) of the transformations of the world economy – under the "China effect" – in the countries of the region, and, on the other hand, to show how some countries have managed to take advantage of the lower external vulnerability to grow, distribute income and reduce poverty.

Besides this introduction, this report is divided into four other sections. In the second, there are the outlines of Latin America's demographic (population, age structure and urbanization) and economic evolution (GDP and GDP per capita). Section 3 analyzes the main explanatory factors (internal and external) for the configuration of the new economic dynamics of the region in the 2000s. Also, section 3 attempts to present, in general, the evolution of income distribution and extreme poverty reduction in Latin America. Finally, section 4 tries to sew up some ideas as a means of conclusion.

The data used were obtained at the World Bank's (WB) and the Economic Commission for Latin America and the Caribbean's database. This report will analyze aggregated information on Latin America and, in a disaggregated way, data of 10 selected countries, that is, the largest economies in the region in 2010 (Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Peru, Dominican Republic and Venezuela).

2. Demographic and economic dimensions of Latin America

The Latin American population in 2010 was 590 million people, which represented 8.6% of the world population. Of this total population, approximately 87% were living in the 10 selected countries (Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Peru, Dominican Republic and Venezuela); two of these countries (Brazil: 33.1%; and Mexico: 19%) had 52.1% of the total population. Among the five-year periods of 1995-00 and 2005-10, the average growth rate of the population of the region declined from 1.5 per 100 inhabitants to 1.2 per 100 inhabitants (a 20% decrease). This was also observed for the 10 selected countries. It should be noted that Argentina, Chile and Cuba were the countries that had the lowest population growth rates; actually, these three countries have had, since the early 1980s, rates below 2.0 per 100 inhabitants (Table A.1, annex).

The slowdown in population growth rates in the region and of the 10 selected countries, a result of their reduced fertility rates – given the reduction in infant mortality –, has been a trend over the past three

decades that probably will repeat in the coming decades. This reduction in rates has caused significant demographic changes, which necessarily will involve reordering of public policy priorities to be adopted by countries of the region.

Between 2000 and 2010, the proportion of the population aged 0-14 in Latin America decreased from 31.8% to 27.9%, while the population proportions for cohorts 15-64 and 65 and over rose from 62.3% to 65.2% and 5.8% to 6.9%, respectively. This demographic profile and trend were also observed for the group of 10 selected countries, with some minor differences associated with greater participation of the population aged 65 years and over in Argentina and Cuba, because these two countries were the first to make the demographic transition when compared to the other countries in the region (Table A.1, annex).

 This regional demographic dynamics, which combines a reduction of the younger age group and an increase of the potentially productive age group (15-64 years) and older (65 years and over), will cause for the coming decades: i) a lower demand for primary education and greater pressure for high schools and universities; ii) the need to expand public services demanded by senior citizens, such as welfare, health and leisure; and iii) a greater need to create new jobs in the labor market.

The largest growth of the potentially productive age segment (15-64 years) in relation to the expansion of the economically dependent population (0-14 years + 60 years and over) generated a reduction in the dependency ratio[1] of the region from 60.4 to 53.4 from 2000 to 2010; a trend also observed in the 10 selected countries. This temporary situation (which shall remain until 2030, according to ECLAC's population projections) is called demographic bonus, and so it can really be exploited, and it is necessary that much of the potentially productive population is employed, generating more wealth in a conjuncture in which the proportion of dependent population is smaller.

Another important population factor of the 2000s in the region and selected countries was the increased population proportion living in cit-

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1   Ratio of the population aged 0-14 years and 65 years and over and the population aged 15-64 years. This measures the relative share of the potentially inactive population, which must be supported by the potentially productive share of the population.

ies (urbanization rate). Between 2000 and 2010, regional urbanization rate expanded from 75.5% to 79.6%. Ecuador and the Dominican Republic were the countries, among the selected, which showed the highest growth rates of urbanization.

Economically, wealth (measured by Gross Domestic Product – GDP) produced in Latin America and the Caribbean in 2010 was approximately US$ 4,922 billion, equivalent to 7.8% of all wealth generated in the world. The largest 10 economies in the region produced together 94.1% of this wealth, where Brazil and Mexico accounted for 43.5% and 21%, respectively, of the region's GDP (Table A.2, annex).

This wealth creation accelerated in the 2000s in most countries of Latin America and the Caribbean, especially the South Americans. GDP expanded by 3.4% per year, on average, between 2000 and 2010, in the region, even with the emergence of the 2008 international crisis. This rate was even higher at the peak of the expansion cycle of the world economy between 2003 and 2008, when it expanded by 6.4%. In 2009, the region's GDP declined 2% due to the effects of the crisis, but started to recover in 2010, when it increased 5.9% (Table A.2, annex).

The highest rates of economic growth in Latin America, between 2000 and 2010, were obtained by the South American countries. Of the selected countries of this subregion, Argentina, Brazil, Colombia, Ecuador, Peru and Venezuela had a GDP growth of 4.1%, 3.7%, 3.8%, 4%, 4.4%, 5.5% and 3.5%, respectively. The negative highlight was Mexico's economy, which expanded only 2.3%. This low Mexican dynamism caused a reduction in its share of regional GDP from 29.9% in 2000 to 21% in 2010. In addition to Mexico, other countries from Latin America and the Caribbean (Costa Rica, Guatemala, Jamaica, Honduras, Nicaragua, etc.), which are not part of the selected countries, had growth rates very similar or smaller than those observed for Mexican economy (Table A.2, annex).

The combination of greater economic expansion and population growth rates reduction between 2000 and 2010 involved significant GDP per capita expansion in Latin America, which rose from US$ 4,124 to US$ 8,404 (per annum average growth of 10.4%). In 2010, the countries which had the highest levels of GDP per capita were Chile (US$ 11,874), Brazil (US$ 10,962), Mexico (US$ 9,327) and Argentina (US$ 9,089), where the

first two registered GDP per capita growth rates between 2000 and 2010 (of 14.2% and 19.6%, on an annual average, respectively), while Mexico and Argentina showed lower expansion growth rates (Table A.2, annex).

3. LATIN AMERICA'S MACROECONOMIC DYNAMICS AND THE "CHINA EFFECT": REDUCTION OF EXTERNAL VULNERABILITY AND INCREASE OF GROWTH RATES

Latin America's economic expansion in the 2000s was driven (directly and indirectly) by structural changes in the world economy stemming from China's rise, which began to act as a locomotive for global growth. The expansion of 10% per year, on average, of the Chinese GDP in the last 30 years led China to the condition of the world's second largest economy, "new factory" of the world, the world's largest exporter and second largest importer in the world, behind only the United States, working as a double pole in the world economy.

Medeiros (2006) made very clear this new role played by China. On one side, it appears as the world's main producer of manufactured goods, especially Information Technology Products and consumer durable and nondurable goods, becoming a net exporter to the US and Japan. On the other side, emerges as an important destination for the world production of machinery, Asian and German equipment and high technology products and Latin American and African raw materials (oil, minerals, agricultural products, etc.). With this, China became a net importer of many Asian countries and the main destination for Latin American commodities exports.

The new role played by China in the international economy has led to significant structural transformations, which, according to Castro (2011), Pinto (2011b) and Pinto and Balanco (2012), can be listed in four central points:

- Elevation and maintenance of commodities international prices as a result of the Chinese demand (direct and indirect effects) and high production costs of these products;

- Stabilization or low growth of the price level of manufactured goods because of competitive pressure from China's industrial output, which combines low wages, economies of scale and scope and new forms of organization and management of the production – frugal technology, modular production, etc.;
- Sustenance of favorable terms of trade for developing countries, especially African and Latin American countries that export commodities to China. This, in turn, relaxes the external constraint that those countries face. This condition arises from the two previous ones; and
- Global expansion of mass consumption due to the change in relative price between manufactures and wages, which has allowed access to industrial products to segments of the world population who hitherto lived on a subsistence condition. This condition results from the three previous trends.

These global economic transformations had positive effects in many Latin American economies, particularly in the field of external accounts, which always functioned as the region's Achilles' heel. The significant surplus in the balance of payments between 2000 and 2010 (US$ 432.2 billion accumulated) enabled the region's governments to accumulate reserves (which increased from US$ 162.7 in 2000 to US$ 651.4 in 2010) and consequently reduce its external vulnerability. This significant growth of international reserves was observed in the 10 selected countries[2] (Tables A.3 and A.4, annex).

It is possible to identify to positive and distinct dynamics of the external sector in Latin American, namely: i) between 2003 and 2007, when trade surpluses were higher than the region's structural deficits in services and income account, providing current account surpluses (see Tables A3 and A.4, annex); and ii) between 2008 and 2010, when the sur-

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2   Between 2000 and 2010, the international reverses of Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Peru, Dominican Republic and Venezuela grew from US$ 25.5 to US$ 51.7 billion; from US$ 33.4 to US$ 285.9 billion; from US$ 15.2 to US$ 27.6 billion; from US$ 9.1 to US$ 27.8 billion; from US$ 1.2 to US$ 2.7 billion; from US$ 35.6 to US$ 115.5 billion; from US$ 8.9 to US$ 43.2 billion; from US$ 0.6 to US$ 4.2 billion; from US$ 16.1 to US$ 29.5 billion; respectively (Table A.4, annex).

pluses in the capital and financial account were the major drivers of the positive external accounts (Table A.4, annex). This external improvement of the region was driven by the "China effect" (rising international commodities prices) and, more recently (post-2008 crisis), by the expansion of international liquidity, resulting, mainly, from expansionary monetary policies of the United States.

In this sense, the "China effect" generated between 2000 and 2010 the expansion of the quantum exported by Latin American countries (4% in the annual average for the entire region)[3] and the impressive increase on the price of most important commodities (especially oil, gas, minerals and food) exported by the region (8% per year on average)[4]. These two results led to an accelerated growth of export rates by value and a significant improvement in terms of trade in the region (3% in annual average)[5], reducing, therefore, problems of external constraints to the growth of some countries in the region. In addition, for some countries, depending on their internal production structure, increasing exports functioned as an important component of aggregate demand (FIORI, 2006, 2011; PINTO; BALANCO, 2012). The improvement in the terms of trade represented a macroeconomic bonus to the region, enabling growth without generating serious external and internal imbalances.

Besides increasing exports, rising commodities prices exported by Latin Americans led to an increase in foreign direct investment in the region (US$ 56 billion in 2003 to US$ 113 billion in 2010), intended much

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3   The highest average annual growth rates of exported quantum were observed in South American countries: 7% in Argentina; 7% in Brazil; 5% in Chile; 6% in Colombia; 10% in Ecuador; and 9 % in Peru; with the exception of Venezuela, which fell by 3% in the period. Moreover, the Central American countries of the region had smaller increases in export volume. In Mexico, there was a growth of 3%, while the Dominican Republic had a decreased of 1% on average in the period mentioned.

4   The highest annual expansion rates of unit value index of exports were seen in South American countries: 5% in Argentina; 10% in Brazil; 15% in Chile; 8% in Colombia; 7% in Ecuador; 17% in Peru; and 18% in Venezuela; other countries in the region had lower growth rates, such as: Mexico (4%); Guatemala (5%); and the Dominican Republic (3%).

5   Between 2000 and 2010, most South American countries achieve growth equal or superior to the quite positive annual average of the region's terms of trade (3%) in the period: Argentina 3%; Brazil 3%; Chile 10%; Colombia 3%; Peru 5%; and Venezuela 12%. Moreover, the Central American countries of the region had a smaller or even negative evolution of the terms of trade in the period (Guatemala 0%; Mexico 1%; Dominican Republic 0%).

to the production of raw materials (resource-seeking), such as oil, gas, mining and agriculture (Table A.4, annex).

The reduction of external vulnerability associated with the strengthening of the fiscal capacity of the region allowed many Latin American countries to adopt expansionary fiscal policies, focusing on major public investments in infrastructure and increased spending on massive social policies of income transfer, which yielded high rates of GDP growth hinged on reducing income inequality and extreme poverty.

This Latin American socioeconomic dynamics has increased in an accelerated way the Chinese economic influence (trade, direct investment and credit) in the region, while reduced the economic influence of the United States, especially in the South American countries. Between 2000 and 2010 there was, on the one hand, a significant increase in the participation of the region's exports destined for China (from 1.1% to 10.7%), and, on the other hand, a reduction in the share of exports destined to the United States (from 58.6% to 36.9%) (Table A.3, annex). It should be noted that the U.S. participation as an export destination in the region is still very high, but it is heavily concentrated in Mexican exports. This same trend was observed for the origin of the imports of the region: a strong growth in imports of Chinese products, especially manufactures, and a reduction of imports of U.S. origin.

Besides the greater commercial connection between China and South America, China has also been increasing the destination of the Foreign Direct Investment (FDI) to Latin America, especially to Argentina, Venezuela, Brazil and Peru. The Chinese primordial interest has been focused on natural resources and energy (oil, copper and iron) to meet its domestic demand, but also has included investments in assembling manufacturers, telecommunications and textiles.

China's growing presence in Latin America generated differential impacts (negative or positive) on certain groups of countries in the region, according to Barbosa (2011). The first group, formed by countries such as Chile and Peru, is only impacted positively because it exports commodities (demanded by China) and does not suffer competitive pressure from Chinese manufacturers, as they do not have a complex industrial structure. The second group of countries, such as Argentina, Brazil and Colombia,

faces a more complex situation, because it is benefited from the commodity lottery; however, is negatively impacted by the competitive pressure of China's manufacturers, which increased even more after the international crisis because Chinese exports were directed to the region with the drop in consumption in the United States and Europe. The third group is formed by countries (Central America and Mexico) that have no exportable commodities to China and suffer strong competitive pressure from Chinese exports. Mexico is the paradigmatic case of this process, because it"has all its productive structure focused in the United States, precisely in those segments where China proves to be more competitive"(BARBOSA, 2011, p. 287).

Domestically, the electoral victories of many rulers in the region, located on the political spectrum to the left, led to the adoption of effective demand policies, grounded in infrastructure investment and income transfer policies. This "left-wing inflection" in the region was due to the failure of the neoliberal model to fulfill its promises of generating economic growth with stability and income distribution in the 1990s (FIORI, 2006, 2011; PINTO; BALANCO, 2007, 2012).

As these new rulers were being elected and began to question the neoliberal policies of the Washington Consensus, the United States began to face problems in its intervention capacity in the region by losing allies with this left-wing movement in the region. This situation was further boosted after the U.S. supported the failed military coup of 2002 in Venezuela; the emptying of the Free Trade Area of the Americas (FTAA), organized by Brazil and Argentina, which was shelved during the Summit of the Americas in Mar del Plata in 2001; and the Argentine breaking with the IMF in 2003 (FIORI, 2006, 2011). This process generated a passive and distanced positioning of the United States regarding regional issues, with the exception of the countries and regions (Mexico, Central America and the Caribbean) that are part of its more immediate geopolitical "security zone".

This new Latin America context highlights the increased economic margin for maneuver in relation to the United States of some countries in the region, notably the South Americans, coupled to the China dynamic. The continuity of this process depends now (after the crisis) of supporting

the expansion rates of growth of China's GDP. Keeping this scenario will have short or medium term positive impacts for Latin American countries, which rely on the "commodity lottery" because it provides a cyclical reduction in external vulnerability, an increase in aggregate demand via exports and a rise of the government margin for maneuver to implement policies of effective demand (investment in infrastructure and income transfer). Moreover, this dynamic tends to lead to increased external vulnerability of long-term, since it creates an attraction force that "pulls" the region to the reprimarization of its export basket and the reduction of its manufacturing dynamics (PINTO, 2011a; PINTO; BALANCO, 2012).

4. THE EVOLUTION OF INCOME DISTRIBUTION AND EXTREME POVERTY

The tax and social policies adopted by various countries in the region in the 2000s, performed by increasing non social (investment in infrastructure) and social (major programs against poverty and strengthening social protection) public spending, could stimulate GDP growth with significant improvements in social conditions of the region (ECLAC, 2012).

The new Latin American pattern of growth provided a trajectory of GDP growth with improvement in income distribution, a fact uncommon in the history of the region. Between 1999 and 2010, the income of the richest 10% compared to the poorest 10% fell in the 10 selected countries, namely: i) from 34 to 22.1 times in Argentina; from 81.7 to 55.8 times in Brazil; from 34.6 to 20 times in Chile; from 134 to 59.2 in Colombia; from 89.1 to 28.4 times in Ecuador; from 26.7 to 21.4 in Mexico; from 50.5 to 26 in Peru; from 33.1 to 20.1% in the Dominican Republic; and from 32.7 to 27.6 in Venezuela (Table A.5, annex).

Despite this improvement, the region still showed in 2010 high levels of concentration, where the richest 10% of the population received 32% of the total income, while the poorest 40% receive only 15% (ECLAC, 2010). In 2010, the richest 10% received in Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, the Dominican Republic and Venezuela, respectively, 33.3%, 42.9%, 42.8%, 45%, 38.3%, 36.8%, 38.7% and 33.2% of the total income (Table A.5, annex).

Besides reducing inequality, the socioeconomic dynamics also caused a significant reduction in poverty (from 43.9% to 31% of the population between 2002 and 2010) and extreme poverty (from 19.3% to 12.1% of the population between 2002 and 2010) (Table 1).

Table 1. **Latin America: people living in poverty and extreme poverty in the early and late 2000s**

	Population proportion (%)						Population (per thousand)					
	Early 2000s			Late 2000s			Early 2000s			Late 2000s		
	Year	Pov.	Indig.	Year	Pov.	Indig.	Year	Pov.	Indig.	Year	Pov.	Indig.
Argentina	2004	34.9	14.9	2010	8.6	2.8	2004	13,369	5,708	2010	3,472	1,130
Brazil	2001	37.5	13.2	2009	24.9	7.0	2001	66,426	23,382	2009	48,174	13,543
Chile	2000	20.2	5.6	2009	11.5	3.6	2000	3,122	866	2009	1,954	612
Colombia	2002	49.7	17.8	2010	37.3	12.3	2002	20,483	7,336	2010	17,325	5,713
Ecuador	2002	49.0	19.4	2010	37.1	14.2	2002	6,276	2,485	2010	5,376	2,058
Mexico	2002	39.4	12.6	2010	36.3	13.3	2002	40,208	12,858	2010	40,788	14,944
Peru	2001	54.7	24.4	2010	31.3	9.8	2001	14,433	6,438	2010	9,162	2,869
Dominican Rep.	2002	47.1	20.7	2010	41.4	20.9	2002	4,165	1,831	2010	4,101	2,071
Venezuela	2002	48.6	22.2	2010	27.8	10.7	2002	12,310	5,623	2010	8,073	3,107
L. A. and Caribbean	2002	43.9	19.3	2010	31.0	12.1	2002	221,354	97,315	2010	172,405	67,293

Source: ECLAC.

This result represented the withdrawal of about 49 million people out of poverty and 30 million out of extreme poverty. The proportion of poor also fell significantly in the selected countries, namely: i) from 34.9% to 8.6% in Argentina; from 37.5% to 24.9% in Brazil; from 20.2% to 11.5% in Chile; from 49.7% to 37.3% in Colombia; from 49% to 37.1% in Ecuador; from 39.45 to 36.3% in Mexico; from 54.7% to 31.7% in Peru; from 47.1% to 41.4% in the Dominican Republic; and from 43.9% to 31% in Venezuela (Table 1). It is noteworthy that these poverty rates are the lowest in the last three decades.

5. Conclusion

The economic and social evolution of Latin America in the first decade of the XXI century exposed in this report showed that economic growth in the region worked as an important element to improve people's quality of life, since the HDI and the income distribution and poverty indicators in the region showed improvement.

These improvements were only achieved due to the adoption of fiscal and social policies which increased non social and social public spending in the region. The choice for this type of policy was made possible by the left-wing inflection and international economic transformations, associated with the rise of China.

In general, we found that the greatest connection with China worked for a group of Latin American countries, notably the South Americans that export commodities, as an important driver of its recent economic growth. For another group of countries in the region, more connected to the United States economy (formed by Mexico and countries from Central America and the Caribbean), China's growing presence generated negative effects, because they have no exportable commodities to China and are negatively impacted by the competitive pressure of Chinese manufacturers.

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ANNEX

Table A.1. Population and demography: Latin America

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Population (per thousand)	Argentina	36,906	37,261	37,612	37,959	38,306	38,652	38,997	39,339	39,682	40,025	40,370
	Brazil	174,506	177,136	179,581	181,875	184,052	186,146	188	189,996	191,764	193,471	195,153
	Chile	15,455	15,638	15,818	15,995	16,168	16,339	16,507	16,672	16,834	16,993	17,149
	Colombia	39,900	40,556	41,214	41,873	42,531	43,187	43,842	44,497	45,150	45,801	46,448
	Cuba	11,139	11,190	11,227	11,255	11,276	11,293	11,304	11,307	11,305	11,301	11,298
	Ecuador	12,371	12,590	12,808	13,025	13,241	13,455	13,666	13,876	14,084	14,289	14,490
	Mexico	99,530	100,775	102,050	103,344	104,643	105,934	107,227	108,529	109,827	111,110	112,364
	Peru	26,004	26,386	26,741	27,077	27,403	27,728	28,045	28,350	28,650	28,954	29,272
	Dominican Rep.	8,575	8,709	8,843	8,978	9,113	9,246	9,380	9,513	9,645	9,777	9,907
	Venezuela	24,408	24,867	25,330	25,796	26,262	26,726	27,190	27,656	28,120	28,582	29,039
	Total (10 biggest)	448,795	455,107	461,224	467,176	472,993	478,705	296,345	489,734	495,061	500,303	505,490
	Latin America and the Caribbean	521,429	528,823	536,071	543,179	550,163	557,038	563,796	570,442	577,011	583,547	590,082

Variable	Countries and Region	1995-00	2000-05	2005-10	2010-15
Rate and total growth of the population per quinquennium (%)	Argentina	1.2	0.9	0.9	0.9
	Brazil	1.5	1.3	1.0	0.8
	Chile	1.4	1.1	1.0	0.8
	Colombia	1.7	1.6	1.5	1.3
	Cuba	0.4	0.3	0.0	0.0
	Ecuador	1.6	1.7	1.5	1.3
	Mexico	1.7	1.3	1.2	1.0
	Peru	1.7	1.3	1.1	1.1
	Dominican Rep.	1.6	1.5	1.4	1.2
	Venezuela	2.0	1.8	1.7	1.5
	Latin America and the Caribbean	1.5	1.3	1.2	1.1

Variable	Countries and Region	2000					2010				
		0 - 14	15 - 34	35 - 49	50 - 64	65 e mais	0 - 14	15 - 34	35 - 49	50 - 64	65 e mais
Age structure of total population (%)	Argentina	28.0	31.9	17.6	12.7	9.9	25.0	32.7	18.0	13.8	10.5
	Brazil	29.6	36.0	19.0	9.9	5.5	25.5	34.5	20.3	12.8	6.9
	Chile	27.8	32.3	21.1	11.6	7.3	22.3	31.8	21.7	15.1	9.2
	Colombia	32.9	35.7	18.1	8.7	4.7	28.8	34.3	19.5	11.9	5.6
	Cuba	20.6	31.0	23.4	15.0	10.0	17.3	27.0	26.9	16.5	12.3
	Ecuador	34.5	35.6	16.3	8.5	5.1	30.6	34.0	17.7	11.1	6.7
	Mexico	33.1	36.7	16.4	8.6	5.2	27.9	34.2	19.8	11.5	6.6
	Peru	34.1	36.0	16.3	8.8	4.8	29.9	35.4	18.2	10.5	6.0
	Dominican Rep.	35.1	35.2	16.2	8.4	5.1	31.4	34.5	17.5	10.5	6.1
	Venezuela	33.7	35.1	17.6	9.0	4.5	29.5	34.8	18.6	11.5	5.6
	Latin America and the Caribbean	31.8	35.2	17.6	9.5	5.8	27.9	34.1	19.2	11.9	6.9

Source: ECLAC.

Table A.2. GDP and GDP per capita: Latin America

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
GDP (current price; US$ billion)	Argentina	284.3	268.8	102.0	129.6	153.1	183.2	214.3	262.5	328.5	308.7	370.3
	Brazil	644.7	554.2	506.0	552.4	663.7	882.0	1,089.3	1,366.9	1,653.5	1,620.2	2,143.0
	Chile	79.4	72.4	71.0	77.8	100.6	124.4	154.4	172.9	179.6	172.6	216.3
	Colombia	99.9	98.2	98.0	94.6	117.1	146.6	162.6	207.4	244.0	232.9	286.4
	Cuba	30.6	31.7	33.6	35.9	38.2	42.6	52.7	58.6	60.8	62.1	64.3
	Ecuador	18.3	24.5	28.5	32.4	36.6	41.5	46.8	51.0	61.8	61.6	67.9
	Mexico	636.7	681.8	711.1	700.3	758.6	846.1	949.1	1,033.2	1,092.0	880.1	1,032.6
	Peru	53.3	54.0	56.8	61.4	69.7	79.4	92.3	107.5	129.1	130.1	157.4
	Dominican Rep.	23.7	24.5	24.9	20.0	21.6	33.5	35.7	41.0	45.5	46.6	51.6
	Venezuela	117.1	122.9	92.9	83.5	112.5	145.5	183.5	230.4	315.6	329.4	239.6
	Total (10 biggest)	1,988.1	1,932.9	1,724.9	1,788.0	2,071.7	2,524.9	2,980.6	3,531.3	4,110.4	3,844.3	4,629.4
	Latin America and the Caribbean	2,132.1	2,078.9	1,867.7	1,935.9	2,234.4	2,707.2	3,184.5	3,764.8	4,382.9	4,103.2	4,922.1

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
GDP per capita (US$)	Argentina	7,707	7,212	2,711	3,410	3,991	4,728	5,475	6,638	8,224	7,653	9,089
	Brazil	3,702	3,137	2,825	3,043	3,609	4,739	5,789	7,189	8,612	8,361	10,962
	Chile	4,898	4,414	4,281	4,639	5,933	7,257	8,914	9,877	10,161	9,479	11,874
	Colombia	2,512	2,430	2,385	2,268	2,762	3,405	3,721	4,676	5,431	5,140	6,237
	Cuba	2,760	2,853	3,018	3,219	3,419	3,811	4,710	5,232	5,428	5,560	5,722
	Ecuador	1,323	1,706	1,959	2,225	2,528	2,829	3,159	3,410	4,020	3,818	4,210
	Mexico	6,434	6,800	7,007	6,821	7,305	8,058	8,939	9,626	10,067	8,022	9,327
	Peru	2,052	2,045	2,122	2,262	2,536	2,852	3,277	3,772	4,477	4,470	5,334
	Dominican Rep.	2,763	2,819	2,821	2,235	2,371	3,631	3,805	4,315	4,723	4,769	5,210
	Venezuela	4,801	4,943	3,667	3,238	4,282	5,445	6,748	8,330	11,223	11,525	8,251
	Latin America and the Caribbean	4,124	3,963	3,509	3,590	4,090	4,895	5,689	6,649	7,655	7,078	8,404

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
GDP variation (%)	Argentina	-0.8	-4.4	-10.9	8.8	9.0	9.2	8.5	8.7	6.8	0.9	9.2
	Brazil	4.3	1.3	2.7	1.1	5.7	3.2	4.0	6.1	5.2	-0.3	7.5
	Chile	4.5	3.4	2.2	3.9	6.0	5.6	4.6	4.6	3.7	-1.7	5.2
	Colombia	2.9	1.7	2.5	3.9	5.3	4.7	6.7	6.9	3.5	1.5	4.3
	Cuba	5.9	3.2	1.4	3.8	5.8	11.2	12.1	7.3	4.1	1.4	2.1
	Ecuador	4.2	4.8	3.4	3.3	8.8	5.7	4.8	2.0	7.2	0.4	3.6
	Mexico	6.6	0.0	0.8	1.4	4.1	3.3	5.1	3.4	1.2	-6.3	5.6
	Peru	3.0	0.2	5.0	4.0	5.0	6.8	7.7	8.9	9.8	0.9	8.8
	Dominican Rep.	5.7	1.8	5.8	-0.3	1.3	9.3	10.7	8.5	5.3	3.5	7.8
	Venezuela	3.7	3.4	-8.9	-7.8	18.3	10.3	9.9	8.8	5.3	-3.2	-1.5
	Latin America and the Caribbean	4.4	0.7	0.5	1.8	5.8	4.6	5.6	5.6	4.0	-2.0	5.9

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
GDP per capita variation	Argentina	-1.9	-5.4	-11.8	7.8	8.0	8.1	7.4	7.6	5.7	-0.2	8.1
	Brazil	2.8	-0.1	1.2	-0.2	4.4	1.9	2.8	5.0	4.2	-1.2	6.6
	Chile	3.2	2.2	1.0	2.8	4.9	4.5	3.5	3.5	2.6	-2.6	4.2
	Colombia	1.2	0.0	0.9	2.3	3.7	3.1	5.1	5.3	2.0	0.0	2.9
	Cuba	5.6	2.9	1.2	3.6	5.6	11.1	12.0	7.2	4.1	1.4	2.1
	Ecuador	2.7	3.4	2.2	2.1	7.6	4.6	3.6	1.0	6.1	-0.7	2.5
	Mexico	5.1	-1.3	-0.5	0.2	2.9	2.1	3.9	2.2	0.2	-7.2	4.5
	Peru	1.4	-1.2	3.6	2.6	3.6	5.5	6.4	7.6	8.5	-0.3	7.5
	Dominican Rep.	4.0	0.2	4.2	-1.8	-0.2	7.7	9.1	6.9	3.8	2.1	6.3
	Venezuela	1.7	1.5	-10.5	-9.4	16.2	8.4	8.0	6.9	3.5	-4.8	-3.0
	Latin America and the Caribbean	2.9	-0.7	-0.9	0.5	4.5	3.3	4.3	4.4	2.8	-3.1	4.8

Source: ECLAC.

Table A.3.   Variables of external sector A: Latin America

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Exports (US$ billion)	Argentina	26.3	26.5	25.7	29.9	34.6	40.4	46.5	56.0	70.0	55.7	68.5
	Brazil	55.1	58.2	60.4	73.1	96.5	118.3	137.8	160.6	197.9	153.0	201.9
	Chile	19.2	18.3	18.2	21.7	32.5	41.3	58.7	68.0	66.3	54.0	71.0
	Colombia	13.8	12.9	12.4	13.8	17.2	21.7	25.2	30.6	38.5	34.0	40.8
	Cuba	1.7	1.6	1.4	1.7	2.2	2.4	3.2	3.8	-	-	-
	Ecuador	5.1	4.8	5.3	6.4	8.0	10.5	13.2	14.9	19.5	14.4	18.1
	Mexico	166.4	159.0	161.3	165.0	188.3	214.6	250.3	272.3	291.9	230.0	298.9
	Peru	7.0	7.0	7.7	9.1	12.8	17.4	23.8	28.1	31.0	27.0	35.6
	Dominican Rep.	5.7	5.3	5.2	5.5	5.9	6.1	6.6	7.2	6.7	5.5	6.6
	Venezuela	33.5	26.7	26.8	27.2	39.7	55.7	65.6	69.0	95.1	57.6	65.8
	Total (10 biggest)	333.7	320.4	324.2	353.4	437.7	528.4	630.9	710.4	817.0	631.1	807.1
	Latin America and the Caribbean	371.0	356.2	359.4	392.4	483.7	583.3	697.9	783.9	906.4	701.8	889.3

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Imports (US$ billion)	Argentina	23.9	19.2	8.5	13.1	21.3	27.3	32.6	42.5	54.6	37.1	53.8
	Brazil	55.8	55.6	47.2	48.3	62.8	73.6	91.4	120.6	173.1	127.7	181.7
	Chile	17.1	16.4	15.8	17.9	22.9	30.5	35.9	44.0	57.7	39.9	55.2
	Colombia	11.1	12.3	12.1	13.3	15.9	20.1	24.9	31.2	37.6	31.5	38.6
	Cuba	4.8	4.5	3.8	4.2	5.1	7.6	9.5	10.1	-	-	-
	Ecuador	3.7	5.2	6.2	6.4	7.7	9.7	11.4	13.0	17.9	14.3	19.6
	Mexico	174.8	168.7	168.9	170.8	197.1	222.3	256.6	282.6	309.5	234.9	301.8
	Peru	7.4	7.2	7.4	8.2	9.8	12.1	14.8	19.6	28.4	21.0	28.8
	Dominican Rep.	9.5	8.8	8.8	7.6	7.9	9.9	12.2	13.6	16.0	12.3	15.3
	Venezuela	16.9	19.2	13.4	10.5	17.0	24.0	33.6	46.0	49.5	38.4	38.6
	Total (10 biggest)	324.8	316.9	292.1	300.3	367.6	437.1	522.8	623.3	744.3	557.1	733.5
	Latin America and the Caribbean	374.6	366.4	341.7	353.6	429.9	509.7	607.3	722.2	864.3	650.2	843.5

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Balance of trade (US$ billion)	Argentina	2.5	7.4	17.2	16.8	13.3	13.1	14.0	13.5	15.4	18.5	14.7
	Brazil	-0.7	2.7	13.1	24.8	33.6	44.7	46.5	40.0	24.8	25.3	20.2
	Chile	2.1	1.8	2.4	3.7	9.6	10.8	22.8	23.9	8.5	14.1	15.9
	Colombia	2.7	0.6	0.3	0.6	1.3	1.6	0.3	-0.6	1.0	2.5	2.1
	Cuba	-3.1	-2.8	-2.4	-2.6	-2.9	-5.2	-6.3	-6.3	-	-	-
	Ecuador	1.4	-0.4	-0.9	0.1	0.3	0.8	1.8	1.8	1.5	0.1	-1.6
	Mexico	-8.4	-9.6	-7.6	-5.8	-8.8	-7.7	-6.3	-10.3	-17.6	-4.9	-3.0
	Peru	-0.4	-0.2	0.3	0.9	3.0	5.3	9.0	8.5	2.6	6.0	6.7
	Dominican Rep.	-3.7	-3.5	-3.7	-2.2	-2.0	-3.7	-5.6	-6.4	-9.2	-6.8	-8.7
	Venezuela	16.7	7.5	13.4	16.7	22.6	31.7	32.0	23.0	45.7	19.2	27.2
	Total (10 biggest)	9.0	3.4	32.1	53.1	70.1	91.2	108.1	87.1	72.7	74.0	73.6
	Latin America and the Caribbean	-3.7	-10.3	17.7	38.8	53.9	73.6	90.6	61.7	42.1	51.6	45.8

Variable	Countries and Region	2000			2005			2010		
		A. Latina	USA	China	A. Latina	USA	China	A. Latina	USA	China
Exports destination (% of the total)	Argentina	48.1	12.0	3.0	40.4	11.4	7.9	41.8	5.4	8.5
	Brazil	24.8	24.3	2.0	25.1	19.2	5.8	23.4	9.7	15.6
	Chile	21.9	16.5	5.0	16.0	16.1	11.6	16.3	11.3	23.2
	Colombia	28.9	50.4	0.2	33.5	41.8	1.1	26.2	43.1	4.9
	Cuba	68.7	0.0	0.2	26.3	0.0	4.9	-	-	-
	Ecuador	31.5	37.9	1.2	30.7	50.1	0.1	39.7	34.7	1.9
	Mexico	3.6	88.2	0.2	4.5	85.8	0.5	7.0	80.1	1.4
	Peru	18.1	28.0	6.4	20.7	30.7	10.9	16.9	16.4	15.5
	Dominican Rep.	16.2	40.2	0.0	4.9	70.1	0.5	28.1	58.7	2.7
	Venezuela	19.6	59.6	0.1	8.3	45.2	0.4	-	-	-
	Latin America and the Caribbean	17.5	58.6	1.1	19.2	51.0	3.9	21.2	36.9	10.7

Variable	Countries and Region	2000			2005			2010		
		A. Latina	USA	China	A. Latina	USA	China	A. Latina	USA	China
Imports origin (% of the total)	Argentina	34.3	18.9	4.6	47.3	15.8	5.3	40.3	10.8	13.5
	Brazil	21.3	23.3	2.2	16.2	17.5	7.3	17.4	15.1	14.2
	Chile	35.8	19.7	5.7	35.1	14.2	7.4	29.7	16.8	11.8
	Colombia	27.1	33.2	3.0	32.9	28.5	7.6	28.3	25.9	13.5
	Cuba	36.5	0.1	9.2	39.0	6.4	11.5	-	-	-
	Ecuador	43.7	25.6	2.2	46.3	19.2	6.5	38.5	27.9	7.8
	Mexico	2.6	71.2	1.6	5.6	53.6	8.0	4.3	48.2	15.1
	Peru	38.4	23.4	3.9	42.0	17.8	8.5	31.4	19.5	17.1
	Dominican Rep.	30.7	44.8	1.0	12.7	37.8	3.7	31.3	39.0	10.7
	Venezuela	25.0	37.8	1.3	38.7	31.6	3.7	37.1	27.3	10.4

Source: ECLAC.

Table A.4. Variables of external sector B: Latin America

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Current tran-sactions (US$ billions)	Argentina	-9.0	-3.8	8.8	8.1	3.2	5.3	7.8	7.4	6.8	8.5	2.8
	Brazil	-24.2	-23.2	-7.6	4.2	11.7	14.0	13.6	1.6	-28.2	-24.3	-47.3
	Chile	-0.9	-1.1	-0.6	-0.8	2.6	1.9	7.1	7.1	-5.8	3.5	3.3
	Colombia	0.8	-1.1	-1.3	-1.0	-0.9	-1.9	-3.0	-6.0	-6.7	-5.0	-8.8
	Cuba	-0.7	-0.6	-0.3	0.0	0.1	0.1	-0.2	0.5	–	–	–
	Ecuador	0.9	-0.7	-1.2	-0.4	-0.5	0.5	1.7	1.7	1.6	0.1	-1.6
	Mexico	-18.7	-17.7	-14.2	-7.2	-5.2	-5.9	-4.5	-9.3	-15.7	-5.1	-3.1
	Peru	-1.5	-1.2	-1.1	-0.9	0.1	1.2	2.9	1.5	-5.3	-0.7	-3.8
	Dominican Rep.	-1.0	-0.7	-0.8	1.0	1.0	-0.5	-1.3	-2.2	-4.5	-2.3	-4.3
	Venezuela	11.9	2.0	7.6	11.8	15.5	25.4	26.5	17.3	34.3	6.0	12.1
	Total (10 biggest)	-42.5	-48.1	-10.8	14.9	27.6	40.2	50.7	19.6	-23.5	-19.3	-50.7
	Latin America and the Carib-bean	-49.3	-54.6	-16.7	9.4	22.4	36.6	50.1	14.9	-29.3	-19.3	-56.4

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Capital and fi-nancial account (US$ billions)	Argentina	9.5	2.0	2.8	0.9	3.4	4.0	3.1	5.0	8.3	3.3	5.2
	Brazil	30.5	24.7	14.1	9.9	8.3	12.5	-9.4	27.5	24.6	36.0	36.9
	Chile	0.9	2.6	2.2	2.7	5.6	4.8	4.6	10.0	7.1	4.8	6.4
	Colombia	2.1	2.5	1.3	0.8	2.9	5.6	5.6	8.1	8.3	4.0	0.2
	Cuba	–	–	–	–	–	–	–	–	–	–	–
	Ecuador	0.0	0.5	0.8	0.9	0.8	0.5	0.3	0.2	1.0	0.3	0.2
	Mexico	18.1	25.5	22.9	15.0	20.4	17.6	14.3	21.5	25.1	8.3	4.3
	Peru	0.8	1.1	2.2	1.3	1.6	2.6	3.5	5.4	6.2	5.2	7.1
	Dominican Rep.	1.0	1.1	0.9	0.6	0.9	1.1	1.1	1.7	2.9	2.2	1.6
	Venezuela	4.2	3.5	-0.2	0.7	0.9	1.4	-2.0	1.0	-0.9	-4.9	-3.8
	Total (10 biggest)	67.0	63.5	46.9	32.7	44.8	50.2	20.9	80.3	82.7	59.2	58.2
	Latin America and the Caribbean	71.8	68.5	51.2	37.6	50.9	56.9	31.9	92.9	98.6	69.4	68.7

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Net Foreign Direct Investment (US$ billions)	Argentina	9.5	2.0	2.8	0.9	3.4	4.0	3.1	5.0	8.3	3.3	5.2
	Brazil	30.5	24.7	14.1	9.9	8.3	12.5	-9.4	27.5	24.6	36.0	36.9
	Chile	0.9	2.6	2.2	2.7	5.6	4.8	4.6	10.0	7.1	4.8	6.4
	Colombia	2.1	2.5	1.3	0.8	2.9	5.6	5.6	8.1	8.3	4.0	0.2
	Cuba	-	-	-	-	-	-	-	-	-	-	-
	Ecuador	0.0	0.5	0.8	0.9	0.8	0.5	0.3	0.2	1.0	0.3	0.2
	Mexico	18.1	25.5	22.9	15.0	20.4	17.6	14.3	21.5	25.1	8.3	4.3
	Peru	0.8	1.1	2.2	1.3	1.6	2.6	3.5	5.4	6.2	5.2	7.1
	Dominican Rep.	1.0	1.1	0.9	0.6	0.9	1.1	1.1	1.7	2.9	2.2	1.6
	Venezuela	4.2	3.5	-0.2	0.7	0.9	1.4	-2.0	1.0	-0.9	-4.9	-3.8
	Total (10 biggest)	67.0	63.5	46.9	32.7	44.8	50.2	20.9	80.3	82.7	59.2	58.2
	Latin America and the Caribbean	71.8	68.5	51.2	37.6	50.9	56.9	31.9	92.9	98.6	69.4	68.7

Variable	Countries and Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
International reserves (US$ billions)	Argentina	25.5	14.7	10.0	13.3	18.8	29.0	31.3	44.7	47.5	47.3	51.7
	Brazil	33.4	36.3	36.1	46.5	50.5	55.6	84.0	174.7	198.8	234.7	285.9
	Chile	15.2	14.6	14.6	14.9	15.3	17.5	19.0	16.3	23.7	24.9	27.6
	Colombia	9.1	10.4	10.3	10.3	12.9	15.5	15.1	20.3	24.3	24.6	27.8
	Cuba	-	-	-	-	-	-	-	-	-	-	-
	Ecuador	1.2	1.1	1.0	1.1	1.3	2.2	2.0	3.5	4.6	4.0	2.7
	Mexico	35.6	45.0	47.9	55.2	60.8	76.1	74.2	84.0	97.2	94.1	115.5
	Peru	8.9	9.2	9.4	9.8	12.2	14.8	17.2	27.0	32.1	32.1	43.2
	Dominican Rep.	0.6	1.1	0.5	0.2	0.8	1.9	2.1	2.4	2.3	3.4	4.2
	Venezuela	16.1	12.4	11.7	19.9	22.6	30.6	36.1	33.0	43.9	34.0	29.5
	Total (10 biggest)	145.6	144.8	141.4	171.4	195.1	243.1	280.9	406.0	474.4	498.9	588.1
	Latin America and the Caribbean	162.7	164.6	157.6	190.3	217.5	272.3	314.1	445.3	525.0	557.9	651.4

Source: ECLAC.

Table A.5. Poverty and income distribution – Latin America

Variable	Countries and Region	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Income share of the richest 20%	Argentina	54.15	55.2	57.0	57.5	58.2	53.8	53.3	51.8	51.6	50.5	50.5	49.4
	Brazil	63.78	0.0	63.9	63.4	62.4	60.9	61.4	60.9	59.8	59.0	58.6	0.0
	Chile	0	60.6	0.0	0.0	60.0	0.0	0.0	57.5	0.0	0.0	57.7	0.0
	Colombia	62.39	62.2	61.3	64.1	61.5	62.0	60.3	100.0	100.0	61.1	60.7	60.2
	Cuba	-	-	-	-	-	-	-	-	-	-	-	-
	Ecuador	63.6	60.8	0.0	0.0	59.4	0.0	58.4	57.7	58.8	55.4	54.4	53.8
	Mexico	0	56.6	0.0	54.8	0.0	51.2	0.0	53.6	0.0	53.7	0.0	0.0
	Peru	60.72	54.9	58.3	59.7	59.8	55.2	55.9	55.6	55.9	53.4	53.5	52.6
	Dominican Rep.	0	56.6	55.6	54.7	57.0	57.0	56.1	56.9	54.2	54.4	54.5	52.8
	Venezuela	52.36	0.0	52.0	53.2	51.9	51.6	52.9	49.4	0.0	0.0	0.0	0.0

Variable	Countries and Region	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Income share of the richest 10%	Argentina	37.0	37.5	39.5	40.5	41.6	36.7	36.1	34.6	34.7	33.6	33.3	32.3
	Brazil	47.4	0.0	47.7	46.8	46.3	45.4	45.5	44.7	43.8	43.3	42.9	0.0
	Chile	0.0	45.3	0.0	0.0	45.0	0.0	0.0	42.0	0.0	0.0	42.8	0.0
	Colombia	46.9	47.0	46.1	48.9	45.9	46.5	45.0	100.0	100.0	45.2	45.0	44.4
	Cuba	-	-	-	-	-	-	-	-	-	-	-	-
	Ecuador	49.0	46.0	0.0	0.0	43.5	0.0	42.6	42.5	43.3	39.3	38.3	38.3
	Mexico	0.0	41.4	0.0	39.4	0.0	35.6	0.0	38.3	0.0	38.7	0.0	0.0
	Peru	44.9	38.4	41.9	44.0	44.2	38.8	39.7	39.2	39.3	36.9	36.8	36.1
	Dominican Rep.	0.0	40.7	39.6	38.8	41.7	41.6	39.7	41.2	38.4	38.8	38.7	36.4
	Venezuela	36.0	0.0	35.3	36.2	35.1	34.7	36.3	33.2	0.0	0.0	0.0	0.0

Variable	Countries and Region	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Income share of the poorest 10%	Argentina	1.1	1.0	0.7	0.9	0.8	1.0	1.1	1.1	1.2	1.3	1.2	1.5
	Brazil	0.6	0.0	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.0
	Chile	0.0	1.3	0.0	0.0	1.4	0.0	0.0	1.6	0.0	0.0	1.5	0.0
	Colombia	0.4	0.1	0.3	0.3	0.3	0.4	0.7	0.0	0.0	0.7	0.8	0.9
	Cuba	-	-	-	-	-	-	-	-	-	-	-	-
	Ecuador	0.6	0.9	0.0	0.0	0.9	0.0	0.9	1.2	1.0	1.1	1.2	1.4
	Mexico	0.0	1.6	0.0	1.8	0.0	1.7	0.0	2.0	0.0	1.8	0.0	0.0
	Peru	0.9	1.1	1.1	1.0	1.2	1.5	1.4	1.4	1.2	1.3	1.3	1.4
	Dominican Rep.	0.0	1.2	1.5	1.3	1.3	1.4	1.3	1.5	1.6	1.7	1.7	1.8
	Venezuela	1.1	0.0	1.2	0.8	0.7	0.7	0.5	1.2	0.0	0.0	0.0	0.0

Variable	Countries and Region	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Income share of the poorest 20%	Argentina	3.5	3.2	2.7	2.8	2.7	3.2	3.4	3.6	3.9	3.9	3.9	4.4
	Brazil	2.2	0.0	2.1	2.3	2.3	2.5	2.8	2.6	2.8	2.9	2.9	0.0
	Chile	0.0	3.7	0.0	0.0	3.8	0.0	0.0	4.2	0.0	0.0	4.3	0.0
	Colombia	2.0	1.9	2.0	1.9	2.1	2.2	2.8	0.0	0.0	2.5	2.7	3.0
	Cuba	-	-	-	-	-	-	-	-	-	-	-	-
	Ecuador	2.2	3.0	0.0	0.0	3.0	0.0	3.1	3.6	3.3	3.7	3.9	4.3
	Mexico	0.0	4.0	0.0	4.4	0.0	4.6	0.0	4.8	0.0	4.7	0.0	0.0
	Peru	2.8	3.4	3.1	3.0	3.4	4.0	3.9	3.8	3.4	3.8	3.8	3.9
	Dominican Rep.	0.0	3.7	4.1	3.8	3.8	3.9	3.8	4.0	4.4	4.5	4.5	4.7
	Venezuela	3.8	0.0	4.0	3.3	3.3	3.4	2.8	4.3	0.0	0.0	0.0	0.0

Variable	Countries and Region	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Participation of the population under US$ 2 a day (PPP) (% of the population)	Argentina	8.5	10.5	14.9	23.1	17.9	12.4	9.4	7.4	5.5	3.7	3.4	1.9
	Brazil	21.3	0.0	21.7	20.2	20.6	18.6	16.6	14.4	13.2	11.3	10.8	0.0
	Chile	0.0	5.6	0.0	0.0	4.9	0.0	0.0	3.2	0.0	0.0	2.7	0.0
	Colombia	27.2	31.7	31.4	32.7	32.7	31.7	23.5	20.9	17.7	20.9	18.5	15.8
	Cuba	-	-	-	-	-	-	-	-	-	-	-	-
	Ecuador	19.1	16.3	0.0	0.0	10.0	0.0	7.7	5.2	6.1	5.5	5.5	4.1
	Mexico	-	15.1	-	13.5	0.0	7.6	-	4.9	-	5.2	-	-
	Peru	28.0	24.1	27.6	24.2	22.1	18.9	20.5	17.8	18.2	14.8	14.0	12.7
	Dominican Rep.	0.0	11.0	10.4	13.0	15.6	20.2	14.9	12.0	11.5	11.1	10.0	9.9
	Venezuela	23.2	0.0	20.8	29.5	34.8	29.4	21.9	12.9	0.0	0.0	0.0	0.0

Source: World Bank.

Ronaldo Herrlein Jr.

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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Ronaldo Herrlein Jr.

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

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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.

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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	Varia-tion (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000 LA 12 position	Ranking 2011 LA 12 position	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11			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

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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	Varia-tion (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000 LA 12 position	Ranking 2011 LA 12 position	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11			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	Varia-tion (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000 LA 12 position	Ranking 2011 LA 12 position	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11			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	Varia-tion (%)	Varia-tion ranking 12	Variation (% p.a.)			Ranking 2000 LA 12 position	Ranking 2011 LA 12 position	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11			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 Salva-dor	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	Varia-tion (%)	Variation ranking 12	Variation (% p.a.)			Ranking 2000 LA 12 position	Ranking 2011 LA 12 position	Ranking 2000	Ranking 2011
			2000-11	2000-05	2005-11			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).

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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 con-
ditions 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]

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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

Countries	Human Development Index (HDI) value		Inequality-adjusted HDI value	Health index		Education index		Income index	
	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.

Eduardo Costa Pinto

Development and human capabilities: challenges for the BRIC

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Development and human capabilities: challenges for the BRIC

Eduardo Costa Pinto

1. Introduction

The first decade of the 21st century was marked by a wide range of economic, political and social changes, ranging from changes in international geopolitics and the international division of production and labor, through the rise in international commodity prices, the fall in industrial products prices and the establishment of favorable terms of trade for developing countries (especially in Africa and Latin America) to the increase of mass consumption on a global scale, the reduction of absolute poverty and improvements in health and education in many developing countries.

Much of this transformation was due to the direct and indirect effects of social and economical dynamics of the emerging countries, notably Brazil, Russia, India and China. These four countries with large geographic and demographic dimensions, high economic potential and remarkable structural differences came to be known as BRIC, an acronym created in 2001 by the Goldman Sachs financial group to designate the countries destined to occupy increasingly relevant positions in the world economy.

The impressive economic growth of the BRIC countries in the 2000s, especially China and India – eleven years after Goldman Sachs' forecasts – leaves no doubt regarding the new leading role played by these countries in the international economy, especially after the international crisis of 2008, since the economies of the United States and Europe have been going through a long period of slow growth since then. Current signs

(in 2012) are far from encouraging for the core countries. Thus, BRIC will assume each day a greater participation in the global economy.

The recent economic boom in this group of countries, especially China, is undeniable. But has this economic growth reverted into human development?[1] In other words, has the advance of commodity production per capita in these countries worked as a means of improving the quality of people's lives?[2] Now, the intention here is not to answer this question in all its aspects because of the scope of this work, but it is important to make clear that economic growth is not necessarily accompanied by the advancement of human development.

Thus, this report aims to present broad outlines of economic and social dynamics (health, education, social infrastructure, income and poverty distribution, etc.) of BRIC countries throughout the 2000s in order to establish whether the economic growth observed work as a means for human development in these countries.

Besides this introduction, this paper is divided into 3 sections. The second one describes BRICs' economic and demographic trend throughout the 2000s, aiming at showing some particularities of the growth pattern in these countries as well as China's important role in the world economy producing structural changes. Section 3 attempts to discuss, in general terms, the evolution of the multiple dimensions (health, education, social infrastructure, and income and poverty distribution) of BRICs' human development early in the 21st century, noting that thousands of people got out of poverty. Finally, section 4 tries to tack some ideas as final

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1   According to the UNDP (1990, p.10), human development "is a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development, the three essential ones are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living. If these essential choices are not available, many other opportunities remain inaccessible. But human development does not end there. Additional choices, highly valued by many people, range from political, economic and social freedom to opportunities for being creative and productive, and enjoying personal self-respect and guaranteed human rights".

2   Sen (1993, p. 03) states that the quality of human life "is itself a very complex issue". In his attempt to operationalize this concept, he uses the "capability approach [that] conceives human life as a set of 'activities' and 'ways of being' that we shall call 'efetivations. [Therefore, he] relates the judgment on the quality of life to the assessment of the ability to work or perform tasks". Thus, quality can only be achieved by building human capabilities.

considerations, in particular the main challenges that BRIC countries will have to face to build human capabilities.

Data and indicators used were extracted from the databases of the International Monetary Fund (IMF), the World Bank (WB) and the United Nations Development Programme (UNDP). For ease of explanation, we shall not present in the text all the data of the annual economic and social indicators of the BRIC countries in the 2000s. However, these can be observed in the statistical annex containing a detailed presentation of the annual evolution of the main economic and social statistics.

2. BRICs' DEMOGRAPHIC AND ECONOMIC DIMENSIONS: THE 2000s DYNAMICS

BRICs' population accounted for 42.3% of the world population in 2011 (6,834,000,000 people), where Brazil, Russia, India and China had 195, 142, 1,207 and 1,348 million inhabitants, respectively.

Between 2000 and 2011, the proportion of the population aged 0-14 decreased significantly in Brazil, Russia, India and China (15.4%, 16%, 13% and 25%, respectively), whereas the proportions of the population grew in all countries of the BRIC for age cohorts of 15-64 years (4.5% in Brazil, 3.7% in Russia, 6.1% in India and 7.5% in China) and 65 years and over (29.5%, 2.8%, 18.1% and 19.5% in Brazil, Russia, India and China, respectively).

The evolution of these populations per age cohorts between 2000 and 2011 was the result of the decrease in BRIC fertility rate, with the exception of Russia (from 2.4 to 1.8 in Brazil, from 3.1 to 2.6 in India and from 1.7 to 1.6 in China), and the increase in life expectancy at birth (from 70.1 to 73.1 in Brazil, from 65.3 to 68.8 in Russia, from 61.6 to 65.1 in India and from 71.2 to 73.3 in China), since a fall in infant mortality was noted in all countries (44.6%, 50%, 23.1% and 42.1% for Brazil, Russia, India and China, respectively).

This demographic dynamic of reducing the younger age group will, in the coming years, lead the BRIC to a lower demand for primary education, whereas the increase of the 15-64 years age group will mean greater

pressure on the labor market (need to generate new jobs), as well as an increased demand for mid-level and higher education schools. The growth of the 65 years and over age group will result in the need to increase appropriate services to meet the needs of the elderly, in particular, social security, health and leisure. It should be noted that this greater demand is already observed today in Russia, which has the largest proportion of people over the age of 65 years (12.8% in 2011) among BRIC countries.

The potentially productive age group (15-64 years) increased at a greater rate than the economically dependent population (0-14 years and 60 years and over) in the BRIC countries between 2000 and 2011, thereby causing reductions in dependency ratios[3] from 54 to 47.4 in Brazil, 44.1 to 38.9 in Russia, from 63.8 to 54.3 in India and 48.1 to 37.8 in China. This means that, in these countries, there was a decrease in the participation of the potentially inactive population that has to be taken care of by the potentially productive ones. This demographic situation is a bonus when unemployment rates are at low levels, because almost all the potentially active population is employed, generating more goods and income at a time when the proportion of dependent population is smaller.

In addition to demographic changes, between 2000 and 2010, BRIC's population has been increasingly living in cities – except for Russia – due to the fast urbanization process as a result of higher economic growth – urbanization rates increased from 81.2% to 86.5% in Brazil, from 27.7% to 30.1% in India and from 35.8% to 44.9% in China, whereas in Russia the rate fell from 73.4% to 72.8 %.

The increased urbanization in Brazil, India and especially China is linked to economic advances. Between 2000 and 2011, with the exception of Brazil, the other three BRIC countries had economic growths well above world GDP growth (3.7% p.a. on average between 2000 and 2011). This generated a greater share of their economies in world GDP, which climbed from 8% in 2000 to 19.1% in 2011.

The economic growth of these countries combined with the reduction of their population growth, due to a decrease in fertility, provided a

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3   Ratio between the population aged 0-14 years plus the 65 years and over and the 15-64 years population. This measures the relative share of the potentially inactive population that must be taken care of by the potentially productive population.

significant increase in the GDP per capita between 2000 and 2011, from US$ 3,762 to US$ 12,789 in Brazil, US$ 1,775 to US$ 12,993 in Russia, US$ 465 to US$ 1,389 in India and US$ 946 to US$ 5,414 in China. It should be noted that international comparisons by GDP per capita (in US$) do not necessarily express the differences in terms of material prosperity, since this procedure does not include the different income and cost of living of each country. Thus, in order to analyze the evolution of material prosperity, it is necessary to use the concept of GDP per capita based on purchasing power parity (PPP).

Between 2000 and 2011, GDP per capita based on PPP grew on average 5% p.a. in Brazil (from US$ 7,207 to US$ 11,769), 10% p.a. in Russia (from US$ 7,661 to US$ 16,736), 12% p.a. in India (from US$ 1,534 to US$ 3,694) and 21% p.a. in China (from US$ 2,379 to US$ 8,382). This has been causing changes in consumption patterns in these countries, generating an increase in energy consumption, durables and non-durables goods and food. Despite this growth, per capita consumption of these products in the BRIC countries is still far from the consumption standards of developed countries.

Let us now briefly consider the economic dynamics of each BRIC country, highlighting the role that China plays in the current transformations of the world economy.

Throughout the 2000s, China continued its process of economic growth set since 1978 (10% GDP growth between 1980 and 2010). The difference from the last decade is that China's[4] rise in the world scenario is clear. Between 2000 and 2011, China's GDP increased by 10.2% p.a., household consumption grew 7.7% p.a. and investment hiked 12.5% p.a., producing a growth of Gross Fixed Capital Formation (GFCF) as a percentage of GDP (from 34.1% to 44.4%) and maintaining unemployment rates at low levels (around 4% over the decade). Even with this strong growth, average inflation was only 2.3% p.a. for the period.

According to Castro (2011), this increasing importance of the Chinese economy in the first decade of the 21st century has caused long-term structural changes in the world economic system, namely: i) an increase

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4   China's share of global GDP (in current US dollars) increased from 1.8% in 1990 to 9.3% in 2010, becoming the world's second-biggest economy.

(and maintenance at high levels in recent historical terms) in the international commodity prices; ii) a reduction and/or stabilization of world prices of industrial products resulting from the competitive pressure of China's industrial production; iii) a maintenance of favorable terms of trade for commodity-exporting developing countries; and iv) an increase of world mass consumption due to the change in the relative price between manufactured parts and wages that is enabling access to industrial products to segments of the world population that previously lived at subsistence levels.

These changes were due to the new double-pole role played by China. In the first pole, it has established itself as the leading global producer and exporter of information technology (IT) and labor-intensive and technology-intensive industrial consumer goods, becoming the "world's factory". On the other pole, it appears as a large consumer market for the world production of high technology machinery and equipment, notably from Germany, Japan and Korea, as well as for the production of commodities (oil, minerals, agricultural products, etc.), becoming a net importer from Asia, Africa and Latin American countries (MEDEIROS, 2006).

It should be noted that the conditions for China's growth in the last decade – but also in the 1980s and 1990s – were associated with external[5] and internal determinants led by a new national strategy, focused on economic growth, reforms and industrial modernization, which grew out of reforms that started in 1978 by its main proponent Deng Xiaoping (PINTO, 2011).

The Chinese reforms and opening strategies, which began in 1978 and were scaled-up in 1992, produced two articulated growth-driving axes in this country. On one hand, the export dynamics fostered by the establishment of special economic zones – which worked as export processing zones – and the exchange-rate policy (keeping the Yuan undervalued when compared to the dollar); and, on the other hand, the internal dyna-

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5 The main external determinants of the economic miracle were: i) the approach between the United States and China initiated in 1978; ii) the U.S. trade offensive against Japan through the Plaza Accord in 1985; iii) the rise of China in the WTO in November 2001; and iv) the establishment of the Sino-American axis in the 2000s. For a detailed discussion, please see Pinto (2011).

mics driven by the growth of gross fixed capital formation, particularly public investment in infrastructure.

In the 2000s, Brazil went through its largest growth cycle of the past three decades. Between 2000 and 2011, GDP grew by 3.6% per year, almost twice the growth observed between 1980 and 1999, and household consumption and investment (GFCF) rose by 3.9% and 4.5% p. a. respectively, leading to an increased GFCF as a percentage of GDP (16.8% to 19.3%) and a sharp reduction in the unemployment rate (from 11.3% to 6.7%).

The macroeconomic results of the decade showed different dynamics between 2003-06 and 2007-10. In the first period, Brazilian growth was strongly boosted by external dynamics both directly (increase in goods and services exports – growth of 13.2% p.a. between 2000 and 2011) and indirectly (increase in the investments of export sectors). The reduction of external constraints and the GDP growth in the period were linked to favorable international changes (due to the "China effect") which generated an extraordinary boom in the prices of commodities that Brazil exported and a reduction of the manufactured products and capital goods imported by the country (PINTO, 2010).

In the second period (2007-10), the favorable external dynamics adds up to the internal market growth, which resulted from the flexibilization of the economic policy's contractionary orientation, thus creating an economic growth supported by investments and household consumption (average growth of 2007 and 2010 was 10.5% and 5.8%, respectively), which seems to have created, as from 2006, a mass consumption coordinating growth and income distribution. The real raise on minimum wage and the magnification of income transfer programs were the two main factors to the increase of Brazilian household consumption (PINTO, 2010).

In addition to income and distributive policies, the internal market expansion was driven by expansionary credit policies (credit expanded from 26.1% of GDP to 45.2% of GDP between December 2003 and December 2010) and measures to combat international crisis.

The 2000s in Russia were marked by the recovery of its State, which had been unstructured through Boris Yeltsin's liberal reforms in the 1990s – leading to the destruction of State power and the emergence of large mafias and oligarchies –, and the affirmation of a nationalist project based

on the export of natural resources (primarily oil and gas) and the incre-ase and internationalization of Russian domestic market. The institutional and economic recovery of Russia enabled a significant economic growth (MEDEIROS, 2011; NOZAKI et al., 2011). The Russian GDP grew on ave-rage 5.3% p.a. between 2000 and 2011 – despite the 7.8% sharp fall in 2009 due to the international crisis – and household consumption and investment (GFCF) hiked 10.1% and 9.6% p.a. on average, respectively. This dynamic led to an increase of GFCF as a percentage of GDP (from 16.9% to 23.1%) and a significant drop in the unemployment rate (from 10.6% to 7.4%).

The Russian economic expansion was primarily generated by the dynamics of the export sector (exports rose 6.1% p.a. between 2000 and 2011), mainly oil and gas, regarding their effects in reducing external vul-nerability and the investments driven by companies in this energy sector. Medeiros (2011, p. 34) says that "the country's greater control of oil reve-nues and of the financial system enabled the increase – albeit without essentially changing the growth pattern [primary exporter] – of the export sector's boost for the whole economy".

Like Brazil, Russia benefited from the international transformations arising from the "China effect", which provided a strong rise in prices of oil and gas exported by the Russians and a fall in prices of imported manu-factured products.

Despite advances, the international crisis of 2008, with its strong effects on the Russian economy, highlighted the difficulty to sustain incre-ased income and consumption based on Russia's current primary exporter standard and scaled-up government technological and industrial moder-nization initiatives (MEDEIROS, 2011; POMEROZ, 2011).

As in other BRIC countries, India also experienced a favorable eco-nomic performance over the 2000s. Between 2000 and 2011, Indian GDP grew 7.3% p.a. on average, household consumption rose 6.5% p.a. on average, inflation remained under control (roughly 6.3% on average) and unemployment rate was below 5%.

The Indian economic expansion was produced by increased invest-ments (9.8% p.a. on average between 2000 and 2011) and exports of goods

and services (15% p.a. on average between 2000 and 2011), notably in services related to information technology.

The cause of this Indian economic performance is a matter of widespread controversy in the economic literature. On the one hand, it is argued that the recent course would be a result of the liberalizing reforms implemented in the 1990s, which would have created efficiency and competitiveness in exports. On the other hand, it is argued that such greater dynamism is the result of the reforms taken place in the 1980s and the increased presence of the State (PRATES; CINTRA, 2009; VIEIRA; VERISSIMO, 2009).

According to Vieira & Verissimo (2009), India's positive result stems from the following factors: "i) continuity of reforms initiated in the 1980s to provide increased productivity in the economy; ii) growth-oriented and job creation-oriented macroeconomic policy; and iii) a long-term strategic vision, keeping the State's planning and presence".

Economic data does not cast any doubts on the economic gains of BRIC countries, but have these countries progressed towards human development?

3. Human development in its multiple dimensions (education, health, social infrastructure, and income and poverty distribution) in the BRIC countries: thousands of people that overcame misery

In order to achieve human development, economic growth (measured by GDP growth per capita) should be a means to enrich people's lives by creating an environment of increased freedoms enabling people to enjoy long, healthy and creative lives. Thus, human development can only be measured and analyzed from a collection of information about the freedoms that people enjoy and the way people live (SEN, 1993; UNDP, 2010).

The main measure used to verify the level and evolution of countries' human development is the Human Development Index (HDI)[6], calculated by the UNDP/United Nations, which is an indicator of the three basic dimensions of human development, namely: long and healthy life (life expectancy at birth), access to knowledge (average years of schooling and expected years of schooling) and an income level (GNI per capita in PPP $, 2005) that enables a life of dignity.

In 2011, Russia was the highest-ranked country in the HDI ranking (66th; HDI = 0.718) among BRIC countries, followed by Brazil (84th; HDI = 0.755), China (101st; HDI = 0.678) and India (134th; HDI = 0.547). Despite Russia's best ranking, it was the only country among the BRIC that lost a position in the HDI ranking between 2000 and 2011 (from 65th to 66th) even with an annual average HDI growth of 0.81%. The HDI growth of Brazil (0.69%), India (1.56%) and China (1.43%) improved their HDI rankings between 2000 and 2011 (going from 87th to 84th, 135th to 134th and 106th to 101st, respectively), whereas Russia fell one spot from 65th to 66th (Table 1). One of the explanatory factors of the Russian decline was associated with the non-income HDI aspect.

Table 1.   HDI's trend in the BRIC – 2000-2011

	Human Development in 2011	IDH ranking		Human Development Index (HDI) (value)		HDI annual average growth (%)
		2000	2011	2000	2011	2000-2011
Brazil	High	87	84	0.665	0.718	0.69
Russia	High	65	66	0.691	0.755	0.81
India	Average	135	134	0.461	0.547	1.56
China	Average	106	101	0.588	0.678	1.43

Source: UNDP.

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6   The index ranges from 0 (no human development) to 1 (full human development). Countries are divided into HDI groups: very high, high, medium and low, based on the HDI quartiles of the group of 187 countries. This HDI ranking of a country is given as follows: very high when HDI is in the top quartile; high when HDI is in the 51-75percentiles; medium when HDI is in the 26-50 percentiles; and low when HDI is in the bottom quartile. The ranking previously used absolute limits rather than relative ones (UNDP, 2010).

Despite Russia's drop, HDI's positive trend in BRIC countries shows an improvement in the quality of life of these populations. Other human development indicators, which are not HDI components, must also be presented to analyze more specifically the evolution of the quality of life of these people. Here are some indicators.

In education (access to knowledge), which is considered a basic training that affects development and increase of other training, Russia is the most advanced country in BRIC while India is the most backward one. The literacy percentage of the youth population (15-24 years) and the adults (15 years and above) increased in all of the BRIC countries over the 2000s[7], and Russia was the country that almost had an illiterate-free situation at young people and adult levels.

Besides the reduction of illiteracy, there was a significant increase in access to pre-primary, secondary and university education on the part of the population of BRIC countries in the 2000's (see Table 3 attached). In Brazil and Russia, access to primary and secondary education was practically universalized. The difference is that access to pre-primary and higher education (89.9% and 75.9% of the population, respectively) in Russia is much higher than that observed in Brazil. In the case of India, only access to primary education was universalized, while access to other education (pre-primary, secondary and higher) is still very limited, below world average. In China, access to primary education was universalized and is growing fast to other educational levels (pre-primary, secondary and higher), especially in higher education, where the gross enrollment ratio rose from 8% in 2000 to 25.9% in 2010 (see Table 3 attached).

The increased access to education in BRIC countries was not necessarily accompanied by the improvement in the quality of local education. Brazil is the negative example, since the universalization of primary and secondary education occurred without implying a quality[8] improvement

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7   The youth literacy rate rose from 94.2% in 2000 to 97.8% in 2008 in Brazil; remained at 99.7% in 2002 and 2009 in Russia; from 76.4% in 2001 to 81.1% in 2006 in India; and from 98.9% in 2000 to 99.4 in 2009 in China. The adult literacy rate has grown as follows: from 86.4% in 2000 to 90% in 2008 in Brazil; from 99.4% in 2002 to 99.6% in 2009 in Russia; from 61% in 2001 to 62.8% in 2006 in India; and from 90.9% in 2000 to 94% in 2009 in China.

8   In the last assessment in 2009 of the Programme for International Student Assessment (PISA) of OECD for students aged 15 years, Brazil ranked 53rd among the 65 participating countries.

and a reduction of obstacles in the transition between the different stages of education. This is evidenced by the high repetition rates of Brazilian primary and secondary education students in relation to the other BRIC countries (see Table 3 attached).

It is worth noting that Brazil had higher expenditure on education (% GDP) than Russia, that has an educational system of better quality than the Brazilian one according to international assessments – such as the Programme for International Student Assessment (PISA) of OECD,. The positive example comes from China, that has been able to increase access to education by expanding its quality, ranking in first place at PISA's assessment in 2009.

Regarding health, there have been significant improvements in the indicators selected for BRIC countries between 2000 and 2010. The rates of infant and maternal mortality dropped significantly, DPT immunization increased and the incidence of tuberculosis dropped in all countries of the group (see Table 4 attached). Moreover, life expectancy at birth in all BRIC countries rose between 2000 and 2010 (4.2% in Brazil, 5.3% in Russia, 5.7% in India and 2.9% in China).

The social infrastructure of the BRIC countries has also expanded significantly in the 2000s. However, it should be noted that the proportion of India's population with access to infrastructure is still very low. In 2009, almost 100% of the Brazilian and Chinese population had access to electricity, while only 66.3% of India's population had electricity. As regards to access to drinking water, 90% of the BRIC population had access to this benefit in 2010. The access of the BRIC population to sanitary facilities rose between 2000 and 2010, with the exception of Russia (from 74% to 79% in Brazil, from 72% to 70% in Russia, from 25% to 34% in India and from 44% to 64% in China) (see Table 5 attached).

Income distribution showed different patterns throughout the 2000s in the BRIC countries. Brazil improved its income distribution between 1999 and 2009 but still maintains high levels of concentration[9].

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9   The income of the richest 10% compared to the poorest 10% was 87.1 times higher in 1999 and fell to 55.5 times in 2009, while the average income of the richest 20% compared to the poorest 20% was 29 times higher in 1999 and was reduced to 20.6 times in 2009.

Russia stabilized its income distribution between 1999 and 2009[10] and had lower levels of income concentration. India's available data do not allow to check the evolution of income distribution over the 2000s, however income details of the 10% and 20% richest and poorest in India in 2005 enables us to infer that this country has the highest level of income distribution among the BRIC countries. In China, income distribution worsened between 1999 and 2005, however low levels of income concentration[11] are still noted.

The reduction of income poverty observed within the BRIC[12] was quite impressive in the 2000s, especially in China. Between 2000 and 2009, the percentage of the Brazilian population earning less than US$ 2 a day (PPP) fell from 21.3% to 10.8%, meaning that 15.6 million people now earn more than this. In India, the share of the population earning less than US$ 2 a day (PPP) between 2005 and 2010 fell from 75.6% to 68.7%, meaning that 22.1 million Indians went on to earn over US$ 2 a day (PPP). Despite the improvement, the level of income poverty in India is still very high (almost 70% of the population in 2010). Between 2000 and 2008, the share of the Chinese population earning less than US$ 2 a day (PPP) fell from 61.4% to 29.8% and so 381.1 million Chinese were out of poverty. This equates to double the Brazilian population leaving the condition of poverty in just eight years. This is an impressive positive situation.

4. FINAL CONSIDERATIONS

The general lines of economic and social evolution of the BRIC countries over the 2000s presented in this report showed that the economic growth in this group worked as an important element to improve the quality of life of these populations, since both the HDI as other selec-

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10   The average income of the richest 10% was 11.3 times greater than that of the poorest 10% in 1999 and rose to 11.5 times in 2009, while the income of the richest 20% was 7.1 times greater than the poorest 20% and increased to 7.3 times in 2009.

11   The average income of the richest 10% compared to the poorest 10% was 10.9 times greater in 1999 and rose to 17.9 times in 2005, while the average income of the richest 20% compared to the poorest 20% was 7.2 times greater in 1999 and increased to 9.6 times in 2009.

12   The available databases had no information about the reduction of income poverty in Russia.

ted indicators showed an improvement in human development in these countries.

The improvement of BRIC's education indicators (reduction of illiteracy, gross enrollment ratio increase, etc.) enhances the increase of one of the basic capabilities of their population: access to knowledge, which in itself has an intrinsic value and also enables the development of other capabilities. Beyond this dimension, the population's health positive evolution, as evidenced by the information presented, also provides the majority of the population with a longer and healthier life, increasing its ability to work and perform duties.

The fact that nearly 418.8 million people overcame absolute poverty (who earned less than US$ 2 a day (PPP)) in Brazil, India and China was one of the most important advances in human development in these countries, because poverty, as stated by Sen (1993), is the deprivation of capabilities that impedes equal opportunities, highly hindering the establishment of the substantive freedom that people should have to pursue their goals.

It should be noted that many of the advances observed in this group of countries are still confined to the basic workings of the quality of life of people – or in a schematic language of capabilities "[...] to the vector of commodities, where are found the means of achieving " (BARDEN, 2009, p. 42) –, and thus it is necessary to advance much more with respect to the working vector of capabilities, which signifies the spaces (public and private freedom spaces) where freedoms to accomplish or perform tasks in order to obtain the achievements (vector of accomplished functionings) are located (BARDEN, 2009).

China, for instance, was the BRIC country that advanced more in terms of basic operations; however, it was the country that increased less public and private freedoms spaces by virtue of its institutional structure of power marked by hierarchical chains of single party and prohibitions of any kind of expression (cultural, political, artistic, etc.) that might go against the order established by the Chinese Communist Party (CCP).

In India – which is the largest liberal democracy on the planet in terms of population –, the population still faces enormous basic depriva-

tions that are even associated with the rigid social hierarchy of caste which creates inferior human beings.

Russian population is undoubtedly the one with the highest level of basic capabilities because of their advances in education, health and income distribution – still part of the heritage of the former Soviet Union –, but still presents difficulties in building free public and private spaces. This difficulty can be evidenced by two recent events in Russian history: i) the full private appropriation of public spaces during the liberal reforms of the 1990s; and ii) the sharp reduction of free private spaces from the restructuring of the Russian State in the 2000s during the government of Vladimir Putin.

The Brazilian population is perhaps the one that has the largest space (public and private) of freedoms among the BRIC countries; however it still has profound basic deficits, despite recent advances in income distribution, in the issue of the quality of the education and access to quality healthcare.

The challenges BRIC will have to face to advance human development are enormous. Some steps have already been taken, but the road is long and full of hairpin bends. It is necessary to move forward in the analysis of complex connections between economic growth and human development of each BRIC country. This was not possible here due to the scope of this work.

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ATTACHMENTS

Table 1. Gross Domestic Product (GDP) and Demography – BRIC and world

Variables	Countries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GDP Variation (%)	Brazil	4.3	1.3	2.7	1.1	5.7	3.2	4.0	6.1	5.2	-0,3	7.5	2.7
	Russia	10.0	5.1	4.7	7.3	7.2	6.4	8.2	8.5	5.2	-7,8	4.3	4.3
	India	5.2	3.9	4.6	6.9	7.6	9.0	9.5	10.0	6.2	6.6	10.6	7.2
	China	8.4	8.3	9.1	10.0	10.1	11.3	12.7	14.2	9.6	9.2	10.4	9.2
	World	4.7	2.4	2.9	3.7	4.9	4.5	5.2	5.4	2.8	-0,6	5.3	3.9
GDP per Capita (US$)	Brazil	3,762	3,190	2,867	3,085	3,654	4,787	5,869	7,281	8,704	8,472	11,089	12,789
	Russia	1,775	2,106	2,380	2,984	4,120	5,348	6,962	9,153	11,704	8,617	10,408	12,993
	India	465	467	481	549	630	729	807	1,009	1,081	1,068	1,342	1,389
	China	946	1,038	1,132	1,270	1,486	1,726	2,064	2,645	3,404	3,739	4,421	5,414
	World	5,410	5,307	5,448	6,047	6,716	7,138	7,637	8,513	9,239	8,615	9,296	10,193
GDP per capita based on purchasing power parity (billion US$)	Brazil	1,234	1,279	1,334	1,378	1,495	1,585	1,701	1,857	1,996	2,010	2,187	2,294
	Russia	1,121	1,205	1,282	1,404	1,547	1,697	1,894	2,116	2,276	2,121	2,237	2,383
	India	1,571	1,669	1,774	1,935	2,157	2,431	2,749	3,111	3,377	3,637	4,070	4,458
	China	3,015	3,339	3,701	4,158	4,698	5,364	6,240	7,330	8,214	9,066	10,128	11,300
	World	42,293	44,235	46,215	48,876	52,658	56,794	61,638	66,755	70,030	70,139	74,604	78,897
GDP per capita based on purchasing power parity (US$)	Brazil	7,207	7,358	7,563	7,698	8,231	8,603	9,164	9,894	10,526	10,498	11,314	11,769
	Russia	7,661	8,273	8,842	9,737	10,779	11,882	13,322	14,899	16,040	14,945	15,657	16,736
	India	1,534	1,599	1,673	1,798	1,973	2,190	2,441	2,724	2,916	3,098	3,419	3,694
	China	2,379	2,616	2,881	3,217	3,614	4,102	4,747	5,548	6,185	6,792	7,550	8,382
	World	-	-	-	-	-	-	-	-	-	-		
Population (millions)	Brazil	171	174	176	179	182	184	186	188	190	191	193	195
	Russia	146	146	145	144	144	143	142	142	142	142	143	142
	India	1,024	1,044	1,060	1,076	1,093	1,110	1,126	1,142	1,158	1,174	1,191	1,207
	China	1,267	1,276	1,285	1,292	1,300	1,308	1,314	1,321	1,328	1,335	1,341	1,348
	World	5,971	6,047	6,123	6,199	6,274	6,384	6,461	6,541	6,620	6,705	6,785	6,834

Variables	Coun-tries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Urban po-pulation (as a % of total)	**Brazil**	81.2	-	-	-	-	84.2	-	-	-	-	86.5	-
	Russia	73.4	-	-	-	-	72.9	-	-	-	-	72.8	-
	India	27.7	-	-	-	-	28.7	-	-	-	-	30.1	-
	China	35.8	-	-	-	-	40.4	-	-	-	-	44.9	-
	World	46.6	47.0	47.4	47.8	48.2	48.6	49.0	49.4	49.9	50.3	50.7	-
Popula-tion aged 0-14 years (as a % of total)	**Brazil**	29.5	29.1	28.7	28.3	27.9	27.5	27.1	26.7	26.3	25.9	25.5	25.0
	Russia	18.2	17.5	16.8	16.1	15.5	15.1	14.8	14.7	14.7	14.9	15.0	15.3
	India	34.7	34.3	33.9	33.4	33.0	32.6	32.2	31.8	31.4	31.0	30.6	30.2
	China	25.5	24.8	24.1	23.3	22.5	21.9	21.3	20.7	20.3	19.9	19.5	19.1
	World	30.2	29.8	29.4	29.0	28.6	28.2	27.9	27.6	27.3	27.1	26.8	26.6
Popula-tion aged 15-64 ye-ars (as a % of total)	**Brazil**	64.9	65.3	65.5	65.8	66.0	66.2	66.5	66.7	67.0	67.3	67.5	67.8
	Russia	69.4	69.9	70.3	70.6	70.9	71.2	71.5	71.8	72.0	72.2	72.2	72.0
	India	61.1	61.4	61.8	62.1	62.5	62.8	63.2	63.5	63.9	64.2	64.5	64.8
	China	67.5	68.0	68.7	69.3	70.0	70.6	71.1	71.5	71.8	72.1	72.4	72.6
	World	62.9	63.2	63.5	63.9	64.2	64.5	64.8	65.0	65.2	65.4	65.6	65.7
Popula-tion aged 65 years and over (as a % of total)	**Brazil**	5.6	5.7	5.8	6.0	6.1	6.3	6.4	6.5	6.7	6.8	7.0	7.2
	Russia	12.4	12.7	13.0	13.3	13.6	13.8	13.7	13.5	13.2	13.0	12.8	12.8
	India	4.2	4.3	4.4	4.4	4.5	4.6	4.7	4.7	4.8	4.9	4.9	5.0
	China	7.0	7.1	7.2	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.2	8.4
	World	6.9	7.0	7.0	7.1	7.2	7.3	7.3	7.4	7.5	7.5	7.6	7.7
Depen-dency ratio (pop. 0-14 years plus 65 years and over / pop. 15-64 years)	**Brazil**	54.0	53.3	52.6	52.1	51.6	51.0	50.4	49.9	49.3	48.7	48.0	47.4
	Russia	44.1	43.1	42.3	41.7	41.1	40.5	39.9	39.3	38.8	38.5	38.6	38.9
	India	63.8	62.8	61.9	61.0	60.6	59.1	58.3	57.4	56.6	55.8	55.1	54.3
	China	48.1	47.0	45.6	44.2	42.9	41.7	40.7	39.9	39.2	38.7	38.2	37.8
	World	60.3	59.5	58.7	57.9	57.1	56.4	55.8	55.2	54.7	54.2	53.8	53.5

Source: IMF and World Bank.

Table 2.   Macroeconomic data – BRIC and world

Variables	Countries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GDP Variation (%)	**Brazil**	4.3	1.3	2.7	1.1	5.7	3.2	4.0	6.1	5.2	-0,3	7.5	2.7
	Russia	10.0	5.1	4.7	7.3	7.2	6.4	8.2	8.5	5.2	-7,8	4.3	4.3
	India	5.2	3.9	4.6	6.9	7.6	9.0	9.5	10.0	6.2	6.6	10.6	7.2
	China	8.4	8.3	9.1	10.0	10.1	11.3	12.7	14.2	9.6	9.2	10.4	9.2
	World	4.7	2.4	2.9	3.7	4.9	4.5	5.2	5.4	2.8	-0,6	5.3	3.9
Con-sumer inflation (%)	**Brazil**	7.0	6.8	8.5	14.7	6.6	6.9	4.2	3.6	5.7	4.9	5.0	6.0
	Russia	20.8	21.5	15.8	13.7	10.9	12.7	9.7	9.0	14.1	11.7	6.9	8.4
	India	3.9	3.7	4.5	3.7	3.9	4.0	6.3	6.4	8.3	10.9	12.0	8.6
	China	0.4	0.7	-0,8	1.2	3.9	1.8	1.5	4.8	5.9	-0,7	3.3	5.4
	World	4.5	4.2	3.5	3.7	3.6	3.7	3.7	4.0	6.0	2.5	3.7	4.8
Invest-ment variation (GFCF) (%)	**Brazil**	5.0	0.4	-5,2	-4,6	9.1	3.6	9.8	13.9	13.6	-6,7	21.3	4.7
	Russia	18.1	10.3	2.8	13.9	12.6	10.6	18.0	21.0	10.6	-14,4	6.1	5.3
	India	-1,4	15.3	-0,4	10.6	24.0	16.2	13.8	16.2	3.5	6.8	7.5	5.5
	China	10.0	9.1	13.2	16.4	11.6	11.6	12.4	13.1	9.7	22.5	11.4	9.2
Invest-ment (GFCF) (% of GDP)	**Brazil**	16.8	17.0	16.4	15.3	16.1	15.9	16.4	17.4	19.1	18.1	19.5	19.3
	Russia	16.9	18.9	17.9	18.4	18.4	17.8	18.5	21.0	22.3	22.0	21.8	23.1
	India	22.8	25.1	23.8	24.6	28.7	30.3	31.3	32.9	32.3	31.6	30.4	29.5
	China	34.1	34.4	36.3	39.4	40.7	40.1	40.7	39.1	40.8	46.0	45.4	44.4
Hou-sehold con-sump-tion variation (%)	**Brazil**	4.0	4.0	0.7	1.9	-0,8	3.8	4.5	8.5	4.4	4.4	6.9	4.1
	Russia	7.2	9.3	8.3	7.5	12.1	11.7	12.0	14.2	10.5	-4,8	3.0	29.6
	India	3.4	6.0	2.9	5.9	5.6	8.5	8.7	9.2	7.1	7.0	8.1	5.5
	China	7.6	5.8	6.6	6.5	7.4	6.2	8.8	10.5	8.3	9.1	5.8	9.9

Variables	Countries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Hou-sehold con-sump-tion (% of GDP)	Brazil	64.3	63.5	61.7	61.9	59.8	60.3	60.3	59.9	58.9	61.1	59.6	60.3
	Russia	46.2	48.9	51.2	49.9	49.9	49.4	48.7	49.9	47.4	52.5	49.6	52.1
	India	64.8	63.4	64.6	63.9	58.4	57.6	57.0	55.7	58.6	57.3	56.5	58.0
	China	46.7	45.7	44.0	41.8	40.2	38.1	35.2	36.0	34.9	33.9	35.0	37.7
Goods and services exports variation (%)	Brazil	12.9	10.0	7.4	10.4	15.3	9.3	5.0	6.2	0.5	-9,1	11.5	4.5
	Russia	9.5	4.2	10.3	12.6	11.8	6.5	7.3	6.3	0.6	-4,7	7.1	2.0
	India	18,2	4,3	21,1	9,6	27,2	25,8	20,0	5,9	14,4	-4,1	22,7	15,3
	China	32,0	10,1	28,1	27,6	27,3	23,7	23,9	19,8	8,4	-10,3	28,4	13,0
Goods and services imports variation (%)	Brazil	10.8	1.5	-11,8	-1,6	13.3	8.5	18.4	19.9	15.4	-7,6	35.8	9.7
	Russia	32.4	18.7	14.6	17.3	23.3	16.6	21.3	26.2	14.8	-30,4	25.6	20.0
	India	4.6	2.9	12.0	13.9	22.2	32.5	21.3	10.2	22.7	-2,0	15.6	18.5
	China	24.8	12.7	15.6	31.2	29.9	13.4	16.0	13.9	3.8	4.1	20.1	11.9
Unem-ploy-ment rate (% of total workfor-ce)	Brazil	7.1	11.3	11.7	12.3	11.5	9.8	10.0	9.3	7.9	8.1	6.7	6.0
	Russia	10.6	8.9	8.0	8.6	8.2	7.6	7.2	6.1	6.4	8.4	7.5	6.5
	India	4.3	-	-	-	4.4	4.4	-	-	-	-	-	-
	China	3.1	3.6	4.0	4.3	4.2	4.2	4.1	4.0	4.2	4.3	4.1	4.0
	Mundo	-	-	-	-	-	-	-	-	-	-	-	

Source: IMF and World Bank.

Table 3.　　Education – BRIC and world

Variable	Coun-tries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Youth literacy rate (% of people aged 15-24 years)	Brazil	94.2	-	-	-	96.8	-	97.6	97.8	97.8	-	-
	Russia	-		99.7	-	-	-	-	-	-	99.7	-
	India	-	76.4	-	-	-	-	81.1	-	-	-	-
	China	98.9	-	-	-	-	-	-	-	-	99.4	-
	World	87.2	-	-	-	-	-	-	-	-	-	89.7

Variable	Coun-tries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Adult literacy rate (% of people aged 15 years and over)	**Brazil**	86.4	-	-	-	88.6	-	89.6	90.0	90.0	-	-
	Russia	-	-	99.4	-	-	-	-	-	-	99.6	-
	India	-	61.0	-	-	-	-	62.8	-	-	-	-
	China	90.9	-	-	-	-	-	-	-	-	94.0	-
	World	81.8	-	-	-	-	-	-	-	-	-	84.0
Pre-primary education gross enroll-ment rate	**Brazil**	60.4	65.3	54.6	67.2	64.0	69.2					
	Russia	74.5	80.7	83.3	84.1	85.3	86.6	88.2	89.5	89.9	89.9	
	India	23.8	24.7	28.3	32.3	34.0	39.0	39.7	47.2	53.8	53.6	54.8
	China	38.3	37.9	34.9	35.4			39.6	42.3	45.2	49.0	53.9
	World	34.1	34.6	34.7	36.2	37.1	39.6	40.9	43.2	45.6	46.6	48.3
Primary edu-cation gross enrollment rate	**Brazil**	150.7	148.5	146.4	142.2	141.0	136.7					
	Russia	103.1	106.3	114.4	122.0		96.6	96.5	96.6	97.6	98.6	
	India	93.8	93.6	94.1	102.1	110.5	112.5	112.8	113.7	116.0		
	China		113.8	114.6	115.0			110.0	110.2	110.9	111.1	111.2
	World	99.3	99.5	100.5	102.5	104.5	105.1	105.2	106.0	106.9	105.7	106.0
Secondary education gross enroll-ment rate	**Brazil**	104.4	107.2	110.0	102.3	106.0	105.8					
	Russia				91.6	85.4	83.1	83.3	84.7	86.0	88.6	
	India	45.3	45.5	47.3	49.8	51.4	53.9	54.7	57.0	60.2	59.5	63.2
	China	62.1	63.3	64.4	66.8			73.2	76.1	78.5	80.1	81.2
	World	60.1	60.9	62.0	63.2	64.2	65.0	65.8	67.2	68.5	69.0	70.4
Higher edu-cation gross enrollment rate	**Brazil**	16.1	17.8	20.1	22.3	23.8	25.6					
	Russia	55.4	61.2	66.5	66.3	70.2	72.2	72.3	73.5	74.7	75.9	
	India	9.4	9.6	10.2	10.7	11.1	10.8	11.6	13.3	15.2	16.2	17.9
	China	8.0	10.1	12.8	15.4	17.7	19.4	21.1	21.9	22.4	24.3	25.9
	World	19.1	20.1	21.5	22.5	23.5	24.1	24.9	25.9	27.0	28.1	29.2

Variable	Coun-tries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Primary education repeaters (% of total enrollments)	**Brazil**	25.0	21.5	20.6	20.0	20.1	18.7	-	-	-	-	-
	Russia	1.2	1.1	0.9	0.8	-	-	0.6	0.5	0.4	0.4	-
	India	4.2	3.7	3.6	3.6	3.2	3.4	3.4	3.4	3.4	-	-
	China	-	-	0.3	0.3	-	-	0.3	0.2	0.3	0.3	0.3
	World	5.3	5.1	5.0	4.9	4.7	4.8	4.8	4.8	4.8	4.8	4.7
Secondary education repeaters (% of total enrollments)	**Brazil**	18.3	18.0	17.4	19.3	21.9	21.1	-	-	-	-	-
	Russia		0.9	0.8	0.7	0.7	0.6	0.5	0.4	0.4	0.4	-
	India	4.2	4.8	4.8	4.8	4.7	4.7	4.7	-	-	-	-
	China	-	-	-	-	-	-	-	-	-	-	-
	World	-	-	-	4.2	-	-	-	-	-	-	-
Public expenditure on education (% of government expenditure)	**Brazil**	12.0	11.3	10.8	-	12.3	14.5	16.2	16.1	17.4	16.8	-
	Russia	10.6	11.5	10.7	12.3	12.9	-	-	-	11.9	-	-
	India	12.7	-	-	10.7	-	-	-	-	-	-	-
	China	-	-	-	-	-	-	-	-	-	-	-
	World	14.1	13.8	14.4	15.1	14.3	14.6	14.8	14.4	15.6	-	-
Public expenditure on education (% of GDP)	**Brazil**	4.0	3.9	3.8	-	4.0	4.5	5.0	5.1	5.4	5.7	-
	Russia	2.9	3.1	3.8	3.7	3.5	3.8	3.9	-	4.1	-	-
	India	4.4	-	-	3.7	3.4	3.1	3.1	-	-	-	-
	China	-	-	-	-	-	-	-	-	-	-	-
	World	4.0	4.3	4.3	4.4	4.3	4.4	4.5	4.4	4.6	-	-

Source: IMF and World Bank.

Table 4.   Health – BRIC and world

Variable	Countries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Child mortality rate (per 1,000 live births)	**Brazil**	31.2	29.4	27.8	26.2	24.8	23.3	22.0	20.8	19.6	18.4	17.3
	Russia	18.2	17.2	16.2	15.2	14.2	13.2	12.2	11.4	10.6	9.8	9.1
	India	62.7	61.1	59.6	58.0	56.4	54.9	53.5	52.1	50.8	49.5	48.2
	China	27.3	25.9	24.6	23.4	22.2	21.0	19.9	18.9	17.8	16.8	15.8
	World	52.0	50.8	49.7	48.6	47.4	46.2	45.1	44.0	43.0	41.9	41.2
Maternal mortality rate (national estimate, per 100,000 live births)	**Brazil**	-	64.0	-	72.0	75.9	53.4	-	75.0	-	-	-
	Russia	39.7	36.5	33.6	31.9	23.4	25.4	23.8	22.0	20.7	-	17.0
	India	-	-	-	301.0	-		250.0	-	-	-	-
	China	-	-	-	51.0	-	47.7	41.1	36.6	34.2	32.0	
	World	-	-	-	-	-	-	-	-	-	-	-
DPT immunization (% of children aged 12-23 months)	**Brazil**	98.0	98.0	99.0	98.0	96.0	96.0	97.0	97.0	98.0	98.0	98.0
	Russia	96.0	96.0	96.0	97.0	97.0	98.0	99.0	98.0	98.0	98.0	97.0
	India	62.0	60.0	58.0	61.0	64.0	67.0	66.0	70.0	72.0	72.0	72.0
	China	85.0	86.0	86.0	86.0	87.0	87.0	93.0	93.0	97.0	99.0	99.0
	World	74.5	74.5	73.8	75.4	77.4	79.3	80.3	82.1	83.2	84.8	85.1
Incidence of tuberculosis (per 100,000 inhabitants)	**Brazil**	60.0	58.0	57.0	55.0	53.0	51.0	50.0	48.0	46.0	45.0	43.0
	Russia	122.0	118.0	112.0	107.0	106.0	107.0	107.0	107.0	107.0	106.0	106.0
	India	216.0	216.0	215.0	214.0	212.0	209.0	205.0	201.0	196.0	190.0	185.0
	China	109.0	105.0	102.0	98.0	95.0	92.0	89.0	86.0	83.0	80.0	78.0
	World	-	-	-	-	-	-	-	-	-	-	-
Fertility rate, total (births per woman)	**Brazil**	2.4	2.3	2.3	2.2	2.1	2.1	2.0	1.9	1.9	1.9	1.8
	Russia	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.5	1.5	1.5
	India	3.1	3.1	3.0	2.9	2.9	2.8	2.8	2.7	2.7	2.7	2.6
	China	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6
	World	2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5

Variable	Countries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Life expectancy at birth, total (years)	Brazil	70.1	70.4	70.7	71.0	71.3	71.5	71.8	72.1	72.4	72.8	73.1
	Russia	65.3	65.5	65.1	65.0	65.4	65.5	66.6	67.5	67.8	68.6	68.8
	India	61.6	62.0	62.3	62.7	63.0	63.4	63.7	64.1	64.4	64.8	65.1
	China	71.2	71.4	71.6	71.8	72.0	72.2	72.4	72.6	72.8	73.1	73.3
	World	67.2	67.4	67.6	67.8	68.1	68.3	68.6	68.9	69.1	69.4	69.6
Hospital beds (per 1,000 people)	Brazil	-	-	2.6	-	-	2.4	-	-	-	2.4	2.4
	Russia	10.9	10.8	-	10.5	9.9	9.7	9.7	-	-	-	-
	India	-	-	0.7	0.9	-	0.9		-	-	-	-
	China	2.5	2.5	2.5	2.2	3.0	2.5	2.2	-	-	4.2	-
	World	-	-	2.6	-	-	2.9	-	-	-	-	-
Doctors (per 1,000 people)	Brazil	1.2	-	-	-	-	-	1.7	1.7	1.8	-	-
	Russia	4.2	4.2	4.0	4.3	4.0	4.0	4.3	-	-	-	-
	India	-	-	-	-	0.6	0.6	-	-	-	0.6	-
	China	1.6	1.1	1.6	1.4	-	1.5	-	-	-	1.4	-
	World	-	-	-	-	-	-	-	-	-	1.4	1.4
Public expenditure on health (% of GDP)	Brazil	2.9	3.1	3.2	3.1	3.4	3.3	3.5	3.5	3.7	4.1	-
	Russia	3.2	3.3	3.5	3.3	3.1	3.2	3.3	3.5	3.1	3.5	-
	India	1.3	1.3	1.2	1.2	0.9	0.9	1.1	1.2	1.4	1.4	-
	China	1.8	1.6	1.7	1.8	1.8	1.8	1.8	1.9	2.0	2.3	-
	World	5.3	5.6	5.7	5.8	5.8	5.7	5.7	5.6	5.7	6.1	-
Total expenditure on health (% of GDP)	Brazil	7.2	7.3	7.2	7.0	7.1	8.2	8.5	8.5	8.3	8.8	9.0
	Russia	5.4	5.6	6.0	5.6	5.2	5.2	5.3	5.4	4.8	5.6	5.1
	India	4.6	4.8	4.8	4.6	4.1	4.0	4.0	4.0	4.0	4.2	4.1
	China	4.6	4.6	4.8	4.8	4.7	4.7	4.6	4.4	4.6	5.1	5.1
	World	9.2	9.6	10.0	9.9	9.8	9.7	9.9	9.8	9.8	10.6	10.4

Source: IMF and World Bank.

Table 5.   Social infrastructure – BRIC and world

Variables	Countries	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Access to electrical power (% of total population)	**Brazil**	-	-	-	-	-	-	-	-	-	98.3	-
	Russia	-	-	-	-	-	-	-	-	-	-	-
	India	-	-	-	-	-	-	-	-	-	66.3	-
	China	-	-	-	-	-	-	-	-	-	99.4	-
	World	-	-	-	-	-	-	-	-	-	74.1	-
Access to sanitary facilities (% of total population)	**Brazil**	74.0	74.0	75.0	76.0	76.0	76.0	78.0	78.0	78.0	78.0	79.0
	Russia	72.0	72.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	70.0
	India	25.0	26.0	27.0	28.0	29.0	30.0	31.0	31.0	32.0	33.0	34.0
	China	44.0	46.0	49.0	51.0	53.0	55.0	57.0	59.0	61.0	63.0	64.0
	World	55.6	56.3	57.3	58.1	59.0	59.7	60.5	61.1	61.5	62.1	62.5
Access to drinking water (% total population)	**Brazil**	94.0	94.0	94.0	95.0	95.0	96.0	96.0	97.0	97.0	97.0	98.0
	Russia	95.0	95.0	95.0	95.0	96.0	96.0	97.0	97.0	97.0	97.0	97.0
	India	81.0	82.0	83.0	85.0	85.0	86.0	88.0	89.0	90.0	91.0	92.0
	China	80.0	82.0	83.0	84.0	85.0	87.0	87.0	89.0	89.0	90.0	91.0
	World	82.5	83.3	83.9	84.6	85.0	85.8	86.3	87.1	87.4	87.9	88.4

Source: World Bank.

Table 6. Poverty and income distribution – BRIC

Variables	Coun-tries	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Share in the income of the 10% poorest	Brazil	0.58	-	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	-
	Russia	2.48	-	2.5	2.8	2.7	2.7	2.7	2.3	2.4	2.6	2.8	-
	India	-	-	-	-	-	-	3.8	-	-	-	-	-
	China	2.73	-	-	2.3	-	-	1.8	-	-	-	-	-
Share in the income of the 20% poorest	Brazil	2.2	-	2.07	2.29	2.27	2.51	2.76	2.64	2.77	2.87	2.85	-
	Russia	6.22	-	6.1	6.9	6.6	6.6	6.5	5.7	5.7	6.0	6.5	-
	India	-	-	-	-	-	-	8.6	-	-	-	-	-
	China	6.39	-	-	5.5	-	-	5.0	-	-	-	-	-
Share in the income of the 20% richest	Brazil	63.78	-	63.9	63.4	62.4	60.9	61.4	60.9	59.8	59.0	58.6	-
	Russia	44.05	-	46.2	42.9	44.3	44.1	44.4	48.4	50.0	48.9	47.1	-
	India	-	-	-	-	-	-	42.4	-	-	-	-	-
	China	46.1	-	-	48.6	-	-	47.9	-	-	-	-	-
Share in the income of the 10% richest	Brazil	47.38	-	47.7	46.8	46.3	45.4	45.5	44.7	43.8	43.3	42.9	-
	Russia	27.94	-	30.4	27.1	28.6	28.2	28.6	32.4	34.5	33.5	31.7	-
	India	-	-	-	-	-	-	28.3	-	-	-	-	-
	China	29.72	-	-	31.7	-	-	32.0	-	-	-	-	-
Share of the population earning less than US$ 2 a day (PPP) (% of the popula-tion)	Brazil	21.32	-	21.7	20.2	20.6	18.6	16.6	14.4	13.2	11.3	10.8	-
	Russia	-	-	-	-	-	-	-	-	-	-	-	-
	India	-	-	-	-	-	-	75.6	-	-	-	-	68.7
	China	61.44	-		51.2	-	-	36.9	-	-	29.8	-	-

Source: World Bank.

Rafael Guerreiro Osório

Welfare, inequality and poverty in 12 Latin American countries

Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Mexico, Paraguay, Peru, Uruguay and Venezuela

Technical officer on planning and research at IPEA.

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Rafael Guerreiro Osório

The 2000s were good for many Latin American countries. Welfare gains have been unequivocal for the 12 ones considered here, with income growth coupled with the reduction of inequality, resulting in reductions in poverty rates. These countries have benefited from the international conjuncture, which increased the demand for their export products, but part of the result, in particular, the fall in income inequality and poverty, was due to the expansion of social policies, especially for conditional and targeted income transfers, largely adopted in Latin America.

Chart 1.   Gross National Income per capita, 2000 and 2010; annual average growth rate

GNI – Gross National Income per capita, in thousands US$ PPP

Annual average growth rate 2000-2010

| 2000 |
| 2010 |

Country	2000	2010
BOL	3.0	4.6
PAR	3.3	5.0
ECU	4.3	7.8
ELS	4.5	6.4
PER	4.7	9.3
COL	5.7	9.0
BRA	6.8	11.0
VEN	8.3	12.0
URU	8.5	13.5
MEX	8.7	14.4
ARG	8.8	15.5
CHI	8.9	14.9

Country	Growth rate
BOL	4.1%
PAR	4.0%
ECU	6.0%
ELS	3.6%
PER	6.8%
COL	4.6%
BRA	4.8%
VEN	3.6%
URU	4.7%
MEX	5.0%
ARG	5.7%
CHI	5.3%
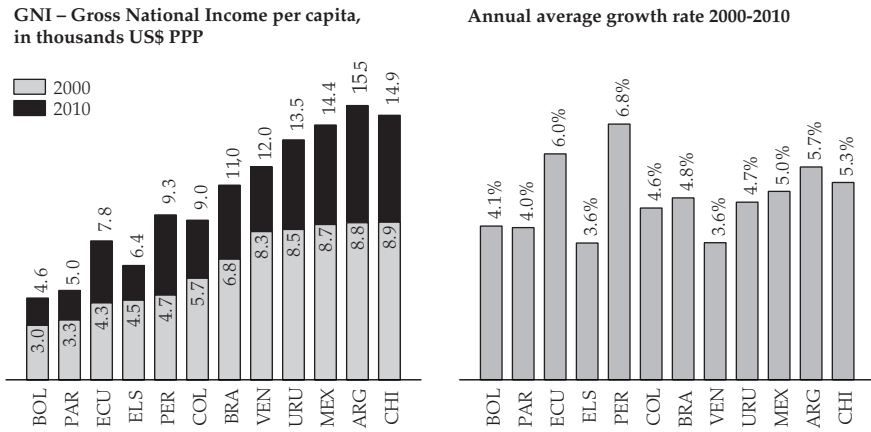
Source: World Bank. World Development Indicators and Global Development Finance.

Chart 1 summarizes the growth of the Gross National Income per capita. The GNI is the Gross Domestic Product less what foreign companies and people earned in the country and remitted overseas plus what national companies and citizens abroad remitted to the country. From 2000 to 2010, the GNI per capita of the 12 countries grew on average 4.9% annually. The growth rate of most countries was around this average, except for Venezuela and El Salvador, with the worst performances, and Ecuador and Peru, countries with a higher growth.

Besides GNI per capita have grown in all these countries from 2000 to 2010, growth trajectory displays similar moments, as illustrated in Chart 2. From 2000 to 2003, growth is slow and, in some cases, GNI decreases. For Argentina, Uruguay and Venezuela the years 2002 and 2003 recorded the lowest income in the decade. From 2003 to 2008, income begins to grow at higher rates, a difference that is particularly clear in the series of Argentina, Chile, Mexico, Uruguay and Venezuela, the five richest of the group. In 2008-2009, the series of all countries show the impact of the international crisis, with reduced growth or even decline of GNI per

capita, although, with the exception of Venezuela, all show a slight reco-
very in 2010.

Chart 2.   Gross National Income per capita, 2000-2010
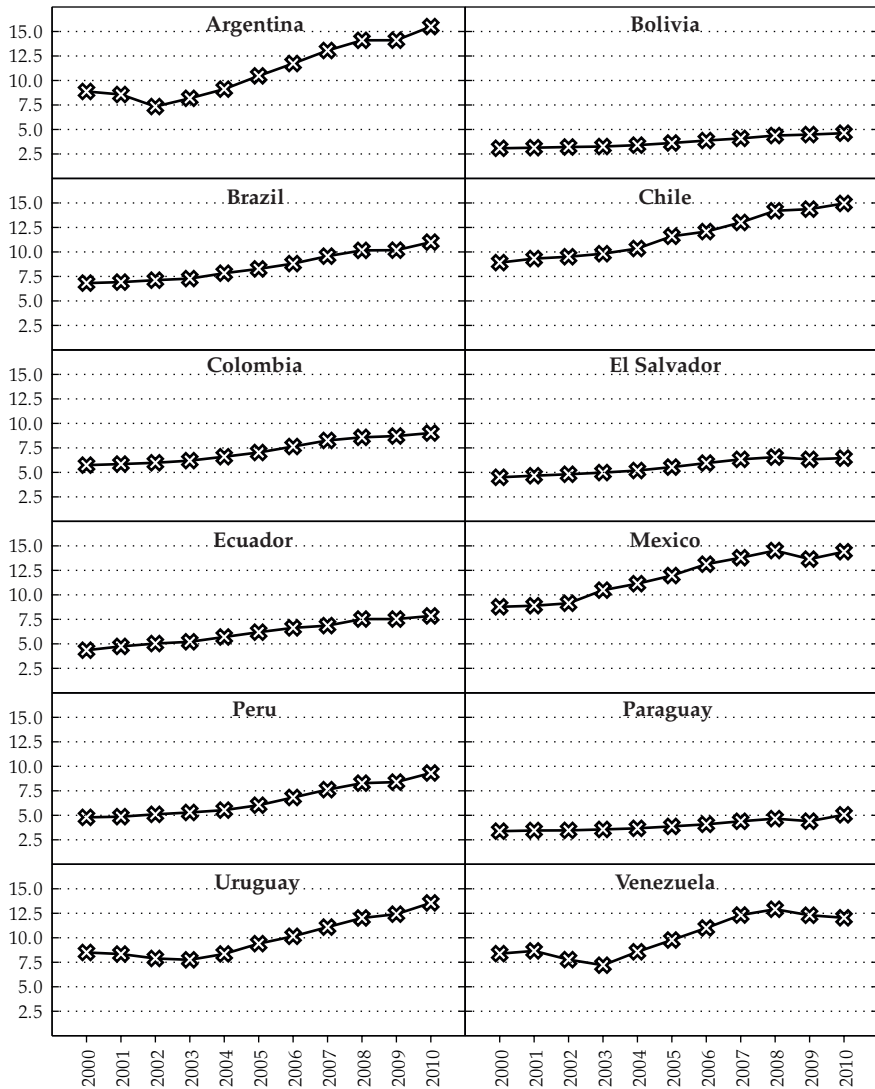
Chart 3.   Inequality, Gini coefficient, 2000 and 2010; annual average reduction rate
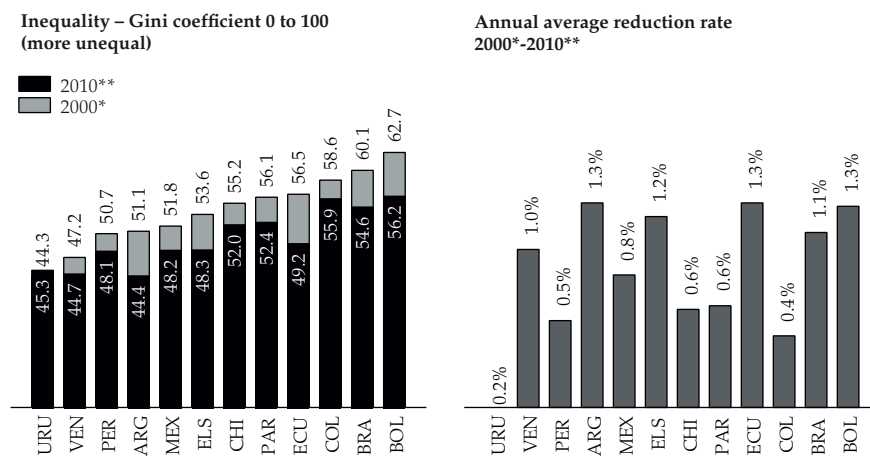
Inequality – Gini coefficient 0 to 100
(more unequal)

■ 2010**
■ 2000*

Annual average reduction rate
2000*-2010**

* Except BRA, ELS, PAR, VEN: 2001
**Except BRA, CHI, ELS: 2009; MEX, BOL:2008; VEN:2006

Source: World Bank. World Development Indicators and Global Development Finance.

The income growth was accompanied by the reduction of inequality in the distribution of household income per capita. In 11 countries, the Gini coefficient fell on average 0.89% per annum for the period observed – which varies from country to country in Chart 3. The only country with a higher inequality in 2010 than in 2000 is Uruguay, which, however, is one of the less unequal countries and was the less unequal in 2000, with the lowest recorded Gini. In fact, no country has yet achieved Uruguay's Gini level of the year 2000, and an interesting issue to be noted in the coming years is whether countries will be able to reduce their Gini coefficient below 40.

The inequality falling trajectories in those countries are more varied than those observed in relation to GNI, as can be seen from Chart 4. Brazil stands out for a continuous and almost linear decrease, without the atypical years of higher inequality seen in the series of various countries. Anyway, in some countries, notably Argentina, Peru and Uruguay, the beginning of the 2000s was marked by increased income inequality. In the

same way as observed for GNI, the inequality series also show the impact of the 2008-2009 crisis in countries whose data encompass this period. These countries had been experiencing the steepest declines in inequality from 2006-7, a trend which was almost interrupted in the 2008-9 period.

Chart 4.   Inequality, Gini coefficient, 2000-2010
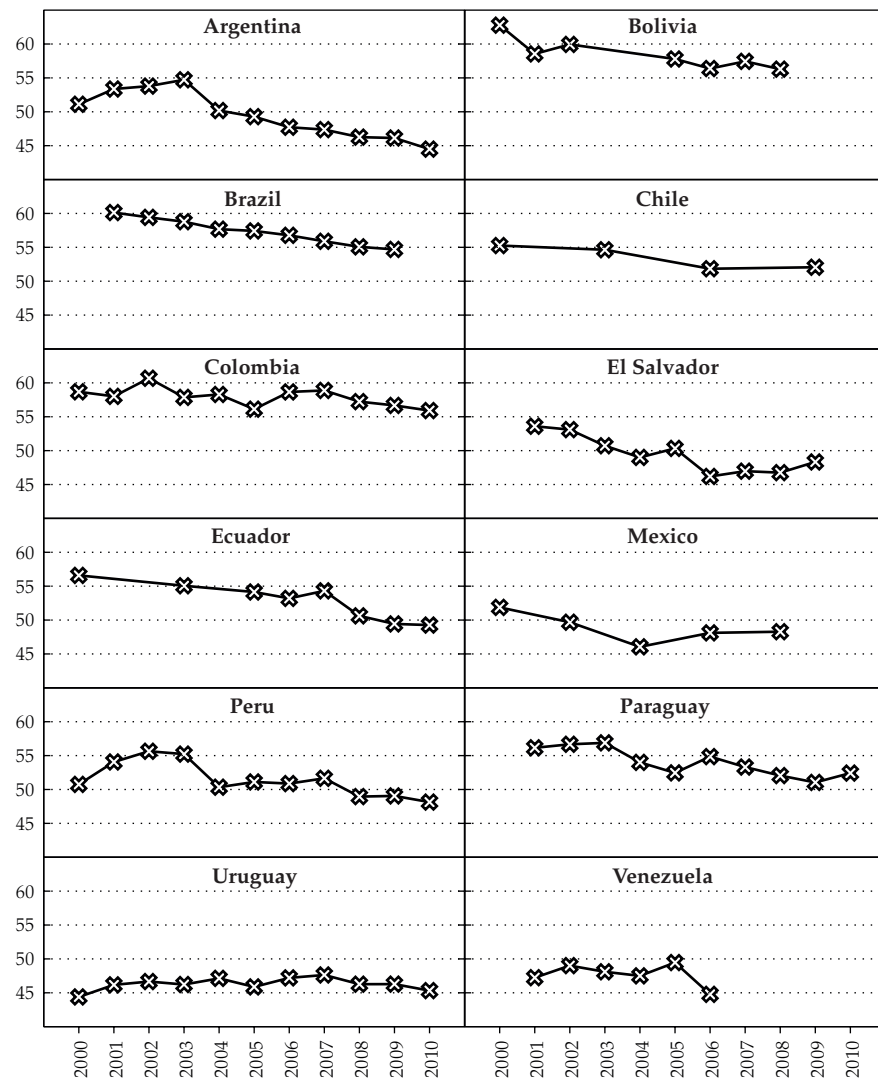
Source: World Bank. World Development Indicators and Global Development Finance.

Despite the decrease, inequality in the 12 countries considered remains high and the stratification of the population into quintiles according to the distribution of income does not change much, as shown in Chart 5. Despite the differences in Gini coefficients, the contours of stratification per income of the 12 countries are extremely similar. During the period, except in Uruguay, the four poorest quintiles of the distribution had their share of total income slightly increased compared with the share of the richest 20%. Still, at the end of the decade, the share of income secured by the richest 20% of the population ranged from 50 to 60% of total income, while in no country the share secured by the poorest 20% exceeded 5% of total income. Although the share of total income flowing to the poorest 20% remains very reduced in relative terms, its growth in the decade was substantial in several countries.

Chart 5. **Inequality, shares, percentage-wise, of the total income per household income distribution quintiles per capita**

2000 Argentina **2010**		**2000** Bolivia **2008**	

2000	Argentina	2010

2000 **Argentina** **2010**
3.2 7.5 12.7 21.3 55.1
4.3 9.3 14.7 22.1 49.3

2000 **Bolivia** **2008**
0.8 4.9 10.5 18.5 65.1
2.1 6.8 11.9 19.8 59.3

2001 **Brazil** **2009**
2.0 5.7 10.2 18.0 63.9
2.8 7.1 12.4 19.0 58.5

2000 **Chile** **2009**
3.6 7.0 10.9 17.7 60.5
4.2 7.9 11.7 18.3 57.7

2000 **Colombia** **2010**
1.9 6.7 10.9 18.1 62.2
3.0 6.8 11.2 18.7 60.1

2000 **Ecuador** **2010**
2.9 6.9 11.2 18.0 60.8
4.2 8.2 12.9 20.7 53.7

2000 **Mexico** **2008**
3.9 7.7 12.2 19.4 56.5
4.7 8.6 13.0 19.8 53.6

2000 **Peru** **2010**
3.3 7.8 12.9 21.0 54.8
3.9 8.3 13.6 21.5 52.5

2001 **Paraguay** **2010**
2.6 6.7 11.5 18.9 60.0
3.2 7.7 12.7 19.7 56.4

2001 **El Salvador** **2009**
2.2 7.2 12.6 20.9 56.8
3.7 8.8 13.7 20.6 53.0

2000 **Uruguay** **2010**
4.6 9.3 14.3 21.9 49.7
4.9 8.9 13.7 21.4 50.9

2001 **Venezuela** **2006**
3.9 8.8 13.7 21.5 51.9
4.2 9.5 14.6 22.1 49.4

Source: World Bank. World Development Indicators and Global Development Finance.

Income growth combined with a reduction in inequality reduced in all countries the percentage of the population living on less than US$ 1.25 a day, adjusted for purchasing power parity (PPP), the international

extreme poverty line defined by the World Bank and used by the United Nations as the main monitoring indicator of the first Millennium Development Goal (cutting, by 2015, the global extreme poverty rate to half of its 1990 level). The extreme poverty rate in 2000 or 2001, and in 2010 or another year close to that, as well as its annual average reduction rate can be seen in Chart 6. In the sub-chart on the left, the larger numbers in italics are related to 2010 and refer to the black bars.

Chart 6.   Extreme poverty rate US$ PPP 1.25/day, 2000 and 2010; annual average reduction rate
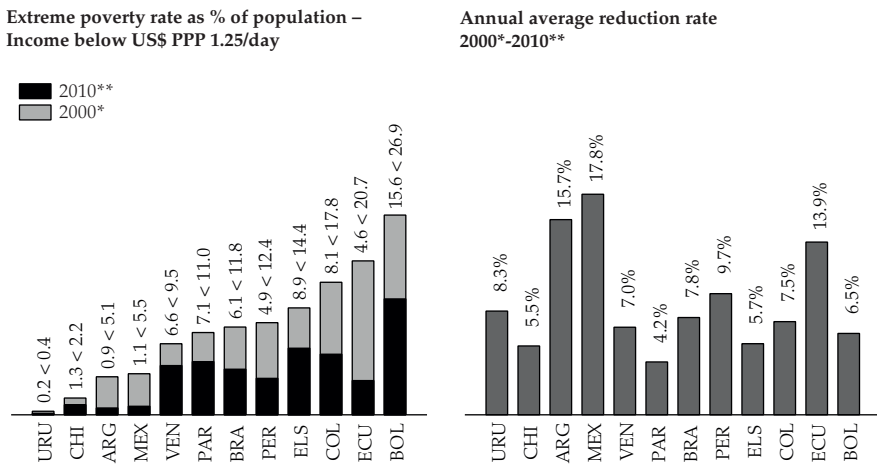
Extreme poverty rate as % of population – Income below US$ PPP 1.25/day

Annual average reduction rate 2000*-2010*

2010**
2000*

URU 0.2 < 0.4
CHI 1.3 < 2.2
ARG 0.9 < 5.1
MEX 1.1 < 5.5
VEN 6.6 < 9.5
PAR 7.1 < 11.0
BRA 6.1 < 11.8
PER 4.9 < 12.4
ELS 8.9 < 14.4
COL 8.1 < 17.8
ECU 4.6 < 20.7
BOL 15.6 < 26.9

URU 8.3%
CHI 5.5%
ARG 15.7%
MEX 17.8%
VEN 7.0%
PAR 4.2%
BRA 7.8%
PER 9.7%
ELS 5.7%
COL 7.5%
ECU 13.9%
BOL 6.5%

 * Except BRA, ELS, PAR, VEN: 2001
 **Except BRA, CHI, ELS: 2009; MEX, BOL: 2008; VEN: 2006

Source: World Bank. World Development Indicators and Global Development Finance.

Only Uruguay and Chile had an extreme poverty rate below 5% of the population in the early 2000s, but four more countries have achieved this target throughout the decade, especially Ecuador, going from second to last to fifth lowest on the extreme poverty ranking. All countries greatly reduced extreme poverty and only Bolivia had a rate above 10% of the population. Mexico and Argentina had notable performances, with the highest annual average reductions, despite starting from already very low rates in the early 2000s.

Chart 7.   Extreme poverty rate US$ PPP 1.25/day, 2000-2010
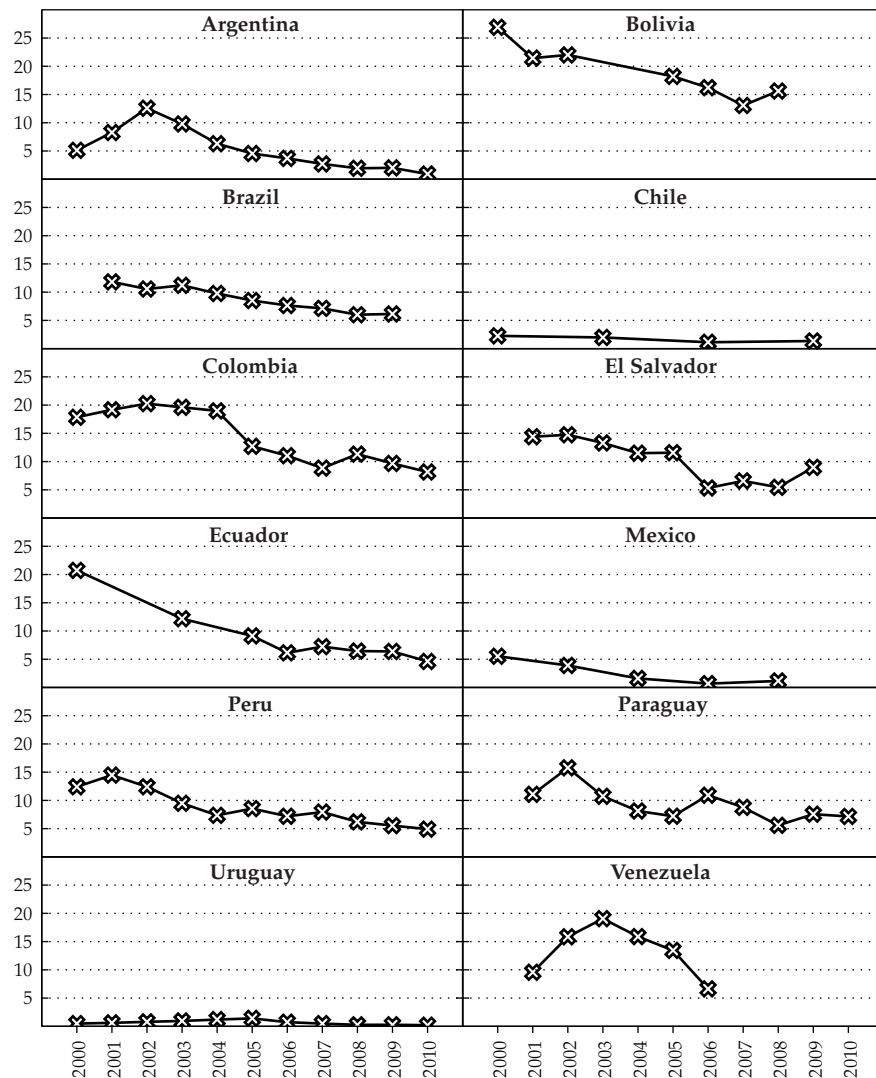
Source: World Bank. World Development Indicators and Global Development Finance.

Looking, at Chart 7, the trajectories of extreme poverty in each country and not taking into account Chile and Uruguay, whose rates were already very low at the beginning of the last decade, it is possible to note two groups. The first one is the most numerous and comprises countries

where most of the decline in extreme poverty occurred in the first half of the decade: Bolivia, Ecuador, Mexico, Paraguay and Peru. The second consists of Argentina, Colombia, El Salvador and Venezuela, where the bulk of the fall of the extreme poverty gap occurred in the middle of the decade, and in the case of Argentina and Venezuela it was preceded by an increase in the first years. Brazil does not fit well into either group because it had a continued decline of extreme poverty from 2001 to 2009.

Chart 8.   GNI growth, Gini reduction and extreme poverty reduction
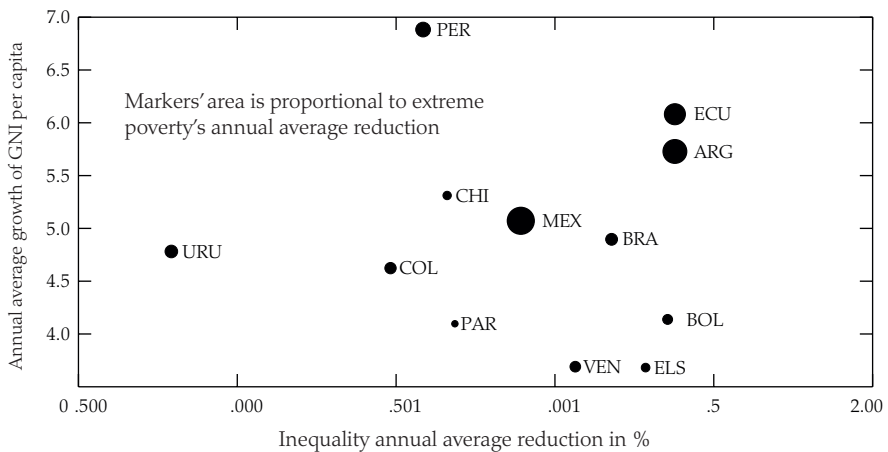
Source: World Bank. World Development Indicators and Global Development Finance.

Chart 8 links the drop in extreme poverty (markers' area) to the reduced inequality (horizontal axis) and GNI growth (vertical axis). Except for Mexico, countries that were most successful in reducing extreme poverty were also, not surprisingly, the ones that registered fastest growing and reduced inequality the most – Argentina and Ecuador –, and Peru, which offset a smaller inequality reduction with a greater GNI growth.

The reduction of extreme poverty gap was also substantive. Chart 9 shows that, in 2000 or 2001, only four of the 12 countries had a gap below 4% the per capita line. In the last year for which data is available, only Bolivia and El Salvador had the extreme poverty gap above 4%, with four countries boasting rates well below 1%. Over time, the extreme poverty gap follows just more smoothly the extreme poverty rate fluctuations, as

can be seen in Chart 10. That is, the theoretical cost per capita for the eradication of extreme poverty in the region (which is estimated by the gap as a percentage of the extreme poverty line) is very low.

Chart 9.   Extreme poverty gap US$ PPP 1.25/day, 2000 and 2010; annual average reduction rate
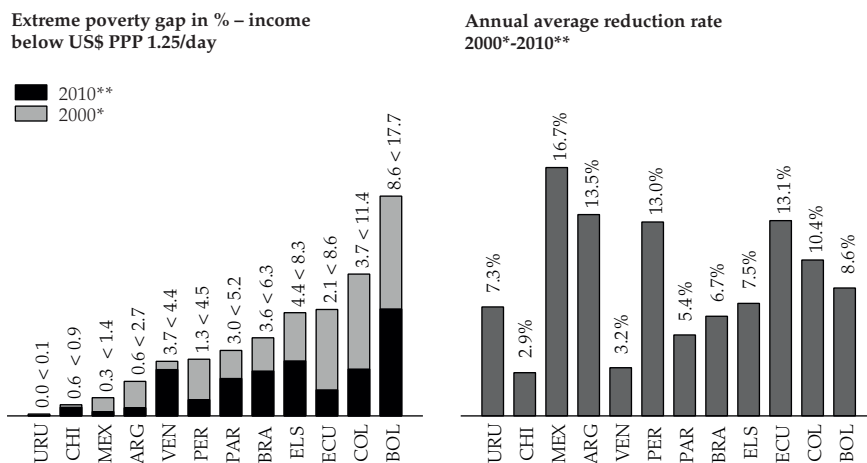
* Except BRA, ELS, PAR, VEN: 2001
**Except BRA, CHI, ELS: 2009; MEX, BOL: 2008; VEN: 2006

Source: World Bank. World Development Indicators and Global Development Finance.

Considering higher poverty lines, for example, US$ 2 PPP per capita daily, displayed in Chart 11, the rate reduction performance is somewhat smaller, but with a pattern similar to Chart 6 with regard to the extreme poverty line. As poverty reduction is linked to income growth and/or reduction of inequality, countries that performed better in reducing extreme poverty (Chart 8) were also the best for this higher line, in spite of some minor changes in their order.

In short, the indicators show that by taking income as an indicator of welfare, the 12 selected countries experienced unambiguous gains, with an overall reduction of poverty and extreme poverty. Much of these gains came from increased income, as shown by the GNI per capita growth. Another part stemmed from a very celebrated novelty, given the history

of these countries and Latin America: the fall of income inequality. Except for Uruguay, which in the early 2000s had reached a low level compared to regional standards, all recorded reductions in inequality; in some countries, the Gini coefficient fell at a rate of more than 1% per year. But there is still plenty of room for further drops. Inequality remains quite high compared to European countries, many of which have a Gini coefficient in the 20-30 points range: at the end of the decade, of the 12 countries surveyed, five still had a Gini coefficient over 50 and none below 40.

Chart 10.   Extreme poverty gap US$ PPP 1.25/day, 2000-2010
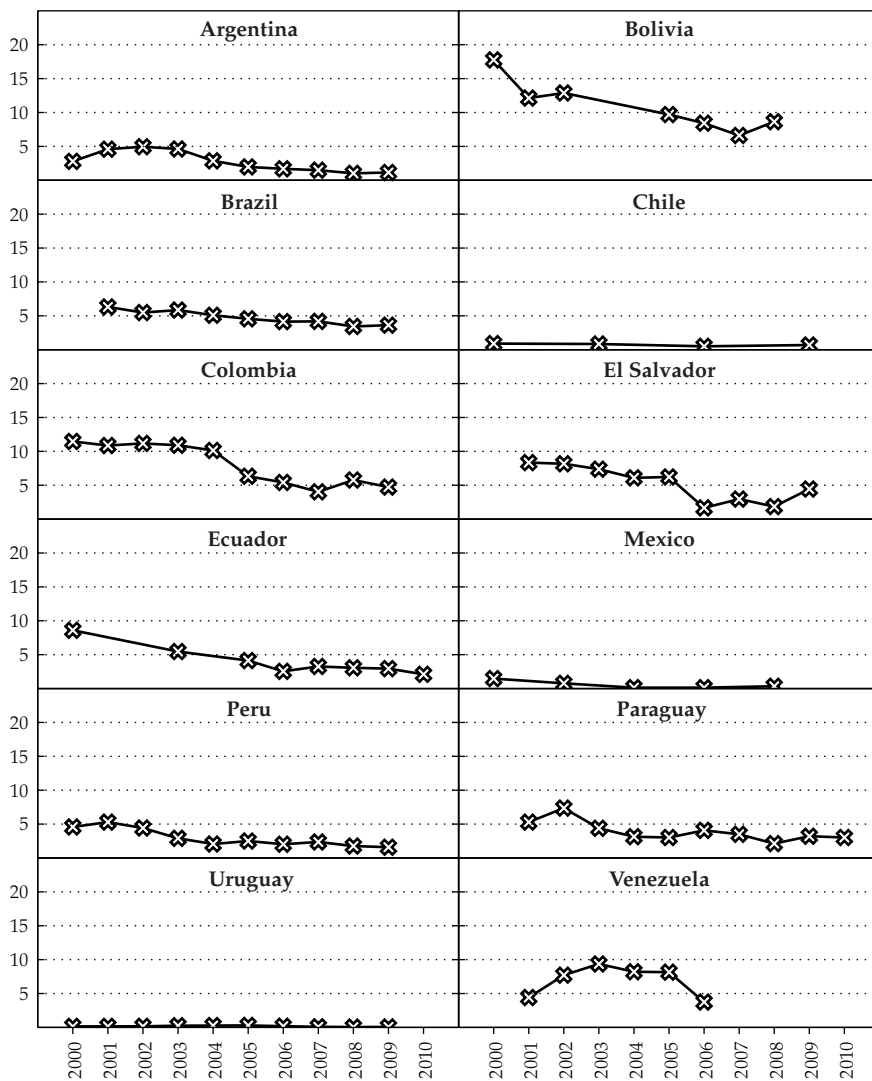
Source: World Bank. World Development Indicators and Global Development Finance.

Chart 11.   Poverty rate US$ PPP 2/day, 2000 and 2010; annual average reduction rate
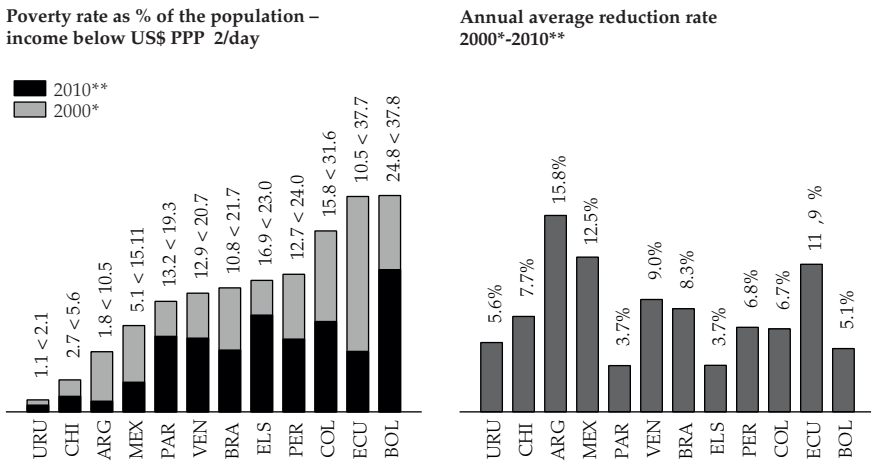
Poverty rate as % of the population –
income below US$ PPP 2/day

Annual average reduction rate
2000*-2010**

■ 2010**
▨ 2000*

*Except BRA, ELS, PAR, VEN: 2001
**Except BRA, CHI, ELS: 2009; MEX, BOL: 2008; VEN: 2006

Source: World Bank. World Development Indicators and Global Development Finance.

The fall of inequality was important to extend reductions of poverty and extreme poverty, but income growth seems to have been the main factor, since countries that have experienced larger reductions of poverty were the ones recording the greatest GNI growth. In this regard, Mexico stood out for having achieved a considerably higher reduction of extreme poverty than other countries, even those with higher growth and greater inequality reduction. Even more surprising is to see that Uruguay reached an extreme poverty rate of 0% (that is, statistically eradicated), although in the real world, there will still be people living in extreme poverty here and there. At least three more countries head towards an extreme poverty rate of 0% in the short term, if trends are upheld, namely: Argentina, Chile and Mexico. If the phenomenon of development with inclusive growth continues to manifest in the region, one can expect that, with some lag, other countries will repeat the feat and that, once extreme poverty is statistically eradicated, the largest groups of people living below the poverty line will also gradually decrease.

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The employment situation in Latin America in the first decade of the 2000s

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THE EMPLOYMENT SITUATION IN LATIN AMERICA IN THE FIRST DECADE OF THE 2000s

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1. INTRODUCTION

After at least two decades (1980s and 1990s) of great political instability, strong economic fluctuations and remarkable social deterioration in virtually all Latin American countries, the end of the first decade of the 2000s brought new life to the region in the political, economic and social dimensions.

Perhaps it was no coincidence that, after the great neoliberal wave with its uniform package of liberalizing reforms had generated poor results from an economic standpoint, a certain political-institutional change leftward of the electoral spectrum managed to reconcile the maintenance of price stability with the resumption of economic growth rates somewhat higher than the average for the period 1980-2000[1], amid an extremely favorable external environment for the region.

This combination of factors, which we call "democracy with political and institutional positions slightly leaning to the left", associated with the matching of the "resumption of some economic growth with the con-

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[1] The "economically favorable external environment" is understood as the situation in which the excess of foreign currency within the countries of the region, observed in general terms in the period 2000-2008 helps – in contexts of relatively flexible exchange rate policy and decreasing tariffs on imported goods – both to converge domestic prices to international prices, internally balancing the inflation rate, as to increase the purchasing power of domestic wages, which increases the domestic demand vector linked to household consumption against the national growth rate in each case. In turn, the "excess of foreign currency" (mainly U.S. dollars) in Latin America between 2000 and 2008 stemmed both from abundant international liquidity – which generates net inflows of external resources, either to be applied in the domestic stock exchange or to purchase government bonds in local currencies or even, finally, in the form of foreign direct investment – and positive export balance of foreign trade of each country, a fact resulting mainly from higher in-demand commodities prices or the influence of American and Asian growth (especially the "China effect") for the period.

tinued stability of inflation" during practically all the first decade of the 2000s is what would have allowed some cooling or even reversal of social trends deleterious to the population of these countries. In particular, we must highlight some vigorous movement to restructure the labor market in almost all of Latin America, a movement that had been associated with phenomena related to the recovery, in general, of the workforce's employment, the formalization of employment contracts, the more than proportional increase of remuneration of the social pyramid base, with consequent distributive improvement within the working class.

Thus, this paper analyzes the employment situation in Latin America in the 2000s through the analysis of labor market indicators of some of its most populous countries, namely, Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. We begin with a study of demographic aggregates, such as population and working-age population (WAP – people aged 15 and over). Next, we analyze labor aggregates, such as the economically active population (EAP – part of the WAP found in the labor market, employed or unemployed) and its components, relating to unemployment and employment. We then finalize with a somewhat more detailed study of the employed population, focusing on the employment structure in the region. The idea which pervades the text is that, in the 2000s, the labor market worked in a way to include with a greater quality broader population groups (with the partial exception of the Mexican population). In the final considerations, some hypotheses are raised to help explain this higher level (and best way) of labor inclusion in Latin America.

2. POPULATION

Due to the variety of national realities in all Latin America, this analysis of the employment situation focuses on those countries that account for the largest portion of the population: Brazil, Mexico, Colombia, Argentina, Peru, Venezuela and Chile. This group accounts for over 80% of the total population of the 20 Latin American countries from 2000 to 2010 (Figure 1 and Table 1). Considering the extremes between these years, this group shows a population growth of 12.7%, which means an

increase of 53.1 million inhabitants over the period. Some countries stand out for a more significant growth, such as Venezuela (19%) and Colombia (16.4%), where the demographic transition appears somewhat slower. On the other hand, this transition appears to be faster in other countries because they already show a less significant population growth, such as Argentina (9.4%). In turn, Brazil and Mexico, which have the greatest number of inhabitants in Latin America, are in an intermediate situation (11.8% and 12.9% growth from 2000 to 2010, respectively) (Figure 1 and Table 1).

Figure 1.   Population of Latin American countries (from 2000 to 2010 – in millions)
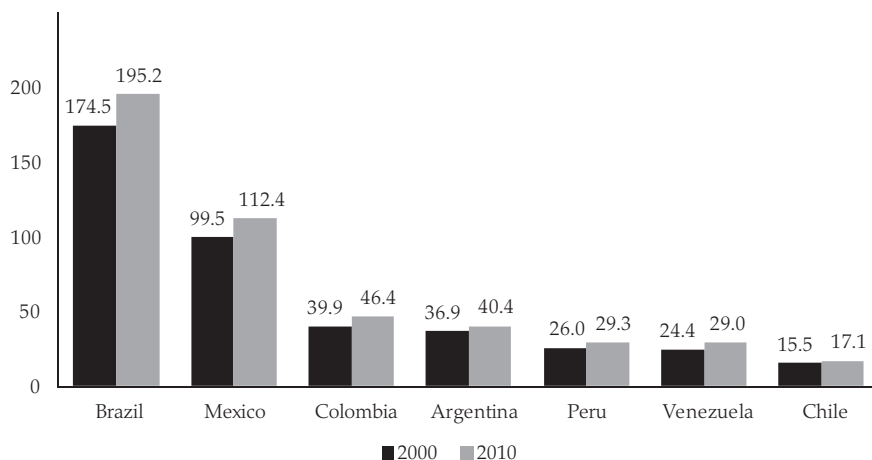
Source: CELADE-ECLAC.

Table 1.   Population of Latin American countries (from 2000 to 2010)

(In millions)	2000	2010	Var.2010-2000 (Millions)	Var.2010-2000 (%)
Brazil	174.5	195.2	20.6	11.8
Mexico	99.5	112.4	12.8	12.9
Colombia	39.9	46.4	6.5	16.4
Argentina	36.9	40.4	3.5	9.4
Peru	26.0	29.3	3.3	12.6
Venezuela	24.4	29.0	4.6	19.0
Chile	15.5	17.1	1.7	11.0
Subtotal (A)	416.7	469.8	53.1	12.7
Total L.A. (B)	509.8	577.3	67.6	13.3
(A) / (B) (%)	81.7	81.4	-	-

Source: CELADE-ECLAC/UNPD.

In the analyzed countries, population growth occurs in between the demographic transition, with significant aging of the age structure. This can be seen in the fluctuation of the partial components of the total dependency ratio, which decreases in Argentina (from 60.9% to 55%), Brazil (from 54.1% to 47.8%), Chile (from 53.9% to 45.6%), Colombia (from 60.2% to 52.4%), Mexico (from 62.2% to 52.4%), Peru (from 63.7% to 56.2%) and Venezuela (from 62.1% to 54.1%). If the total dependency ratio decrease in all countries it is only due to the lower weight of children and youth up to 14 years of age in the population, because the weight of the elderly follows a reverse trend from 2000 to 2010. The elderly dependency ratio, which reflects the population aged 65 or older, increases in Argentina (from 16% to 16.4%), Brazil (from 8.5% to 10.2%), Chile (from 11.2% to 13.4%), Colombia (from 7.6% to 8.6%), Mexico (from 8.5% to 9.9%), Peru (from 7.9% to 9.4%) and Venezuela (from 7.4% to 8.7%).

From the labor market standpoint, the declining total dependency ratio currently translates into a greater possibility of economic growth of Latin American countries, with more people involved in the production and distribution of goods and services. However, from the perspective of frameworks that rely on the labor market and has the labor market as its cost base, such as social security and health structures, the increased elderly dependency ratio poses some challenges for the future, since it will probably mean a greater need for disbursements, either in terms of cash transfers or in terms of service delivery (Figure 2 and Table 2).

Figure 2.   **Age dependency ratio in Latin American countries (Total ratio – from 2000 to 2010 – in %)**
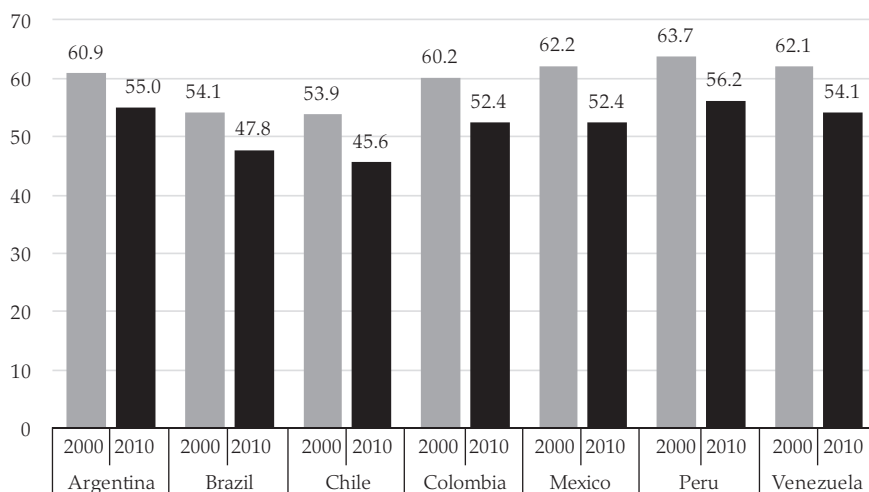
Obs: Children and Youth Group: up to the age of 14. Elderly Group: aged 65 or over.

Source: CELADE-ECLAC.

Table 2.   **Age dependency ratio (children and youth, elderly and total) of Latin American countries (from 2000 to 2010 – in %)**

		Ratio – C / Y	Ratio – Elderly	Ratio – Total	Ratio – Total (Var. 2010-2000 (%))
Argentina	**2000**	44.9	16.0	60.9	-
	2010	38.5	16.4	55.0	-6.0
Brazil	**2000**	45.6	8.5	54.1	-
	2010	37.6	10.2	47.8	-6.2
Chile	**2000**	42.8	11.2	53.9	-
	2010	32.2	13.4	45.6	-8.3
Colombia	**2000**	52.6	7.6	60.2	-
	2010	43.8	8.6	52.4	-7.8
Mexico	**2000**	53.7	8.5	62.2	-
	2010	42.5	9.9	52.4	-9.8
Peru	**2000**	55.8	7.9	63.7	-
	2010	46.8	9.4	56.2	-7.6
Venezuela	**2000**	54.7	7.4	62.1	-
	2010	45.4	8.7	54.1	-8.0

Obs: Children and Youth Group: up to the age of 14. Elderly Group: aged 65 or over.

Source: CELADE-ECLAC.

3. WAP and EAP

In the group of seven countries, WAP shows a higher growth when compared with the total population. Between 2000 and 2010, the former increases 19.1%, which represents 56.9 million people, against 12.7% of the general population. Again, this indicates an improvement in demographic transition, with an aging age structure in Latin America. The most significant WAP growth, as in the case of the total population, can be seen in Venezuela (26.6%) and Colombia (23.5%), while the least significant is the case of Argentina (14%). Brazil and Mexico remain in intermediate positions in terms of increased WAP throughout the period (18.4% and 18.6%, in that order) (Figure 3 and Table 3).

Figure 3.   Comparison of population and WAP evolution in Latin American Countries (from 2000 to 2010 – in %)
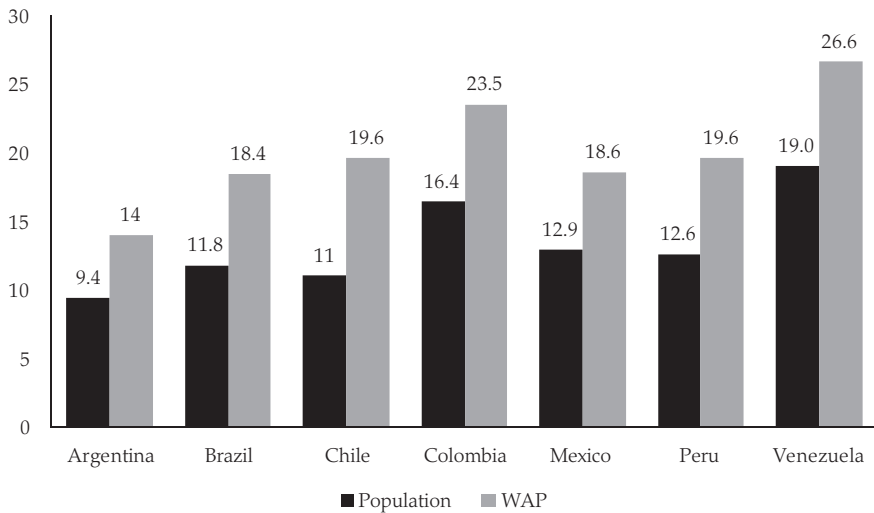
P.S.: WAP: aged 15 and over.

Source: CELADE-ECLAC.

Table 3. **Working Age Population of Latin American countries (aged 15 and over – from 2000 to 2010 – in millions and %)**

(In millions)	2000	2010	Var.2010-2000 (millions)	Var.2010/2000 (%)
Argentina	26.6	30.3	3.7	14.0
Brazil	122.9	145.5	22.6	18.4
Chile	11.2	13.4	2.2	19.6
Colombia	26.8	33.1	6.3	23.5
Mexico	77.2	91.6	14.4	18.6
Peru	17.1	20.5	3.4	19.6
Venezuela	16.2	20.5	4.3	26.6
Total	298.0	354.8	56.9	19.1
(In %)	2000	2010	Var.2010-2000 (%)	Var.2010/2000 (%)
Argentina	8.9	8.5	-0.4	-
Brazil	41.2	41.0	-0.2	-
Chile	3.7	3.8	0.0	-
Colombia	9.0	9.3	0.3	-
Mexico	25.9	25.8	-0.1	-
Peru	5.8	5.8	0.0	-
Venezuela	5.4	5.8	0.3	-
Total	100.0	100.0	0.0	-

Source: CELADE-ECLAC.

With regard to the EAP, its growth is even higher than the WAP. In all the countries studied, the EAP increased by 23.6% between 2000 and 2010 (which means 43.7 million people), compared with 19.1% by the WAP. With the exceptions discussed next, this EAP increase can be interpreted as an indicator of a better functioning of the Latin American labor market, as well as an indicator of greater level of "inclusion" of the population in the primary income distribution mechanisms over the period. EAP's growth is particularly strong in Venezuela (34.2%) and slightly less prominent in Brazil (21%) and Argentina (22.3%). Other countries are in an intermediate situation, around 25% EAP growth between 2000 and 2010 (Figure 4 and Table 4).

Figure 4.   Comparison of WAP and EAP evolution in Latin American countries (15 years and over – from 2000 to 2010 – in %)
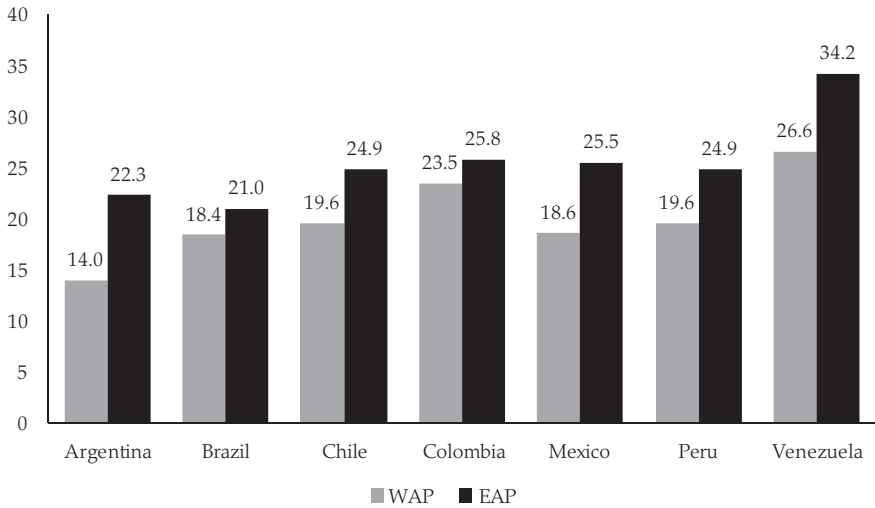
Source: CELADE-ECLAC.

Table 4.   **Economically active population of Latin American countries (15 years and over – from 2000 to 2010 – in millions and %)**

(In millions)	2000	2010	Var.2010-2000 (millions)	Var.2010-2000 (%)
Argentina	15.5	19.0	3.5	22.3
Brazil	85.0	102.9	17.9	21.0
Chile	6.2	7.7	1.5	24.9
Colombia	19.2	24.1	4.9	25.8
Mexico	38.9	48.8	9.9	25.5
Peru	11.6	14.5	2.9	24.9
Venezuela	8.9	11.9	3.0	34.2
Total	185.3	228.9	43.7	23.6
(In %)	2000	2010	Var.2010-2000 (%)	Var.2010-/2000 (%)
Argentina	8.4	8.3	-0.1	-
Brazil	45.9	44.9	-0.9	-
Chile	3.3	3.4	0.0	-
Colombia	10.3	10.5	0.2	-
Mexico	21.0	21.3	0.3	-
Peru	6.2	6.3	0.1	-
Venezuela	4.8	5.2	0.4	-
Total	100.0	100.0	-	-

Source: CELADE-ECLAC.

The largest progress of the EAP compared to the WAP is the increased rate of activity or participation of the population in the labor market in Latin America. Observing all the seven countries, the rate increases from 62.2% to 64.5% between 2000 and 2010. Focusing on each country separately, the rate grows across the board, without exception. Some have activity rates in higher levels, above 70% of the WAP, such as Brazil (70.7%), Colombia (72.8%) and Peru (70.5%). Others show lower rate levels, such as Argentina (62.7%), Chile (58%), Mexico (53.3%) and Venezuela (58.3%). However, these rates grow during the period in all countries (Figure 5 and Table 5).

The increased rate of activity in Latin America is mainly due to the greater presence of women in the labor market. On the one hand, only three countries (Argentina, Peru and Venezuela) recorded a growth rate among the male population, and even so, in small percentages (up to 1.4%). On the other hand, in all seven countries analyzed, a rate incre-

ase was reported among the female population with percentages of 7% (Argentina), 3.2% (Brazil), 5.2% (Chile), 3.2% (Colombia), 5.9% (Mexico), 4.5% (Peru) and 6.3% (Venezuela). In other words, deepening a movement originated in past decades, women increased their participation in the labor market, which can also be comprehended as an indicator of a greater level of "inclusion" of this segment in the period 2000-2010, albeit with the caveats presented later (Figure 6 and Table 6).

Figure 5.   Participation/activity rate of Latin American countries (15 years and over – from 2000 to 2010 – in %)
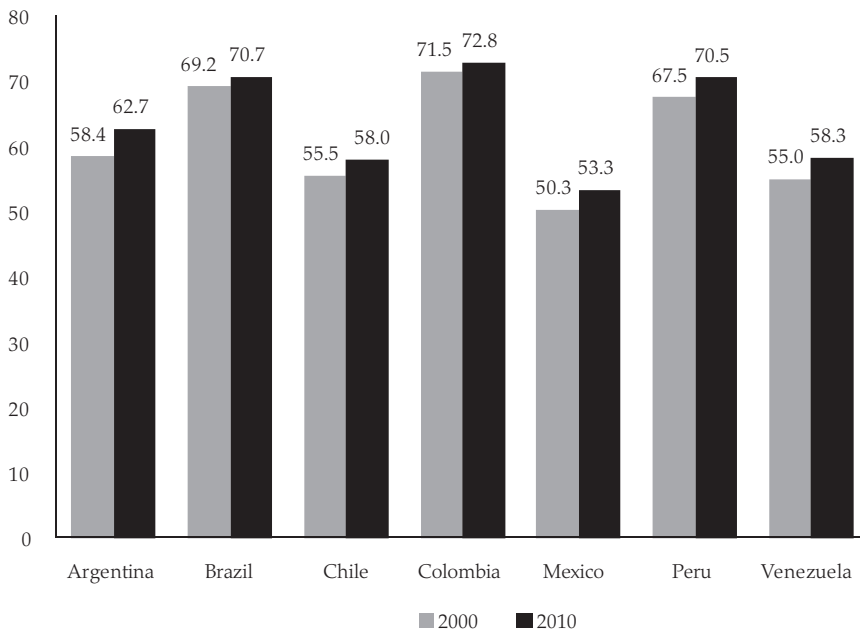
Source: CELADE-ECLAC.

Table 5. **Participation/activity rate of Latin American countries (15 years and over – from 2000 to 2010 – in %)**

(In %)	2000	2010	Var.2010-2000 (%)
Argentina	58.4	62.7	4.2
Brazil	69.2	70.7	1.5
Chile	55.5	58.0	2.4
Colombia	71.5	72.8	1.3
Mexico	50.3	53.3	2.9
Peru	67.5	70.5	3.0
Venezuela	55.0	58.3	3.3
Total	62.2	64.5	2.3

Source: CELADE-ECLAC.

Figure 6. **Participation/activity rate evolution in Latin American countries per sex (from 2000 to 2010 – in %)**
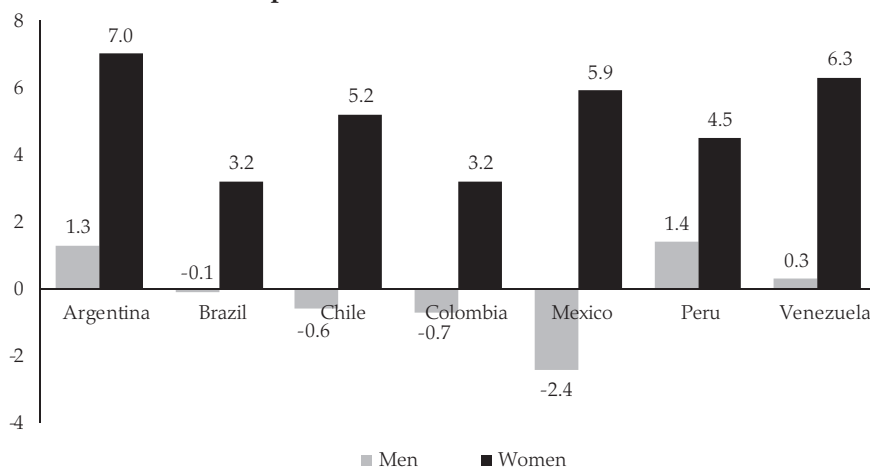
Source: CELADE-ECLAC.

Table 6.   **Participation/activity rate in Latin American countries per sex (15 years and over – from 2000 to 2010 – in %)**

Men	2000	2010	Var.2010-2000 (%)
Argentina	73.6	74.8	1.3
Brazil	83.1	82.9	-0.1
Chile	74.0	73.4	-0.6
Colombia	86.4	85.7	-0.7
Mexico	80.1	77.7	-2.4
Peru	78.7	80.1	1.4
Venezuela	72.8	73.1	0.3
Women	2000	2010	Var.2010-2000 (%)
Argentina	44.3	51.3	7.0
Brazil	56.0	59.2	3.2
Chile	37.8	43.1	5.2
Colombia	57.5	60.7	3.2
Mexico	37.7	43.6	5.9
Peru	56.5	61.0	4.5
Venezuela	37.2	43.5	6.3

Source: CELADE-ECLAC.

4. Unemployment

By analyzing the EAP, the first thing that strikes the eye is the increased level of employment along with the unemployment level decrease throughout the 2000s in Latin America. In most countries studied, the unemployment rate falls sharply, especially in Argentina (from 19.7% to 7.7%), Brazil (from 11.7% to 6.7%), Colombia (from 17.3% to 12.4%) and Venezuela (from 15.8% to 8.6%). The rate shrinks slightly in Peru (8.5% to 7.9%) and remains stable in Chile (9.7%); Mexico is the only country reporting a rate increase, almost doubling the earlier value (from 3.4% to 6.4%). Thus, if in the majority of countries the activity rate increases between 2000 and 2010, this occurs through higher employment and lower unemployment. This can be understood as indicating a greater level of "inclusion" of the Latin American labor market. If more people flock to this market, more and more people do so under an employment status, except for the Mexican case, for reasons discussed ahead (Figure 7 and Table 7).

Figure 7. **Open unemployment rate (average annual rate) in urban areas in Latin American countries (early and late 2000s – in % of EAP)**
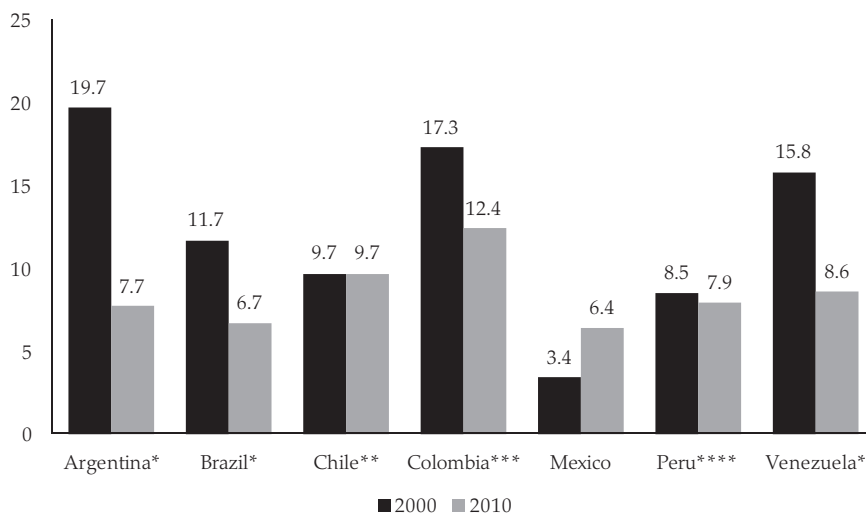
Table 7. **Open unemployment rate (average annual rate) in urban areas in Latin American countries (early and late 2000s – in % of EAP)**

	2000	2010	Var.2010-2000 (%)
Argentina*	19.7	7.7	-12.0
Brazil*	11.7	6.7	-5.0
Chile**	9.7	9.7	0.0
Colombia***	17.3	12.4	-4.9
Mexico	3.4	6.4	3.0
Peru****	8.5	7.9	-0.6
Venezuela*	15.8	8.6	-7.2

5. Employment

Another aspect that stands out in the analysis of the EAP is the greater level of organization of the occupational structure in most of the seven countries studied, which can be somehow translated into the increased presence of employees in this structure. Some countries have higher wage rates, such as Argentina (69.8%), Chile (72.1%) and Mexico (75.2%). Others have intermediate rates, such as Brazil (63.8%), or lower rates, such as Colombia (45.7%), Peru (49.8%) and Venezuela (55.5%). But in the 2000s, wage advances in almost all the countries studied – except for the case of Colombia, that shrinked 1.8%, and Peru, where it remained stable.

Although this contingent still has much to grow in Latin America, the greater presence of employees in the occupational structure, concomitant with the lower presence of self-employed workers and other types of workers, can be seen as an indicator of a more efficient labor market. After all, in most countries, employees, at least those registered by the State, have a number of labor and non-labor protections that other types of workers do not get. Protections related to employment stability, wage guarantee, fixed working hours, protection against accident/illness, guaranteed retirement, and so on. (Figure 8 and Table 8).

Figure 8. **Employees participation in urban employment (early and late 2000s – in % of total employment)**
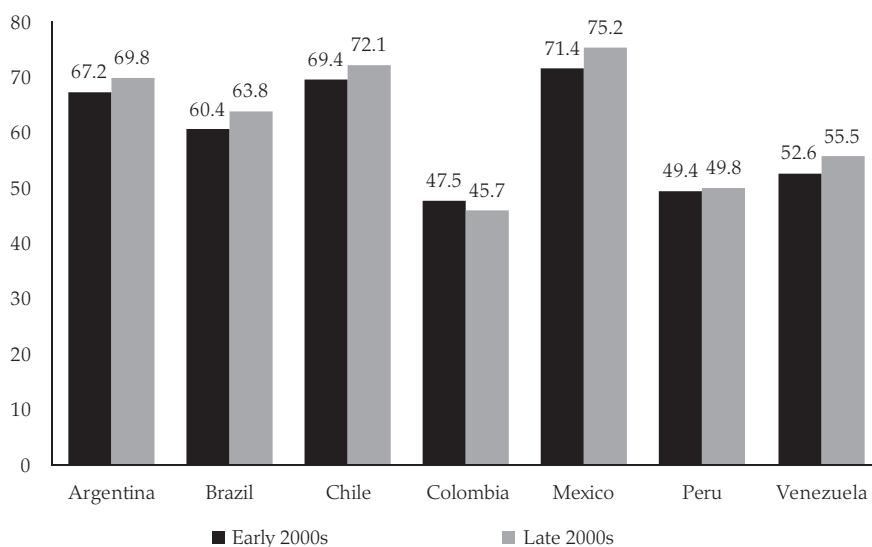
Source: CELADE-ECLAC.

Table 8. **Urban employment structure per category (Early and late 2000s – in % of total employment)**

Argentina		Employers	Employees	Self-employed	Domestic work	Total
	2002	4.0	67.2	23.9	4.9	100.0
	2010	4.5	69.8	19.0	6.7	100.0
Brazil		Employers	Employees	Self-employed	Domestic work	Total
	2001	4.7	60.4	26.2	8.7	100.0
	2009	4.8	63.8	23.0	8.4	100.0
Chile		Employers	Employees	Self-employed	Domestic work	Total
	2000	4.5	69.4	19.7	6.4	100.0
	2009	3.1	72.1	19.8	5.0	100.0
Colombia		Employers	Employees	Self-employed	Domestic work	Total
	2002	5.1	47.5	41.9	5.5	100.0
	2010	4.9	45.7	45.3	4.1	100.0

Mexico		Employers	Employees	Self-em-ployed	Domestic work	Total
	2000	4.5	71.4	21.0	3.1	100.0
	2010	7.3	75.2	13.8	3.7	100.0
Peru		Employers	Employees	Self-em-ployed	Domestic work	Total
	2007	6.2	49.4	39.6	4.8	100.0
	2010	6.2	49.8	39.9	4.1	100.0
Venezuela*		Employers	Employees	Self-em-ployed	Domestic work	Total
	2002	5.5	52.6	39.3	2.6	100.0
	2010	3.5	55.5	39.6	1.4	100.0

* Total employment (urban and rural).

Source: CELADE-ECLAC.

The highest level of organization of the occupational structure of the seven countries can also be observed in the lowest participation of workers in informal or low-productivity employment throughout the 2000s, according to ECLAC's categorization. It includes: i) employers and employees in microenterprises ii) unskilled self-employed workers; and iii) domestic employees. The burden of informal employment declines a little between 2000 and 2010 in countries that already showed a higher level of organization of their occupational structure, such as in Argentina (from 41.5% to 38.9%), Brazil (from 45.6% to 40.9%) and Chile (31.8% to 30%). The burden of informality also slightly declines in countries that showed a lower level of organization, such as Venezuela (from 58% to 51.8%).

Running counter these positive Latin American dynamic are Peru, where the burden of informal employment remains stable (around 59%), and especially Mexico, where such employment increases its share (from 42% to 44.1%). Anyway, informality in the employment structure decreases in most of the countries analyzed, which can be understood as an indicator of a better functioning labor market in Latin America. It is true that employment in microenterprises, in unskilled self-employed services and domestic services still have a very significant burden. However, the reduction of their relative importance in the 2000s is no less significant, because workers in these jobs seldom have the protections described above, related to the workplace and outside the workplace (Figure 9 and Table 9).

Figure 9. Urban employment in the informal sector (low productivity) (early and late 2000s – in % of total employment)
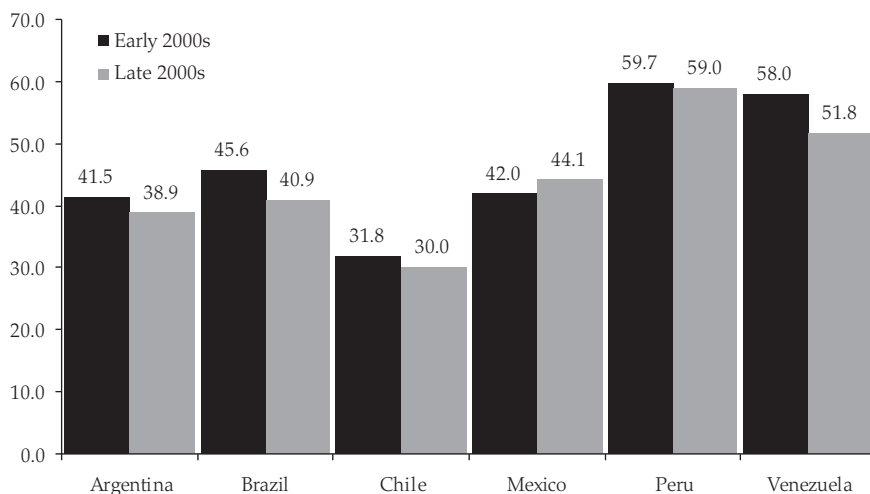
P.S.: There is no comparable information available for Colombia between early and late 2000s.

Source: CELADE-ECLAC.

Table 9. Urban employment in the informal sector (low productivity) (early and late 2000s – in % of total employment)

Argentina		Microenterpri-ses - Employers	Microenterpri-ses - Employees	Domestic Employees	Unskilled Self-employed workers	Total
	2002	2.9	15.2	4.9	18.5	41.5
	2010	3.2	14.3	6.7	14.7	38.9
Brazil		Microenterpri-ses - Employers	Microenterpri-ses - Employees	Domestic Employees	Unskilled Self-employed workers	Total
	2001	2.2	10.7	8.7	24.0	45.6
	2009	2.4	10.3	8.4	19.8	40.9
Chile		Microenterpri-ses - Employers	Microenterpri-ses - Employees	Domestic Employees	Unskilled Self-employed workers	Total
	2000	2.4	8.3	6.4	14.7	31.8
	2009	1.1	7.1	5.0	16.8	30.0

Colombia		Microenterprises - Employers	Microenterprises - Employees	Domestic Employees	Unskilled Self-employed workers	Total
	2002	-	-	5.5	38.8	44.3
	2010	4.1	10.8	4.1	40.7	59.7
Mexico		Microenterprises - Employers	Microenterprises - Employees	Domestic Employees	Unskilled Self-employed workers	Total
	2000	3.7	16.0	3.0	19.3	42.0
	2010	6.4	21.9	3.7	12.1	44.1
Peru		Microenterprises - Employers	Microenterprises - Employees	Domestic Employees	Unskilled Self-employed workers	Total
	2007	5.2	12.4	4.8	37.3	59.7
	2010	5.2	12.1	4.1	37.6	59.0
Venezue-la*		Microenterprises - Employers	Microenterprises - Employees	Domestic Employees	Unskilled Self-employed workers	Total
	2002	4.6	13.2	2.6	37.6	58.0
	2010	2.8	10.3	1.4	37.3	51.8

P.S.: There is no comparable information available for Colombia between early and late 2000s.

Source: CELADE-ECLAC.

Related to the previous points, the highest level of organization of the employment structure of Latin American countries over the 2000s can also be seen in the lower share of workers in vulnerable occupations. According to the World Bank's classification, these include self-employed workers and unpaid family workers. The burden of vulnerable jobs is decreasing in all countries, whether in those displaying a greater level of organization in their occupational structure, such as Argentina (from 22.8% to 19.6%), Brazil (from 27.4% to 25.1%) and Chile (from 27.6% to 24.9%), or in those showing a lower level of organization, such as Peru (from 43.7% to 39.6%) and Venezuela (from 36.9% to 30.8%). The only exception to this scenario is Colombia, where vulnerable jobs increased from 43.4% to 47.7% of all occupations between 2000 and 2009. Anyway, with the exception of Colombia's case, the employment structure's vulne-rability is reduced in the other Latin American countries, which can also be understood as an indicator of a better functioning labor market (Figure 10 and Table 10).

Figure 10. Vulnerable urban employment (self-employment and unpaid family work) (early and late 2000s – in % of total occupation)
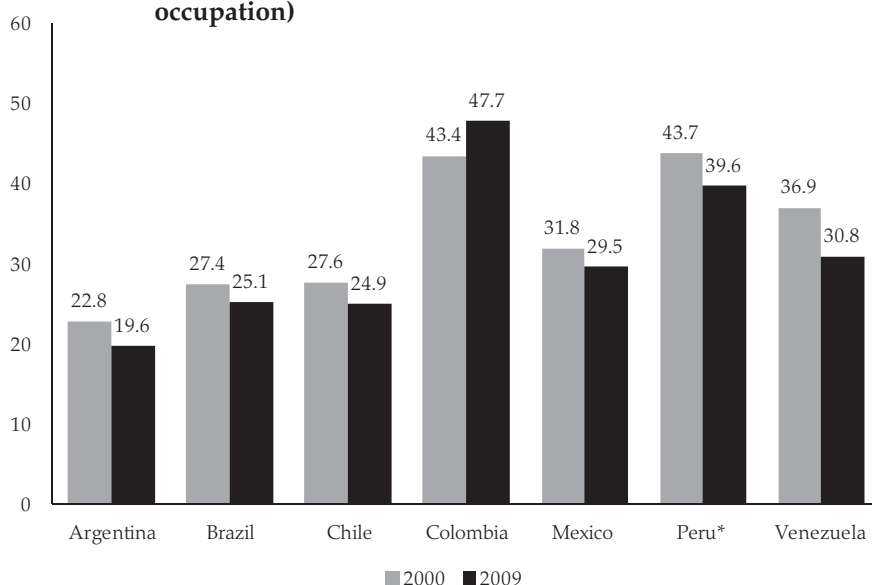
Table 10. Vulnerable urban employment (self-employment and unpaid family work) (early and late 2000s – in % of total occupation)

	2000	2009	Var.2010-2000 (%)
Argentina	22.8	19.6	-3.2
Brazil	27.4	25.1	-2.3
Chile	27.6	24.9	-2.7
Colombia	43.4	47.7	+4.3
Mexico	31.8	29.5	-2.3
Peru*	43.7	39.6	-4.1
Venezuela	36.9	30.8	-6.1

Finally, between 2000 and 2010, the distribution of employment by various economic sectors shows some variations in the seven countries studied. In most cases, employment in mining and processing industries shows a decrease, while commerce and services employment follows an opposite trend, with an increase in the number of workers. But the largest variations in the employment's sectoral structure are concentrated in two specific countries. First, in Mexico, where secondary sector workers shrink by no less than 5.3%, while those of the tertiary sector expand 5.1%. Then, they are concentrated in Chile, where industry workers fall 3.7% and those of trade/services increase by 3.2%. In the other countries, including Argentina, Brazil, Colombia and Peru, the sectoral structure suffers less pronounced fluctuations in the 2000s. Noteworthy is the case of Argentina, where employment in the secondary sector increases by 1%, while it decreases by 3.1% in the tertiary sector, against the dynamics observed in the other Latin American countries (Figure 11 and Table 11).

Figure 11. Non-agricultural urban employment structure evolution per economy sector (early and late 2000s – in %)

P.S.: There is no comparable information available for Venezuela between early and late 2000s.

Source: CELADE-ECLAC.

Table 11.   **Non-agricultural urban employment structure per economy sector (early and late 2000s – in % of total employment)**

		Industry	Construction	Trade/Services	Total
Argentina	**2002**	13.3	6.8	79.9	100.0
	2010	14.3	8.9	76.8	100.0
Brazil		Industry	Construction	Trade/Services	Total
	2001	17.1	8.4	74.6	100.0
	2009	16.4	8.9	74.7	100.0
Chile		Industry	Construction	Trade/Services	Total
	2000	17.7	9.2	73.1	100.0
	2009	14.0	9.7	76.3	100.0
Colombia		Industry	Construction	Trade/Services	Total
	2002	17.9	5.9	76.2	100.0
	2010	16.4	6.6	77.0	100.0
Mexico		Industry	Construction	Trade/Services	Total
	2000	22.9	8.2	68.9	100.0
	2010	17.7	8.4	74.0	100.0
Peru		Industry	Construction	Trade/Services	Total
	2007	16.3	5.7	78.0	100.0
	2010	15.3	7.1	77.6	100.0
Venezuela		Industry	Construction	Trade/Services	Total
	2000	-	-	-	-
	2010	-	-	-	-

P.S.: There is no comparable information available for Venezuela between early and late 2000s.

Source: CELADE-ECLAC.

6. Final considerations

Latin America has undergone significant transformations in the 2000s which also signaled a greater and also a better inclusion of the population in the primary income distribution circuits available in the labor market. This can be noted from the EAP growth, boosted by the participation of women. It can also be observed through the higher employment rate, concomitantly with the lowest level of unemployment in almost all countries. With specific regard to employment, a greater organization can be seen in its structure, due to higher wage-earning and lower informality in most countries. Thus, the meaning of transformation becomes clear, which was to increase quantitatively and improve qualitatively the inclu-

sion of the Latin American population in the income distribution labor mechanisms.

The importance of this matter can only be assessed when recalling that, in the 1990s, the dynamic was the opposite. In countries like Argentina, Brazil, Colombia, Peru and Venezuela, involved in large economic, social and political changes, the labor market worked towards excluding various population groups. The employment level declined, while unemployment advanced and the occupational structure was disrupted, with lower wage-earning and higher informality, amid strong changes within the sectoral structure. And so we ask ourselves: which economic, social and political factors may account for the change in the dynamics of the Latin American labor market in the 2000s? Have these factors worked in the same way, in the same direction and with the same intensity in all countries or where there variations, on account of very different labor background between them? Some rather incipient and preliminary clues are available to help answer these questions.

Initially, it is necessary to separate the Mexican reality from the reality of South American countries; the Mexican reality is similar to that of Central American countries. Between 2000 and 2010, this country witnesses a progressive deterioration of its economic model of industrial export oriented to North America. This model has been built since 1986 in the wake of liberal reforms that included the easing of markets for goods, services and labor; the liberalization of trade, finance and technology flows; and the privatization of the State's roles. Such a model found a more defined shape with the adherence of Mexico to the North American Free Trade Agreement (NAFTA) in 1992, in which a new industrial economy emerged, different from the previously existing one, which was based on exporting manufactured goods to the U.S. through the sub-compensation of productive factors, especially labor, whose regulation was deconstructed. This economy has witnessed an accelerated growth of the Mexican GDP until the year 2000, but this growth has not been accompanied by redistribution effects in benefit of the population, due to insufficient and precarious state initiatives, both in labor, through unemployment insurance and minimum wage policies, and in the social sector, through education, health, social security and assistance policies.

It is worth noting that this insufficiency and precariousness of state initiatives has been correlated with the emptying of the Mexican State, occurred in the wake of liberal reforms. Finally, when the North American demand for manufactured products weakened after 2001, no other component was able to uphold the leverage of GDP growth (such as household consumption). Thereafter, and for much of the 2000s, the labor market indicators examined above began to reflect the deterioration of the industrial exporting model of Mexico, similar to what happened in some Central American countries.

A different reality was witnessed by South American countries. Since 1990, Brazil, Peru, Colombia and Venezuela have implemented liberal reforms, while Argentina and Chile enhanced those started some years earlier. Roughly speaking, the flexibility of markets, the liberalization of flows and privatization of state functions led to disorganization of the current economic model, which already showed signs of exhaustion since at least 1980, primarily due to the depletion of manufacturing as a dynamic source. This disruption transpired in the limited and unstable growth of GDP in the region, which, from a business perspective, was associated with reduced profitability and capital disinvestment, especially in manufacturing. From labor's perspective, it was linked to increased unemployment and falling labor compensation. It is worth noting that, in the midst of this process, several attempts were made to stabilize national currencies, based on restrictive policies from the monetary, foreign exchange, credit, fiscal and tax point of view, and the nature of these policies further contributed to the negative trend of GDP in South America. The situation began to change in the early 2000s, when national States started to abandon the more restrictive aspects of monetary stabilization initiatives, as could be seen in Brazil and Argentina. This abandonment was facilitated by the new economic model that began to emerge, East Asia-oriented primary exporter. Funds accumulated through this new model made it possible to maintain stable currencies, with a smaller monetary, foreign exchange, credit and fiscal contraction. And so they favored the accelerated and steady growth of GDP, also due to the great inflow of foreign direct investment, which flocked to South America with a less contracted economic scenario. From the corporate standpoint, this product's behavior

meant more profitability and investment, whereas from the workers perspective, it resulted in more employment and remuneration, as it appears in labor indicators already examined. Finally, one aspect of the economic model that began to emerge in the early 2000s was the importance of state GDP redistribution initiatives through labor and social policies. A result of the successful democratic political transitions in the 1980s, or the failure of liberal economic transitions of the 1990s, the renewed importance of labor and social policies is an aspect that distinguishes the South American experience from the Mexican one in the latest period. This is because such policies mean that the national States bet on a multiplicity of components able to leverage GDP growth beyond exports of agricultural goods and minerals. And this bet, focused on components such as household consumption, proved to be important when the economic crisis started in 2008, when foreign demand shrank in North America and Europe (and to a lesser degree, also in Asia). Despite the crisis, a reciprocal and positive dynamic relationship between domestic consumption, social policy and labor market indicators was established in South American countries, as seen above.

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Social Security in Latin America

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Social Security in Latin America

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1. Presentation

Welfare systems are key elements within social security programs offered by various countries. A common feature among various welfare systems is that their goal is to provide public insurance against some of life's contingencies, such as illness, disability and death.

First, this report presents demographic indicators showing that Latin American countries already feel and will increasingly experience in the future the pressure on welfare systems. Then, it addresses issues concerning the reforms taken place in the 1990s. Section 4 shows the impact of the 2008 financial crisis at the privatization of welfare systems, the topic of the previous section. Section 5 presents data on pension coverage of the economically active population (EAP) and the elderly. Also in this section, there is information of coverage to the elderly through noncontributory retirement systems, which were created to reduce the under-coverage of elderly in several countries. The sixth and final section shows the final considerations of this report.

2. The role of demography

With regard to welfare systems, one of the main challenges is related to demographic trends, especially the fall in the birth rate, the decrease in mortality rate (albeit slower than the birth rate) and population aging. The interesting thing about demography is that when a country achieves progress on the living conditions of people, its response exerts some pressure on pension systems.

It may be noted that projections point to a sharp increase in the median age in all the selected countries. According to the projection, in 2050 Brazil and Chile will have the highest median age, while Bolivia and Venezuela will be the ones with the lowest value (Table 1).

The rise in the median age of the population is reflected in the rise of one of the main demography indicators that interest scholars in welfare issues: the percentage of population aged 60 or over. Data shows that, with the exception of Argentina and Uruguay, which in 2000 showed a high percentage of elderly in the population, all other countries will have more than twice the percentage of elderly. Projections indicate values around 30% in Brazil and Chile, the highest projected percentages for 2050 (Table 2).

Another very important demographic indicator for the study of social security is the dependency ratio. According to Table 3, this indicator decreased in all selected countries between 2000 and 2010. When this happens, it is common to say that the country is experiencing the so-called demographic bonus[1]. However, the trend in most countries for 2050 is a increase in the dependency ratio. Projections show that Chile (81.7), Brazil (79.7) and Uruguay (78.4) will have the highest indicators in 2050, while Bolivia (58.7), Paraguay (61.8) and El Salvador (64.7) will have the lowest.

The dependency ratio is one of the best indicators when it comes to demographic pressure on welfare policies. The higher the number of inactive peoples against the working age population, the greater the pressure on the system. The issue is even more delicate in Latin American countries due to the large number of workers in the informal economy that do not contribute to the welfare system. The demographic factor and the labor market situation were the main factors responsible for the reform movement that affected Latin American welfare systems in the 1990s, which will be the subject of the next section.

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1   The demographic bonus occurs when most of the population is of working age.

3. Crisis and reforms

Demographic trends were undoubtedly a factor of pressure on the financial stability of welfare systems in many countries. Specifically in Latin America, the rules for granting and calculating benefits in several countries were another element of pressure in the upswing of welfare spending. But we have to highlight the severe economic crisis faced by these countries in the 1980s, which cost millions of jobs and created more difficulties in financing welfare policies.

The conjunction of the crisis in the labor market, sometimes benevolent rules and population aging generated a serious crisis on welfare systems in Latin America in the 1980s and 1990s. This crisis triggered a series of parametric and structural[2] reforms in welfare systems in many Latin American countries.

As can be seen from Table 4, eight countries out of the group of the twelve selected underwent total or partial privatization in their welfare systems. Except for Eastern European countries, nowhere on the globe have there been so many structural reforms in pension systems. It is worth noting that countries that did not reform their systems structurally put in place a series of structural changes. All countries changed their pension systems over the past 20 years.

One could mention the main advantages of a funded pension system with individual accounts: greater transparency; greater incentive for workers to accumulate resources in their individual accounts and curbing the influence of demographic factors on the system's sustainability. There are also some positives points related to macroeconomic variables, such as the increased availability of resources (due to individual savings) that can be directed to productive activities.

When it comes to the disadvantages, the main one is that the distributive element of the pension system is lost when it shifts from pay-as-

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2   Parametric reforms modify retirement parameters such as age, contribution years and calculation of benefit amounts. In turn, structural reforms shift from the pay-as-you-go pension system to one with individual accounts, also known as (partial or total) privatized welfare systems. A country may shift its funding scheme from capitalization to pay-as-you-go, which is also a structural reform.

you-go to capitalization, since individuals have now received the accumulated value of their contributions and investment income, minus all costs. The main inconvenience related of the capitalization scheme is its high costs. Even in a mature system like Chile's, whose reform occurred in 1981, the high costs of managing pension funds are still being discussed. The consequences of high costs will be felt when the employee retires and receives a retirement value way below the expected level, due precisely to these costs.

Thus, one can summarize that pension systems based on individual capitalization accounts exchange demographic risk for market risk. Population aging and rising dependency ratio no longer represent direct risks to the long-term sustainability of the system. However, since the funds saved are invested in financial assets, should those assets depreciate, the system could go wrong and would not be able to replace the income of its members properly. Finance models show that it is possible to mitigate the risk of an investment by diversifying the portfolio of resources correctly. The problem arises when we seek this correct portfolio, especially when the market as a whole faces a crisis. The next section of this report shows some of the impacts of the 2008 financial crisis on pension systems of Latin American countries that underwent structural reforms.

4. Impacts of the 2008 financial crisis on privatized pension systems

By observing the real rate of return from countries that have privatized their pension systems, it is possible to understand the negative impact represented by the crisis, especially in 2008 (Chart 1. Real rates of gross income in selected countries – Jan/Dec 2008 1).

As can be seen, the impact of the financial crisis on privatized pension systems in the selected Latin American countries was heterogeneous. In Bolivia, profitability was the lowest negative observed at 1.9%, whereas Peru recorded the largest negative drop by 26.7%.

To better understand the impact of the crisis on the profitability recorded in 2008, it is necessary to look at other annual results to have a

picture of privatized systems' results. Table 5 shows the cumulative profitability from 2002 to 2009. Its data shows, on the one hand, that the 2008 crisis caused the cumulative result for that year to go back to levels observed in 2004 in Uruguay, in 2005 in Bolivia and Chile and in 2006 in other selected countries. On the other hand, the strong real return observed in 2009 helped recover losses of the previous year in Bolivia, El Salvador and Mexico, but was insufficient to that end for other countries.

One of the main inferences that can be done on the cumulative results presented is that the worker who planned to retire in 2008, either did so with a much lower than expected benefit or had to postpone his plans to exit the labor market. For those already retired, the 2008 result represented a huge drop in their accumulated assets that may result in lower benefits in the near future.

The strongly negative 2008 result generated losses in accrued assets for workers and retirees in countries that privatized to some extent their social security system. But an interesting safeguard must be made here: we are always talking about workers affiliated to the social security system or retired, that is, always referring to workers covered by their own pension system. It is known that Latin America has a huge undercoverage problem of the working population. In many countries, more than half of the economically active population is unprotected in terms of welfare. This is precisely the subject of the next section.

5. Contributory and Non-Contributory Pension Coverage

The coverage of contributory social security programs shows the percentage of the economically active population (EAP) which contributes to the system in relation to the total EAP. Its measurement is important, among other reasons, because it indicates how much of the EAP will be entitled to the contributory pension benefit and what is the potential public claiming for non-contributory (or care) benefits in the future, which is completely relevant, since one of the roles of a social security system is to prevent individuals from the risk of poverty when in old age.

Table 6 shows that the group of countries consisting of Brazil, Chile and Uruguay has the highest EAP coverage. In the last available year, these countries covered more than half of the EAP. At the extreme opposite are El Salvador, Paraguay and Peru, with less than 30% EAP coverage.

When comparing data from the beginning and the end of the decade, it is possible to see that all countries, except El Salvador, perceived an improvement in the EAP coverage (Chart 2. Pension coverage of EAP in selected countries – 2000/2010 2). Data displays a strong coverage growth in Chile. In absolute terms, the last measurement registered more than 15 percentage points higher with respect to the oldest one. In percentage terms, Peru had the highest increase (35%) going from 13.7% to 18.5% coverage, which is still a very low figure.

It is also important to measure the pension coverage of the elderly[3], since this age group usually has a low participation rate in the labor market and, therefore, their main source of income is no longer the job. The higher the coverage, the lower the number of elderly living in poverty.

Argentina recorded the largest increase in absolute terms of coverage of the elderly during the decade (Chart 3). It is worth recalling that, in 2008, the Argentinian government decided to renationalize its pension system and also adopted laws with clear incentives to increase pension coverage of both workers and the elderly. Regarding the elderly, in general, access to social security benefits was facilitated upon contribution deducted from benefits to be received of those who lacked certain periods of contribution in order to be eligible for retirement.

Also according to Chart 3, except for Argentina, Brazil and Uruguay, all other countries showed low pension coverage for the elderly. This may mean high poverty incidence in the elderly population. One way to mitigate this risk is to introduce non-contributory benefits for them.

Latin American countries began to implement non-contributory pension schemes mainly from the 1990s. It was a movement which recognized that the low social security membership of the working population generates a number of elderly who are unable to work and left without any

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3   Pension coverage for the elderly is defined here as the number of people aged 65 years or over who receive (contributory or non-contributory) social security benefits in relation to all aged 65 years or over.

kind of social security protection from the contributory system. Thus, the non-contributory benefits act as a mechanism to combat poverty among the elderly, especially those who have no contributory retirement system. Table 5 shows countries with non-contributory programs, selection tool and minimum age to access the benefits.

As can be seen in Table 7, only Bolivia has a universal non-contributory social security program. Other countries require people to meet income criteria, and some, to fit into certain categories based on responses to socioeconomic questionnaires. The advantage of universal programs is that they cater for everyone from a certain age, but their fiscal cost tends to be higher. Therefore, this type of solution is not very common.

One of the main results expected from the privatization of pension systems, that is the raising of the pension coverage increase of the EAP, was not achieved. On the contrary, in most countries the coverage reduced, resulting in a low coverage among the elderly. These uncovered elderly are exactly the public targeted by non-contributory programs. It is noteworthy to mention that, even in countries that have not privatized their pension system (Brazil is the best example), non-contributory programs have been established or expanded also to cover the population not protected by the contributory pension system.

Table 8 shows the coverage of non-contributory pension programs in selected countries in the last year with available data. The largest programs are in Brazil and Mexico. Also noteworthy in terms of size are Chile and Argentina's programs.

6. Final considerations

Welfare systems are key elements in social security programs offered in different countries. One of its main functions is to provide a public insurance against certain contingencies such as illness, disability, death and old age. Additionally, since with advancing age individuals lose working capacity and thus the ability to generate income through labor pension systems also play a role in combating poverty in old age.

To understand the current situation and future challenges of pension systems in Latin American countries, it is particularly important to resume, albeit briefly, the process of crisis and reforms which occurred during the 1990s. It is a fact that most Latin American countries have been noting the demographic consequences of the improvement of living conditions of their populations, and these consequences represent demographic pressures on social security systems. However, this argument requires further study since while demography is a major element of pressure on pension systems in European countries with mature age structures one cannot say the same for Latin America.

Pension coverage is historically lower in Latin America compared to Europe. Thus, the labor market becomes another element of pressure on pension systems in Latin American countries due to the recurrent problems of inadequate funding as a consequence of unemployment and informality.

The combination of demographic factors and especially the structural change in labor markets in the 1980s and 1990s culminated in several pension systems reforms in Latin America. The most dramatic solution was the privatization of the Chilean system in 1981; therefore, way before the discussions about deeper reforms in other countries took place. During the 1990s, several Latin American countries, with the help of organizations like the World Bank and the IMF, reformed their systems the way Chile did. In fact, even those who did not adopt structural reforms implemented the so-called parametric reforms. In other words, all countries changed their pension systems.

An important point of discussion encompassing the entire debate on structural *versus* parametric reforms relates to the functions of a pension system. If only those who contributed will receive benefits and these benefits are directly linked to the contributions paid during the working life, the income replacement function is being privileged over the distributive functions and, especially, the fight against poverty. So, regarding Latin America, where the income replacement function prevailed in a scenario with a historically low social security participation rate for EAP, the outcome was a large number of elderly without pension coverage, which potentially increases the risk of becoming poor in old age.

Several countries have adopted non-contributory pension systems to address the pension coverage *gap*. Some of them are very large, such as in Brazil and Mexico, while others are still incipient, such as in Peru. The idea is to use these benefits as a way of transferring income to the elderly and reducing their risk of entering poverty.

Despite several reforms, current and future challenges are still being discussed. Ensuring the population's income at the stage of life where earning income from work is no longer possible becomes increasingly imperative. The challenge is to fulfill this role while maintaining the long-term sustainability and not forgetting that there are large numbers of workers who need to be included in the pension systems.

Chart 1.   Real rates of gross income in selected countries – Jan/Dec 2008
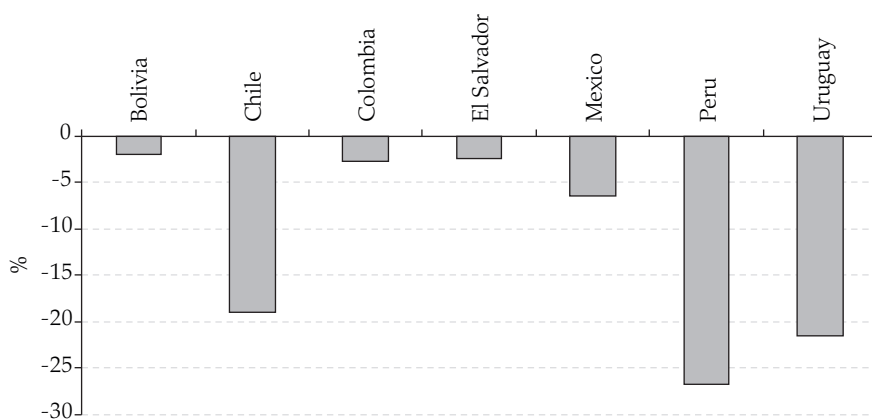
Source: AIOS 2008.

Note: Gross return does not take into account the effect of administrative fees charged.

Chart 2.   Pension coverage of EAP in selected countries – 2000/2010
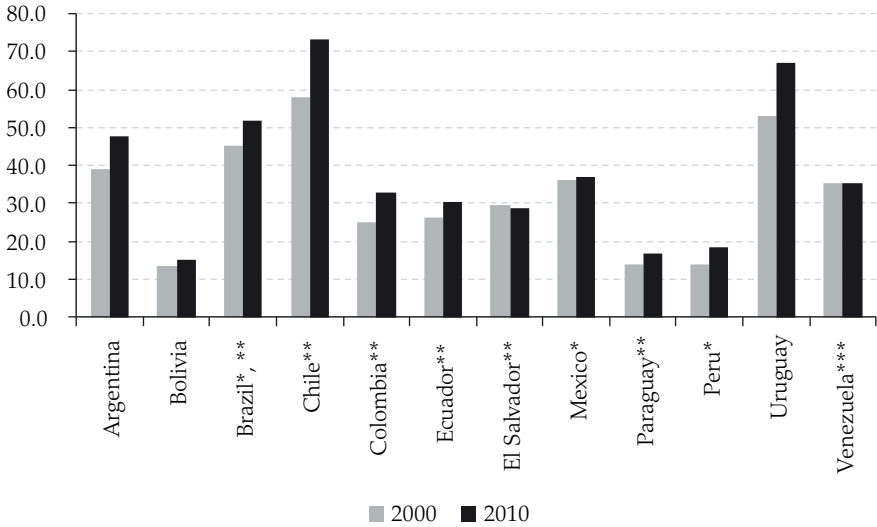
Source: Rofman and Oliveri (2011).
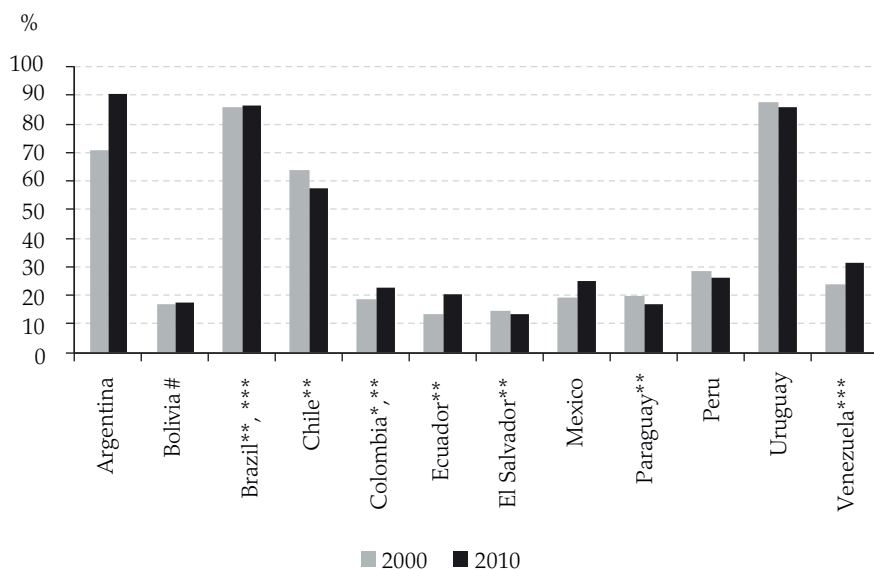
*   Data from 2001.

**   Data from 2009.

*** Data from 2006.

Chart 3.   **Pension coverage of the elderly population in selected countries – 2000/2010**

%

Source: Rofman and Oliveri (2011).

*   Data from 2001 (the one from 2000 is not available)

**   Data from 2009 (last available data)

*** Data from 2006 (last available data)

Data from 2007 (last available data)

Table 1. Median age in selected countries – remarks and projections

	2000	2010	2020	2030	2040	2050
Argentina	27.9	30.4	32.9	35.6	38.2	40.6
Bolivia	20.0	21.7	24.6	28.3	32.3	36.3
Brazil	25.3	29.0	33.5	37.7	41.5	45.2
Chile	28.7	32.1	35.5	39.5	43.2	45.6
Colombia	23,8	26.8	29.8	32.9	35.7	38.3
Ecuador	22.6	25.6	29.0	32.7	36.6	40.4
El Salvador	20.7	23.2	27.0	31.6	35.9	39.7
Mexico	23.4	27.4	31.4	35.8	40.1	43.8
Paraguay	20.4	23.1	26.2	29.8	33.5	37.4
Peru	22.9	25.6	28.8	32.4	36.0	39.3
Uruguay	31.6	33.8	35.6	37.9	40.6	42.9
Venezuela	23.3	26.1	29.3	32.5	35.6	38.6

Source: CELADE-CEPAL. Revised in 2011.

Table 2. Percentage of population aged 60 or over in selected countries – remarks and projections

	2000	2010	2020	2030	2040	2050
Argentina	13.6	14.6	16.4	18.3	21.8	25.3
Bolivia	6.4	7.1	8.7	10.8	13.9	17.7
Brazil	8.1	10.2	14.0	18.9	24.0	29.5
Chile	10.2	13.1	17.6	23.0	26.5	30.6
Colombia	6.9	8.6	12.0	16.2	19.6	22.9
Ecuador	7.4	9.0	11.9	15.4	19.7	24.5
El Salvador	8.0	9.4	10.8	13.3	16.5	21.5
Mexico	7.5	9.2	12.5	17.0	23.2	27.9
Paraguay	6.5	7.7	9.7	12.0	14.7	19.6
Peru	7.2	8.8	11.1	14.5	18.6	22.8
Uruguay	17.4	18.5	20.2	22.3	25.3	27.8
Venezuela	6.7	8.6	11.5	15.1	18.5	22.5

Source: CELADE-CEPAL. Revised in 2011.

Table 3. Dependency rate in selected countries – remarks and projections

	2000	2010	2020	2030	2040	2050
Argentina	70.9	65.3	64.9	64.1	68.4	74.3
Bolivia	85.6	75.9	65.5	59.0	57.0	58.7
Brazil	60.6	55.3	52.3	57.7	67.0	79.7
Chile	61.3	54.4	59.1	68.0	72.0	81.7
Colombia	65.8	59.6	60.7	64.9	67.9	72.5
Ecuador	71.8	64.8	61.2	60.8	64.1	71.1
El Salvador	86.2	70.7	60.8	57.4	56.3	64.7
Mexico	68.2	59.1	55.8	58.1	67.5	77.7
Paraguay	80.8	70.0	63.6	58.4	56.3	61.8
Peru	70.4	63.2	59.2	59.6	63.0	68.5
Uruguay	72.2	69.3	68.8	70.4	74.6	78.4
Venezuela	68.0	61.6	60.6	61.5	63.7	69.2

Source: CELADE-CEPAL. Revised in 2011.

Dependency rate = ((pop. 0-14 + pop. 60 or over) / pop. 15-59) * 100

Table 4. Structural reforms of Social Security in selected countries

	Year	Structural
Argentina	1993	Yes
Bolivia	1997	Yes
Brazil	–	No
Chile	1981	Yes
Colombia	1994	Yes
Ecuador*	2001	No
El Salvador	1998	Yes
Mexico	1998	Yes
Paraguay	–	No
Peru	1993	Yes
Uruguay	1996	Yes
Venezuela	–	No

Source: The Americas Social Security Report – 2010.

Table 5. **Real gross profit accumulated in selected countries –**
2002/2009

	2002	2003	2004	2005	2006	2007	2008	2009
Bolivia	115.5	124.6	131.7	136.3	140.2	136.1	133.5	143.4
Chile	103.0	113.8	123.9	129.6	150.1	157.6	127.8	143.1
Colombia	100.0	100.0	110.4	131.4	134.9	136.1	132.5	155.4
El Salvador	102.4	107.3	109.8	111.4	112.8	114.3	111.7	116.1
Mexico	104.7	111.2	116.2	125.5	136.4	139.8	130.7	148.4
Peru	111.2	134.8	142.3	168.5	213.7	256.8	188.2	210.2
Uruguay	140.6	179.4	191.2	200.0	219.0	220.1	172.8	199.9

Source: Elaborated by the author based on AIOS data.

Note: 2001 = 100.

Table 6. **Pension coverage of EAP in selected countries – 2000 to 2010**

(%)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	39.0	36.9	34.1	33.4	35.2	37.8	41.0	45.1	45.7	45.7	47.5
Bolivia	13.4	13.0	10.7	-	11.5	12.5	13.8	15.0	-	-	-
Brazil	-	45.1	44.7	45.3	45.8	46.4	47.9	49.6	51.2	52.0	-
Chile	58.1	-	-	58.7	-	-	62.9	-	-	73.1	-
Colombia	-	25.2	30.6	25.2	-	27.2	28.3	31.5	32.3	32.7	-
Ecuador	26.3	26.6	-	26.1	26.3	26.3	25.6	26.4	27.6	30.4	-
El Salvador	29.7	29.7	29.8	29.8	28.8	29.1	30.1	29.9	30.9	28.6	-
Mexico	36.1	-	34.8	-	36.0	35.4	35.0	-	39.0	-	37.0
Paraguay	13.9	-	12.9	13.0	11.6	15.0	12.8	16.2	16.9	16.9	-
Peru	-	13.7	13.9	14.8	14.7	12.4	14.0	16.0	16.8	18.3	18.5
Uruguay	52.9	52.6	51.8	50.0	51.4	56.6	61.1	62.5	65.5	65.9	66.8
Venezuela	35.1	35.5	32.4	30.2	31.9	32.6	35.3	-	-	-	-

Source: Rofman and Oliveri (2011).

Table 7.   Non-contributory pension scheme in selected countries

Countries	Selection tool	Age
Argentina	Means test (personal income) or legal dispensation	70
	Universal	
	Bonosol (discontinued)	65
Bolivia	"Renta Dignidad"	60
Brazil (rural)	Working time in a household economy scheme	55y/60y W/M
Brazil (urban)	Means test (household income per capita < ¼ of minimum wage)	65
Chile	Means test (based on income and replies to questionnaire)	65
Colombia	Means test (household income per capita) and must have resided in the country for at least 10 years	52y/57y W/M
Ecuador	Means test (household income per capita)	65
Mexico	Live in rural communities with less than 30 thousand residents and replies to the Socioeconomic Information Single Questionnaire	70
Peru	Means test (household income per capita) and replies to a socioeconomic questionnaire	65
Uruguay	Means test (household income)	70

Source: Barrientos (2006) and CEPAL.

Table 8.   Non-contributory pension coverage in selected countries

Countries	Coverage (people)	Year
Argentina	1,085,973	2011
Bolivia	899,246	2011
Brazil (rural)	8,460,400	2011
Brazil (urban)	1,747,366	2011
Chile	1,085,973	2011
Colombia	593,448	2010
Ecuador	532,479	2011
Mexico	2,032,467	2011
Peru	3,785	2011
Uruguay	82,890	2010

Source: CEPAL.

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Demographics and health in selected latin american countries

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Demographics and health in selected latin american countries

Solon Magalhães Vianna

Introduction

This report, elaborated by the International Observatory of Human Capabilities, Development and Public Policy (UnB/CEAM/NESP), discusses the health situation in 12 selected Latin American countries in the first decade of this millennium. This is a descriptive study using demographic, socioeconomic and mortality indicators.

The region as a whole consists of 46 countries. Its total population is around 603 million inhabitants, of whom more than half (52.1%) are in Brazil (32.9%) and Mexico (19.2%). These two countries coupled with the Andean Region (21.9%) account for about two thirds of the population living in the southern part of the American continent (Table I).

Table I. **Latin America and the Caribbean: areas, number of countries and population, 2012**

Latin America and the Caribbean	Number of countries	Population in thousands	
		Total	%
Mexico	1	116,147	19.2
Central American Isthmus	7	44,012	7.3
Latin Caribbean	7	36,547	6.1
Andean Region	5	132,289	21.9
Brazil	1	198,361	32.9
Southern Cone	4	68,616	11.4
Non-Latin Caribbean	21	7,179	1.2
Total	46	603,151	100

Source: PAHO – Health Situation in the Americas. Basic Indicators 2012.

Of this universe of 46 countries, 12 were selected for this analysis: besides Brazil and Mexico, the entire Southern Cone (four countries) and the Andean Region (five), a member of the Central American Isthmus (El Salvador) was also included. This means that, geographically and population-wise, the analysis covers almost all of Latin America, as countries not considered in this study, that is, six of the Central American Isthmus and the whole Latin (7) and non-Latin (21) Caribbean, although being a majority numerically (34), have lower relative expression both in demographic and spatial and economic dimensions.

DEMOGRAPHY

The population's distribution among the selected countries is as unequal as the aforementioned for Latin America as a whole: Brazil and Mexico account for 60% of inhabitants. Among the other 10, we highlight Colombia and Argentina, respectively, with 9.1% and 7.9% of the group's population. In the other, the relative share varies between 5.7%/5.6% in Venezuela and Peru, both with almost the same number of inhabitants, and 0.6% in Uruguay (Table II).

Table II. **Number and percentage of inhabitants of Latin American selected countries 2012**

Countries	Inhabitants	
	Number	%
Argentina	41,119	7.9
Bolivia	10,248	1.9
Brazil	198,361	38.8
Chile	17,423	3.2
Colombia	47,551	9.1
Ecuador	14,865	2.7
El Salvador	6,264	1.2
Mexico	116,147	22.1

Countries	Inhabitants	
	Number	%
Paraguay	6,683	1.2
Peru	29,734	5.6
Uruguay	3,391	0.6
Venezuela	29,891	5.7
Total	521,677	100

Source: PAHO/WHO – Health Situation in the Americas. Basic Indicators 2012.

In the first decade of the millennium (2000-2010), the population growth of countries studied was on average around 15% (Table III). However, this average has polar values: while Uruguay and El Salvador demographically grew only 2.1% and 5.4% respectively, Paraguayan, Bolivian, Venezuelan and Ecuadorian populations rose around 20% (Colombia: 19,5%) or more. Although well above the Uruguayan growth, countries such as Argentina, Brazil, Chile and Peru remained below average; Mexico was slightly higher (13.5%).

Table III.   Population of selected Latin American countries and increase (%) between 2000 and 2012

Countries	Population in thousands		Increase
	2000	2012	%
Argentina	36,931	41,119	11.3
Bolivia	8,307	10,248	23.3
Brazil	174,425	198,361	13.7
Chile	15,420	17,423	12.9
Colombia	39,764	47,551	19.5
Ecuador	12,345	14,865	20.4
El Salvador	5,940	6,264	5.4
Mexico	99,960	116,147	16.2
Paraguay	5,344	6,683	25.0
Peru	25,862	29,734	14.9
Uruguay	3,319	3,391	2.1
Venezuela	24,348	29,891	22.7
Total	451,965	521,677	15.4

Source: PAHO/WHO – Health Situation in the Americas, 2012.

Among the countries of the sample subject of this report, Uruguay and Argentina had, in 2001, the highest population percentages, 91.5% and 90.1%, respectively, living in cities. With rates above 80%, they were followed by Venezuela (87.1%), Chile (85.9%) and Brazil (81.7%). El Salvador reported the lowest rate (47%). The general trend in the urbanization rate is growing. In all countries, urban population has increased. In 2012, in addition to Argentina and Uruguay, Venezuela also recorded a level of urbanization over 90%. In the decade, El Salvador was the country with the largest urbanization growth (18 percentage points from 2001 to 2012), leading Paraguay to be the least urbanized of the 12 studied countries in 2012 (Table IV).

Table IV.   Urbanization rate (%) in selected LA countries, 2001/2012

Countries	Years	
	2001	**2012**
Argentina	90.1	92.6
Bolivia	63.1	67.2
Brazil	81.7	84.9
Chile	85.9	89.3
Colombia	74.3	75.6
Ecuador	66.2	68.0
El Salvador	47.0	65.3
Mexico	74.6	78.4
Paraguay	56.7	62.4
Peru	73.2	77.6
Uruguay	91.5	92.7
Venezuela	87.1	93.7

Source: Health Situation in the Americas. Basic Indicators, 2001/2012.

Population growth is a phenomenon existing in all countries, albeit with different percentages. In Uruguay, for example, the average rate of 0.3%/ year – the lowest among the 12 countries – is up to six times lower than the 1.8% registered in Paraguay, the highest. Only six countries show an average annual growth of less than 1% (Table V).

Thus, this means birth rates remain higher than mortality rates, which means an increased number of inhabitants, not necessarily in the same level in all countries. Differences are significant, as shown in Table V.

Table V. **Birth and Mortality Gross Rates and Annual Average. Population Growth in Latin American selected countries in 2010**

Countries	Gross Rates (per thousand inhabitants)		Annual Population Growth %
	Birth	**Mortality***	
Argentina	17	8	0.9
Bolivia	26	6	1.6
Brazil	16	6	0.9
Chile	14	6	0.9
Colombia	20	4	1.4
Ecuador	21	5	1.4
El Salvador	20	7	0.5
Mexico	20	5	1.2
Paraguay	24	5	1.8
Peru	20	5	1.1
Uruguay	15	10	0.3
Venezuela	21	5	1.6

Source: WHO, Global Health Observatory Data Repository, 2012.

*Data are from the year 2009.

Although the (gross or net) birth rate, which expresses the number of births per thousand inhabitants, is a widely used indicator, information on fertility is more refined because its calculation considers only women of childbearing age (between 15 and 49 years) and not the whole population.

The fertility rate may be general or age group-specific. For example, in age range 15-19, one can measure the problem of precocious pregnancy. On the other hand, global fertility rate, another widely used indicator, expresses the number of children per woman (Table VI).

Between 2000 and 2009, fertility rates fell in all of the 12 countries, including among adolescents (women aged 15-19). The highest decline

occurred in Colombia (-23.6%). Peru, El Salvador and Paraguay declined somewhat close to -20%. Paradoxically, Venezuela (92.9/1000), with the 3rd highest rate in the 2000 ranking, reduced early fertility by just -4.3% in 2009 (Table VII).

The number of children per woman also shows an overall decline (Table VI). In 2000, Bolivia led the ranking (4.1 children per woman). In 2009, it maintained its status (3.4). The lowest rate with the lowest fall remains in Uruguay, down from 2.2 (2000) to 2.0 (2009).

For example, in Brazil, the aspect of social inequality is embodied in the issue of fertility. In 2000, the average number of children in the poorest families was 5.1 per woman, a so-called African pattern. It fell to 3.6 ten years later. If this trend is maintained, a so-called mere population replacement level will be achieved in this social segment (2.1 children per woman). Among the wealthiest families, the total fertility rate fell from 1.2 in 2000 to 1.1 in 2010 (GOIS; GOES, 2012).

Table VI. **Global (number of births per woman) and teenage (number of births per thousand women aged 15 to 19) fertility global rates in selected Latin American countries, 2000/2009**

Countries	2000		2009	
	Global	15-19y	Global	15-19y
Argentina	2.5	64.3	2.2	55.8
Bolivia	4.1	85.4	3.4	76.8
Brazil	2.4	87.5	1.9	75.7
Chile	2.1	63.7	1.9	57.3
Colombia	2.6	94.1	2.4	71.8
Ecuador	3.0	84.9	2.5	81.9
El Salvador	2.9	99.7	2.3	80.1
Mexico	2.6	75.7	2.4	68.6
Paraguay	3.7	86.1	3.0	70.1
Peru	2.9	65.1	2.5	52.3
Uruguay	2.2	65.0	2.0	60.3
Venezuela	2.8	92.9	2.5	4.3

Source: World Bank, World Development Indicators and Global Development Finance.

Table VII. **Teenage fertility rates (number of births per thousand women aged 15 to 19) in selected Latin American countries and percentage variation, 2000-2009**

Countries	Fertility rate		Variation
	2000	**2009**	**%**
Argentina	64.3	55.8	-13.2
Bolivia	85.4	76.8	-10.0
Brazil	87.5	75.7	-13.4
Chile	63.7	57.3	-10.0
Colombia	94.1	71.8	-23.6
Ecuador	84.9	81.9	-3.5
El Salvador	99.7	80.1	-19.6
Mexico	75.7	68.6	-9.4
Paraguay	86.1	70.1	-18.5
Peru	65.1	52.3	-19.7
Uruguay	65.0	60.3	-7.2
Venezuela	92.9	88.9	-4.3

Source: World Bank, World Development Indicators and Global Development Finance.

Simply, according to Pereira (1995), it is possible to consider two groups of factors that are determinant to fertility: the "basic" and the "immediate". Among the former are the level of education and the urbanization rate. Among the "immediate" are the length of the reproductive period, age at marriage, separation, the couple's infertility, the appropriate use of effective contraception, induced abortion and the incidence of miscarriage (PEREIRA, 1995).

Still, in general, living with mother and child care deficits, Latin American countries face new and increasing demands arising from the aging process of its population and the resulting change in the epidemiological pattern. If, on the one hand, the fall in fertility exerts less pressure on services such as basic education and mother and child care, on the other hand, evidence of the increased and desirable growth of the aging population raises, inexorably, concerns about the need of additional resources to sectors such as health and social security.

Several indicators show the magnitude of the problem. The median age (Table VIII) increased in all countries between 2000 and 2010. It already reaches values equal or greater than 30 years in Uruguay (34), Chile (32) and Argentina (30). The lowest values in 2010were noted in Bolivia (22), El Salvador and Paraguay (23).

Table VIII. Median age in selected Latin American countries, 2000/2005/2010

Country	Median Age		
	2000	**2005**	**2010**
Argentina	28	29	30
Bolivia	20	21	22
Brazil	25	27	29
Chile	29	31	32
Colombia	24	25	27
Ecuador	23	24	26
El Salvador	21	22	23
Mexico	23	25	27
Paraguay	20	22	23
Peru	23	24	26
Uruguay	32	33	34
Venezuela	23	25	26

Source: Adapted from Rangel, 2012. CELADE-ECLAC, Revised 2011.

The trend of aging population is confirmed by other indicators such as the percentage of population over 60 years, the aging index and the dependency ratio. The former (Table IX) shows that, at the beginning of the millennium, only three countries (Uruguay, Argentina and Chile) had percentages of elderly above 10%. Brazil (10.2%) joined the club in the late 2010s. CELADE/ECLAC projections point to eight countries for the late 2020s. In 2030, when Uruguay, who leads the ranking, and Chile reach more than 20% of elderly in their populations, Paraguay will remain the "youngest country"in the bloc, with 12% of men and women over 60 years (for more details see: Rangel, Leonardo. Social Security in Latin America).

Table IX.   Trends of population (%) aged over 60 in selected Latin American countries, 2000/2010/2020/2030

Country	2000	2010	2020	2030
Argentina	13.6	14.6	16.4	18.3
Bolivia	6.4	7.1	8.7	10.8
Brazil	8.1	10.2	14.0	18.0
Chile	10.2	13.1	17.6	23.0
Colombia	6.9	8.6	12.0	16.2
Ecuador	7.4	9.0	11.9	15.4
El Salvador	8.0	9.4	10.8	13.3
Mexico	7.5	9.2	12.5	17.0
Paraguay	6.5	7.7	9.7	12.0
Peru	7.2	8.8	11.1	14.5
Uruguay	17.4	18.5	20.2	22.3
Venezuela	6.7	8.6	11.5	15.1

Source: Adapted from Rangel, 2012. CELADE-ECLAC, Revised 2011.

The aging index links the elderly to the youth segment of the population. The highest rate recorded also belongs to Uruguay (78.3%), followed by Argentina and Chile. Bolivia (19.4) and Paraguay (23.5) have the lowest rates. In five countries (Colombia, Ecuador, El Salvador, Mexico and Peru), the index recorded is around 30%.

Table X.   Population (%) aged up to 15 and 60 and over and aging index in selected Latin American countries, 2010

Countries	Population (%)		Aging index
	Up to 15 years	60 years and over	
Argentina	25	15	60.0
Bolivia	36	7	19.4
Brazil	25	10	40.0
Chile	22	13	59.1
Colombia	29	9	31.0
Ecuador	30	9	30.0
El Salvador	32	10	31.3
Mexico	29	9	31.0
Paraguay	34	8	23.5
Peru	30	9	30.0
Uruguay	23	18	78.3
Venezuela	29	9	31.0

Source: World Bank, World Development Indicators and Global Development Finance.

The dependency ratio, in turn, links both economically-dependent segments (young and elders) to the economically active population, making the index especially important in studies on the financing of social security and health care services (PEREIRA, 1995).

The highest rates, above 80%, in the first year of the millennium were recorded in El Salvador, Bolivia and Paraguay. The lowest rates were slightly above 60% (Brazil and Chile). However, in 2010, the decline was widespread, setting what demographers call demographic bonus, the setting in which most of the population is of working age. Just as a matter of reference, the dependency ratio in the United States and Canada in 2005 was 49.4 and 44.4 per 100 inhabitants, respectively.

CELADE/ECLAC projections quoted by Rangel (2012) indicate that, in 2030, seven countries (Brazil, Chile, Colombia, Mexico, Peru, Uruguay and Venezuela) will record a dependency ratio upswing compared to the previous decade (Table XI). The same source states that, in 2050, all 12 countries will show higher figures than in the previous decade.

Table XI. **Dependency ratio* in selected Latin American countries, 2000/2010/2020/2030**

Countries	2000	2010	2020	2030
Argentina	70.9	65.3	64.9	64.1
Bolivia	85.6	75.9	65.5	59.0
Brazil	60.6	55.3	52.3	57.7
Chile	61.3	54.4	59.1	68.0
Colombia	65.8	59.6	60.7	64.9
Ecuador	71.8	64.8	61.2	60.8
El Salvador	86.2	70.7	60.8	57.4
Mexico	68.2	59.1	55.8	58.1
Paraguay	80.8	70.0	63.6	58.4
Peru	70.4	63.2	59.2	59.6
Uruguay	72.2	69.3	68.8	70.4
Venezuela	68.0	61.6	60.6	61.5

*DR = ((pop. 0-14+pop.60 and over) /pop.15-59)*100.

Source: Adapted from Rangel, 2012. CELADE-ECLAC, Revised 2011.

SOCIOECONOMIC ASPECTS

Although important, demography is not the sole socioeconomic determinant of health conditions. Income, education, availability of certain services, such as basic sanitation, among other factors, have a leading role in shaping the health profile of any social conglomerate, regardless of its spatial dimension or demographic size. However, the common feature of all these factors in Latin America is inequality between countries in its quantifiable expressions.

For example, per capita income, a classic indicator of a nation's wealth, is low and, as a rule, has an unequal distribution in Latin America. Only one country (Argentina) among the 12 has a per capita income above PPP int. $ 15,000 PPP. In the immediate next level are, in descending order, Chile, Uruguay, Mexico, Venezuela and Brazil, with income between PPP int. $ 14,000 PPP and PPP int $ 11,000 PPP. In both 2000 and 2010, Bolivia had the lowest per capita income. Likewise, growth rates in the decade

have been uneven: only Peru and Ecuador achieved growth of over 80%. At the opposite extreme, Venezuela and El Salvador had an increase of about 45%. The remaining countries obtained more modest results, ranging from 50% to 60%.

Table XII. **Gross National Income per capita in PPP int $ and increase % between 2000 and 2010 in selected Latin American countries, 2000-2010**

Countries	Gross National Income		Increase %
	Per capita PPP int $		
	2000	2010	
Argentina	8,870	15,570	75.5
Bolivia	3,080	4,640	50.6
Brazil	6,820	11,000	61.3
Chile	8,910	14,640	64.3
Colombia	5,730	9,060	58.1
Ecuador	4,350	7,880	81.1
El Salvador	4,500	6,550	45.6
Mexico	8,780	14,400	64.0
Paraguay	3,370	5,080	50.7
Peru	4,780	8,930	86.8
Uruguay	8,490	13,620	60.4
Venezuela	8,380	12,150	45.0

Source World Bank, World Development Indicators and Global Development Finance.

The crux of the issue of poverty in Latin America lies in the inequality existing in varying degrees in all countries of the region. The recent study "State of Latin America and Caribbean Cities"released by the UN-Habitat reveals that Colombia, followed by Brazil and Bolivia, are the three most unequal countries in Latin America according to the Gini index. This indicator ranges numerically from 0 (zero) to 1. Zero corresponds to the total equality of income among people. At the other extreme, value 1 would mean that only one person would hold all the income. In other words, the more the index nears 1, the more unequal a country or region would be.

Table XIII ranks the 12 countries selected and indicates which ones have improved and worsened between 1990 and 2010.

Table XIII.   Inequality ranking* of selected Latin American countries

Rank	Countries
1	Colombia
2	Brazil
3	Bolivia
4	Chile
5	Mexico
6	Paraguay
7	Argentina
8	Ecuador
9	El Salvador
10	Peru
11	Uruguay
12	Venezuela

Source: Scheme adapted from an article by Lage and Roldão (2012).

Between 1990 and 2000	
Improved	Worsened

Obs. Includes only the 12 countries selected.

Among the important determinants to achieve an adequate level of health, education and sanitation are almost always the first mentioned.

In the first case, the usual reference is basic education. While values pointed to literacy rates seem high in general, inequalities between countries or gender are clear. As noted by Corbucci (2012, p. 4), countries like Uruguay (98.3%), Argentina (98.1%) and Chile (97.1%) "have already achieved literacy levels comparable to those in Southern Europe". In contrast, El Salvador remains with the lowest rate (83.4%), even after a 4.7% increase after 2000. Nevertheless, it is the only country in the group with a literacy rate below 90%. Brazil and Bolivia also had similar increases over the same period (Table XIV).

Regarding gender difference, it can be noted that men and women in Argentina and Chile had roughly the same level of literacy (97.2/97.3% and 96.6/96.4%) in 2005, respectively. Differences favorable to women in percentage points recorded in the same year in other countries ranged from 7.9% in Peru and 0.2% in Chile (Table XV).

Table XIV. Literacy rate of the population aged 15 and over in selected Latin American countries, 2000/2005/2010

Countries	2000	2005*	2010
Argentina	96.9	97.2	98.1
Bolivia	85.6	88.3	90.6
Brazil	86.4	88.9	90.4
Chile	95.7	96.5	97.1
Colombia	91.8	92.9	94.1
Ecuador	91.9	93.0	93.2
El Salvador	78.7	81.1	83.4
Mexico	90.5	92.6	93.1
Paraguay	93.3	94.4	95.3
Peru	89.9	91.6	93.0
Uruguay	97.8	98.0	98.3
Venezuela	93.0	94.0	95.2

Table XV.   Literacy rate per gender in selected Latin American countries, 2005*

Countries	Men	Women
Argentina	97.2	97.3
Bolivia	93.8	83.0
Brazil	88.7	89.0
Chile	96.6	96.4
Colombia	92.8	93.1
Ecuador	94.4	91.7
El Salvador	83.6	78.8
Mexico	94.3	90.9
Paraguay	95.2	93.6
Peru	95.6	87.7
Uruguay	97.5	98.4
Venezuela	94.2	93.8

Source: Adapted from Corbucci (2012).

*PAHO – Health Situation in the Americas. Basic Indicators 2005 (for the year 2005).

In the age range 15-19 years, primary education completion rate in 2010 was only less than 90% in El Salvador (76.1%) and Paraguay (89.3%). Argentina, Chile, Mexico and Uruguay are the countries with the best performance (over 95%). Other countries are located between the two groups, but all with percentages above 90% (Table XVb).

Primary education completion before the age of 15 is greater than 90% in eight countries (Argentina, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay). El Salvador has the lowest rate (76.5%).

Table XVb. Primary education completion rate of the population aged up to 15 years and in the age range 15-19 years, 2010

Countries	15-19 years*	15 years**
Argentina	97.8	96.0
Bolivia	93.0	87.0
Brazil	94.7	87.4
Chile	98.7	97.7
Colombia	93.6	90.4
Ecuador	94.6	94.0
El Salvador	76.1	76.5
Mexico	95.7	95.5
Paraguay	89.3	90.4
Peru	93.9	91.3
Uruguay	96.7	96.9
Venezuela	93.5	...

*Educational Panorama 2010: remaining challenges/Regional Education Indicators Project Summit of the Americas. **Educational Tendencies Information System in Latin America/Featured Data 21: Challenges in Universalizing Elementary Education - April 2011. Source: Corbucci, 2012.

In poor and/or developing countries, access to drinking water supply and sewage services today is a major tool to reduce mortality, particularly in childhood, and thereby increases life expectancy by virtue of its effectiveness, particularly in reducing waterborne diseases.

The universalization of water and sewage services is closely linked to economic and social development. The United States and Canada have long reached that goal. Progress has been slow in Latin America, at least in the 12 countries now studied.

Regarding drinking water, data from 2002 (PAHO/WHO, 2005) show an average coverage of 89% for Latin America for the population as a whole and 69% for the rural population; the rate rises to 96% in the urban area. Values were lower for access to improved sanitation; benefits reached, respectively, 74%, 84% and 44% of the total, urban and rural population.

Ten years later, as shown in Table XVI, access to sanitation in urban areas of the region remained stable, but there has been progress on all

other issues, both in water supply and in waste management. Despite the increase of fifteen percentage points in the period, the rural sanitation coverage issue remains a major challenge in this area.

Table XVI. Share of the Latin American population with access to improved sources of water and sanitation, 2002/2012

Years	Water			Sanitation		
	Total	Urban	Rural	Total	Urban	Rural
2002	89	96	69	74	84	44
2012	94	98	81	79	84	59

Source: Health Situation in the Americas. Basic Indicators, 2002 and 2012.

Of the 10 countries selected (without information about Argentina and Venezuela), in 2012, only Uruguay had universalized (urban and rural population) drinking water and sanitation (sewage) services. However, in urban areas, it can be said that four other countries (Brazil, Chile, Colombia and Paraguay) also had virtually achieved universal coverage of access to drinking water (percentage of 99% and 100%). Regarding this goal – safe water in urban households –, the other countries are relatively close (rates greater than 90%) (Table XVII). The farthest country (Peru) has 91% coverage.

As for access to sewage systems, results are more modest, although, in 2012, two countries, besides Uruguay (100%), have reached more than 90% of the total population with this service: Chile (96%) and Ecuador (92%). Mexico (85%), El Salvador (87%), Brazil (79%), Colombia (77%), Paraguay (75%) and Peru (71%) had rates above 70% (Table XVII).

But major difficulties lie in relation to that goal – access to "improved sanitation sources"– in at least two very clear aspects: first, the plight of Bolivia, where only 27% of the total population has access to these services – in cities, the rate rises to 35%, dropping to 10% in rural areas; and second, the low percentage (below 50%) of rural population benefiting from these services, also found in Brazil (44%), Paraguay (40%) and Peru (37%) (Table XVII).

Table XVII. Share of the population of selected Latin American countries with access to improved water and sanitation sources, 2012

| Countries | Access to improved sources | | | | | |
| | Water | | | Sanitation | | |
	Total	Urban	Rural	Total	Urban	Rural
Argentina	...	98	...	...	...	...
Bolivia	88	96	71	27	35	10
Brazil	98	100	85	79	85	44
Chile	96	99	75	96	98	83
Colombia	92	99	72	77	82	63
Ecuador	94	96	89	92	96	84
El Salvador	88	94	76	87	89	83
Mexico	96	97	91	85	87	79
Paraguay	86	99	91	75	90	40
Peru	85	91	65	71	81	37
Uruguay	100	100	100	100	100	100
Venezuela	...	...	...	...	...	...

Source: PAHO/WHO, Health Situation in the Americas. Basic Indicators 2012.

HEALTH UNDER THE PERSPECTIVE OF SELECTED INDICATORS

Besides its use in demography, life expectancy at birth is one of the most used tools to reveal the health status of a population. It is a synthesis indicator, which combines the mortality at different ages, turning it into a single value. Immune to the influence of the age structure of populations, this indicator is often used for international comparisons or between population groups within the same country. Moreover, it is a positive way to measure collective health, commonly done through the use of negative indicators that measure the absence of health, such as mortality and morbidity rates (PEREIRA, 1995).

Life expectancy or average life expectancy "indicates the average number of years that an individual of a given age is likely to live, on the assumption that mortality rates remain the same in the future" (PEREIRA, 1995, p. 135). It can be calculated either at birth or at any age (Ibidem), when it would indicate the number of years left to live.

In the period 1990-2009, all countries studied now recorded increased life expectancy, albeit with widely varying values. While Paraguay and Argentina increased 1 and 2 years, respectively, total life expectancy (men and women), El Salvador (eight years), Bolivia (eight years) and Peru (seven years) achieved far more expressive results.

Data from 2009 show Chile (79), Peru, Uruguay, Colombia and Mexico (all four with 76 years average life expectancy) as the countries of greater longevity. If, on the one hand, no country reported that year, average life expectancy greater than or equal to 80 years for both sexes, on the other, Bolivia (68) was the only one with life expectancy below 70 years. Two decades earlier, in 1990, the two most long-living countries were Argentina and Paraguay (73 years), followed by Chile, Uruguay and Venezuela (72 years).

Inequality between men and women on this issue is a natural phenomenon, but it does not occur with the same intensity in all countries. The difference in favor of women reaches eight years in El Salvador and seven in Brazil, Colombia, Uruguay and Venezuela; the smallest difference (4 years) was recorded in Bolivia (Table XVIII). High mortality rates from violence (external causes), which usually victimize more men than women may, at least in part, explain the discrepancy; these seem to be the case of El Salvador, Colombia, Venezuela and Brazil.

Table XVIII. Life expectancy at birth (per gender and total) in selected Latin American countries, 1990/2000/2009

Countries	Life expectancy at birth								
	1990			2000			2009		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Argentina	69	76	73	71	78	75	72	79	75
Bolivia	57	63	60	61	66	64	66	70	68
Brazil	63	70	67	67	74	70	70	77	73
Chile	69	76	72	73	80	77	76	82	79
Colombia	66	75	70	68	77	73	73	80	76
Ecuador	67	72	69	70	76	73	73	78	75
El Salvador	59	70	64	67	74	70	68	76	72
Mexico	68	74	71	72	77	74	73	78	76
Paraguay	71	76	73	71	77	74	72	77	74
Peru	67	72	69	70	74	72	74	77	76
Uruguay	69	76	72	71	79	75	72	79	76
Venezuela	70	74	72	71	77	74	71	78	75

Source: WHO, Global Health Observatory Data Repository, 2012.

When one examines the length of a decade (2000-2009), it can be seen that in 2009 most countries had increased life expectancy at birth by up to three years. Argentina (75) and Paraguay (74) remained stable. Only Peru and Bolivia increased four years. Overall, in 2009, people aged 60 years could enjoy between 18 (Bolivia) and 23 (Chile, Colombia, and Ecuador) additional years of life; with 22 years in Venezuela and 21 years in the remaining countries (Table XIX).

**Table XIX.   Life expectancy at birth and at age 60 in selected Latin
American countries, 2000/2009**

| Countries | Life expectancy | | | |
| | At birth | | At 60 | |
	2000	2009	2000	2009
Argentina	75	75	21	21
Bolivia	64	68	17	18
Brazil	70	73	19	21
Chile	77	79	21	23
Colombia	73	76	22	23
Ecuador	73	75	21	23
El Salvador	70	72	21	21
Mexico	74	76	21	21
Paraguay	74	74	21	21
Peru	72	76	20	21
Uruguay	75	76	21	21
Venezuela	74	75	21	22

Source: WHO, Global Health Observatory Data Repository, 2012.

The maternal mortality rate (MMR) is defined as the amount of women dying during pregnancy, childbirth and the postpartum period per 100,000 live births. In 2010, Peru, with an MMR of 200/100,000 LB showed the best rate reduction result (-66.5%) in the last decade. Meanwhile, Bolivia, Brazil and Chile achieved reductions greater than 50%. Argentina, Venezuela, Uruguay and Chile, which had the lowest rates among the 12, progressed in a peculiar way. Argentina, because it was the only country to worsen its result (+8.4%); Venezuela, for having the second worst performance (rate fell only -2.1%); finally, Uruguay and Chile because they have had the best MMR reduction performance since 1990 (Tables XX and XXI).

Table XX. **Maternal mortality rates estimates*, 1990-1995-2000-2005-2010**

Countries	1990	1995	2000	2005	2010
Argentina	71	60	63	69	77
Bolivia	450	360	280	240	190
Brazil	120	96	81	67	56
Chile	56	40	29	26	25
Colombia	170	130	130	100	92
Ecuador	180	150	130	110	110
El Salvador	150	130	110	94	81
Mexico	92	85	82	54	50
Paraguay	120	120	110	110	99
Peru	200	170	120	90	67
Uruguay	39	35	35	31	29
Venezuela	94	98	91	94	92

*Number of deaths in women during pregnancy and childbirth, per 100 thousand live births, estimated according to the regression model which uses information about fertility, birth attendants and HIV prevalence.

Source: World Bank, World Development Indicators and Global Development Finance.

Table XXI. **Maternal mortality rates variation % 1990/2010**

Countries	1990	2010	Variation %
Argentina	71	77	8.4
Bolivia	450	190	-57.8
Brazil	120	56	-53.3
Chile	56	25	55.3
Colombia	170	92	-45.8
Ecuador	180	110	-38.9
El Salvador	150	81	-46.0
Mexico	92	50	-45.6
Paraguay	120	99	-17.5
Peru	200	67	-66.5
Uruguay	39	29	-25.6
Venezuela	94	92	-2.1

Source: World Bank, World Development Indicators and Global Development Finance.

In the first decade of the millennium, neonatal mortality declined in all countries selected; the percentage of reduction ranged from 50% (El Salvador) to 16.6% (Chile). Bolivia, which had the highest ratio in 2000 (31/1000 live births LB), reduced it by 25% while maintaining the same relative rank in 2010.

The lowest rates in 2000 were recorded in the so-called Southern Cone: Chile (6/1000 LB), Uruguay (9/1000 LB) and Argentina (11/1000 LB). During the decade, the largest infant mortality rate (IMR) declines were recorded in El Salvador (-50%), Peru (-47%) and Mexico (-41%). El Salvador's remarkable progress changed the ranking; the sequential order of countries with the lowest rates became: Chile (5/1000 LB), Uruguay (6/1000 LB) and El Salvador (6/1000 LB), followed by Argentina and Mexico, both with the same rate (7/1000 LB) (Table XXII).

Table XXII. Neonatal mortality rate and variation % between 2000 and 2010

Countries	Death during the first month of life per thousand live births			Variation %
	2000	2005	2010	2000-2010
Argentina	11	9	7	-36.6
Bolivia	31	27	23	-25.8
Brazil	19	15	12	-36.8
Chile	6	5	5	-16.6
Colombia	16	14	12	-25.0
Ecuador	14	12	10	-28.6
El Salvador	12	9	6	-50.0
Mexico	12	9	7	-41.6
Paraguay	18	16	14	-22.2
Peru	17	13	9	-47.0
Uruguay	9	7	6	-33.3
Venezuela	13	11	10	-23.1

Source: WHO, Global Health Observatory Data Repository, 2012.

IMR in 2000 ranged between 60/1000 LB in Bolivia and 9/1000 LB in Chile. Uruguay (15/1000 LB) and Argentina (18/1000 LB) were the clo-

sest of Chile. Six countries were somewhere in the range of 20/1000 LB (Colombia, Ecuador, El Salvador, Mexico, Paraguay and Venezuela). It is worth reminding that Netherlands and Sweden had already achieved rates of 16/1000 LB about 50 years ago (BRAZIL, 1966).

Following the trend of neonatal mortality, IMR had also declined significantly in all countries by 2010. Decrease was around 50% in Peru and Ecuador, and 45% in Brazil. Even in Uruguay, which in 2000 had the second lowest rate (15/1000), the fall was 40%. Nevertheless, it did not change the ranking of the three best ranked countries. In 2010, Chile (8/1000), Uruguay (9/1000) and Argentina (12/1000) upheld the top three spots, regardless whether Chile's IMR percentage fall (-11.1%) was the least expressive of all the 12 countries (Table XXIII).

Table XXIII. Infant mortality rate in countries in selected Latin American countries and variation % 2000/2010

Countries	Death during the first month of life per thousand live births			Variation % 2000-2010
	2000	**2005**	**2010**	
Argentina	18	15	12	-33.3
Bolivia	60	50	42	-30.0
Brazil	31	23	17	-45.1
Chile	9	8	8	-11.1
Colombia	23	19	17	-26.1
Ecuador	27	22	18	-33.3
El Salvador	28	20	14	-50.0
Mexico	24	19	14	-41.6
Paraguay	29	25	21	-10.5
Peru	31	22	15	-51.6
Uruguay	15	12	9	-40.0
Venezuela	21	18	16	-23.8

Source: PAHO/WHO: Basic Health Indicators, 2001, 2005 and 2012.

The evolution of infant mortality (under five years) was no different: widespread, but uneven development (Table XXIV). In El Salvador and Peru, the fall was over 50%, in Brazil and Mexico, -47.2% and -41.3%, res-

pectively. The smallest decrease percentage wise occurred in Chile, which is not surprising, since it is the country that, in 2000, had the lowest infant mortality (11/1000 LB). The (seeming) paradox is known: the higher the IMR, the less complicated is its prevention. As the rate decreases, large positive leaps become more difficult. That is because while diseases with less complex prevention are being eliminated or reduced (for example, diarrheal disease), problems – for example, prematurity – that require more intensive care and more sophisticated therapeutic resources not always available to the most vulnerable segments grow proportionately.

Table XXIV. Infant mortality per thousand LB and variation (%) between 2000 and 2010 in selected Latin American countries

Countries	Deaths per thousand live births in children below the age of 5 years			Variation % 2000-2010
	2000	2005	2010	
Argentina	20	17	14	-30.0
Bolivia	82	67	54	-34.1
Brazil	36	26	19	-47.2
Chile	11	9	9	-18.2
Colombia	27	23	19	-29.6
Ecuador	33	26	20	-39.4
El Salvador	34	23	16	-52.9
Mexico	29	22	17	-41.3
Paraguay	35	29	25	-28.6
Peru	41	28	19	-53.6
Uruguay	17	14	11	-35.3
Venezuela	25	21	18	-28.0

Source: WHO, Global Health Observatory Data Repository, 2012.

The classification of Latin American countries according to the magnitude of each group of diseases that make up their epidemiological profiles can surprise anyone expecting a homogeneous healthcare setting when it comes to a universe of countries from the same hemisphere with

countless similar social and economic aspects. Indeed, despite existing commonalities, several differences are noticeable both in the socioeconomic status, as pointed out in this text, and the epidemiological structure, as we intend to demonstrate below.

Data from 2010 (PAHO, 2012) expressed in the annex summarize the nosological overview of the 12 countries, in which the following aspects are highlighted:

Diseases such as cardiovascular ones, diabetes, cancer and external causes emerge as epidemics of the twenty-first century;

Ischemic heart diseases and cerebrovascular diseases are the leading cause of death in Latin America seen as a whole. Neoplasms appear in second place. However, this ranking is not repeated when ischemic and cerebrovascular diseases are split. In this case, malignant neoplasms rank first in both the Latin American average and in seven countries (Argentina, Brazil, Chile, Ecuador, Paraguay, Peru and Uruguay);

External causes are the leading cause of death in Colombia, El Salvador and Venezuela, which would feature these countries as the most violent of the group from the perspective of this indicator. The various manifestations of violence emerge as the 2nd issue in Brazil, Chile, Ecuador and Uruguay;

Among the six disease groups explained in the annex, diabetes is also the leading cause of death in Mexico and the disease of lesser epidemiologic magnitude in Argentina (15.7/100,000), Chile (17/100,000), in Colombia (24.2/100,000), in Uruguay (12.5/100,000) and Venezuela (30.1/100,000); and

In 2010, communicable diseases (CD) were the leading cause of mortality in Peru (149.6/100,000), the second in Argentina (64.8/100, 000) and the least important among the six in Mexico (34.1/100,000). In the middle of the last century, Netherlands and Denmark had achieved rates of 27.2/100,000 and 38.3/100,000, respectively (EPEA, 1966). It is worth noting the peculiar importance of CDs particularly on the issue of inequalities among countries studied. Although current rates are much better off than those observed 50/60 years earlier, around 500/100,000 for Brazil, 152.4/100,000 for Venezuela, 336/100,000 for Colombia, 374/100,000 for Chile and 473/100,000 for Mexico, progress has been clearly uneven. Since then, the reduction of CDs

in Brazil and Colombia was approximately 86%, while Venezuela, Chile and Mexico reported declines of around 72% (EPEA, 1966).

In the first decade of the millennium, communicable diseases, malignant neoplasms, external causes and the all causes group grew differentially in the 12 countries covered in this report. The broadest variation occurred among the first type, since CD-related mortality rates fell in seven of eight countries. The somewhat unusual exception was Argentina, where the CDs increased significantly (+33.2%). Chile, which had the lowest rate at the onset of the decade, had the largest decrease (-55.8%).

Malignant neoplasms fell in Chile (-3.4%) and even more in Mexico (-9%) and Venezuela (-15.5%). In the five countries (Argentina, Brazil, Colombia, Ecuador and El Salvador) where the problem grew, El Salvador had the highest percentage increase (27.8%) (Table XXV).

Table XXV. **Rates of mortality from communicable diseases (CDs) and malignant neoplasms adjusted per age in selected Latin American countries**

	CDs			Neoplasms		
Countries	1995-2000	2007-2009	Variation %	1995-2000	2007-2009	Variation %
Argentina	51.5	68.6	33.2	119.9	124.0	4.2
Bolivia	...	...	...	...	...	...
Brazil	90.6	74.8	-17.4	109.1	122.3	12.1
Chile	67.5	29.8	-55.8	124.2	120.0	-3.4
Colombia	58.2	51.5	-11.5	106.6	121.9	14.3
Ecuador	116.0	70.8	-38.9	100.1	104.4	4.3
El Salvador	127.7	87.5	-31.5	80.2	105.5	27.8
Mexico	63.7	36.6	-42.5	82.9	75.4	-9.0
Paraguay	...	72.0	...	...	118.8	...
Peru	...	145.5	...	...	136.6	...
Uruguay	...	6.7	...	...	168.4	...
Venezuela	62.6	51.9	-17.1	133.1	112.5	-15.5

Sources: 1. Basic Indicators, Health Situation in the Americas, 2011.

2. Basic Indicators. Health Situation in the Americas /WHO/PAHO, 2011.

Venezuela and El Salvador reported high mortality from external causes, especially the former country, where the increase neared 72%. In El Salvador, the growth of trauma and violence in general was much lower (12.1%). The largest drop occurred in Mexico (-33.8%) and the lowest in Argentina (-3.7%) and Ecuador (-5.6%).

Eight countries showed decreased rates of mortality from all causes. The largest declines occurred in Peru (-21.8%) and Ecuador (-15.1%). Increases occurred only in El Salvador (6.7%), Paraguay (4.2%) and Colombia (2.9%) (Table XXVI).

Table XXVI. Rates of mortality from external causes and all causes adjusted by age in selected Latin American countries

Countries	External causes			All causes		
	1995-2000	2007-2009	Variation %	1995-2000	2007-2009	Variation %
Argentina	48.3	46.5	-3.7	6.2	6.0	-3.2
Bolivia	...	...		12.3	...	...
Brazil	95.8	83.3	-13.0	8.2	7.4	-9.7
Chile	57.6	45.5	-21.0	5.4	4.9	-9.2
Colombia	127.5	108.4	-14.9	6.9	7.1	2.9
Ecuador	92.0	86.7	-5.6	7.3	6.2	-15.1
El Salvador	121.2	135.9	12.1	7.4	7.9	6.7
Mexico	86.0	56.9	-33.8	6.3	5.8	-7.9
Paraguay	...	81.1	...	7.1	7.4	4.2
Peru	...	72.4	...	8.7	6.8	-21.8
Uruguay	...	54.8	...	7.2	6.7	-6.9
Venezuela	59.5	102.3	71.9	7.0	6.8	-2.8

Sources: 1. Basic Indicators, Health Situation in the Americas, 2011.

2. Basic Indicators. Health Situation in the Americas/WHO/PAHO, 2011.

Final considerations

The indicators discussed in this paper clearly point to the population's aging, albeit with varying levels of speed arising from heterogeneity in health conditions among countries involved. But, for now, the 12 countries are enjoying the so-called demographic bonus, which is when the active population between 15 and 60 years of age is higher than that of children and adolescents (0-15 years) and elderly (over 60 years).

Pari passu with demographic changes, the prevailing nosological profile in a population in an epidemiological transition stage is changing. In this context, infectious and parasitic diseases tend to give way to chronic degenerative diseases and trauma (external causes).

Inequalities in health exist in two forms: the so-called natural and unfair inequalities, that is, those featuring inequity situations. Among the first, we highlight the territorial extension, historically consolidated in each country, except one or two contentious issues always solvable through diplomacy and/or international courts, and the epidemiological issue, in which the classic example is the life expectancy difference between men and women.

But those that matter are the unfair inequalities or socioeconomic inequities, such as those pointed out in this text, because they should be addressed by social and economic policies of each country in synergy with international promotion and cooperation agencies actions.

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ANNEX

MORTALITY RATES PER 100,000 INHABITANTS ADJUSTED BY AGE, ACCORDING TO SOME GROUPS OF CAUSES IN SELECTED LATIN AMERICAN COUNTRIES, 2010

Causes	Argentina	Bolivia	Brazil	Chile (b)	Colombia (b)	Ecuador	El Salvador (b)	Mexico	Paraguay	Peru	Uruguay (b)	Venezuela (b)	Latin America
Communicable diseases	64.8	...	66.9	28.3	46.4	58.7	80.1	34.1	69.9	149.6	36.0	42.0	59.5
Malignant neoplasms	118.5	...	110.7	120.0	88.0	92.2	97.5	73.7	112.4	128.0	144.0	95.6	103.7
External causes	43.6	...	82.1	45.5	107.9	88.6	136.4	62.9	75.7	...	52.7	103.4	77.4
Diabetes mellitus	15.7	...	34.3	17.0	24.2	40.4	39.2	89.6	57.3	19.1	12.5	30.1	43.3
Ischemic heart diseases	37.1	...	62.0	37.8	101.7	19.7	61.6	74.0	75.9	31	43.0	102.7	66.1
Cerebrovascular diseases	35.9	...	61.3	41.2	51.2	32.2	23.4	33.8	75.9	29.7	47.1	50.7	47.9

F(b) Data from 2008. Source: PAHO - Health Situation in the Americas. Basic Indicators, 2012.

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Health financing in selected Latin American countries

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Health financing in selected Latin American countries

Sérgio Francisco Piola

1. Introduction

In virtually every country, health services financing is shared between public and private sources. What varies is the dominance in the composition. In general, both in high-income or medium-high income countries, the bulk of health financing stems from public sources[1]. Private funds are spent through out-of-pocket expenses or upon prepayments to private health plans and insurance companies. As old as medicine, direct disbursement is the most unjust and unstable financing; paradoxically, it plays a more important role precisely in the poorest countries (WHO, 2000). In high-income countries, the share of the public sector is on average 62% of total expenditure, while in low-income countries, although such participation has increased in recent years, it does not reach 39% of total expenditure (WHO, 2012).

Health expenditure has grown worldwide. It accounted for 3% of world GDP in 1948. It increased to 8.7% of gross domestic product (GDP) in 2004 (PAHO, 2007). In the period 1998-2003, the average annual growth rate of health expenditure (5.7%) exceeded the average growth rate of world economy, which was 3.6% (HSIAO, 2007).

The amount spent by each country is determined by a number of factors. Some are intrinsic to the system, such as the degree of population coverage, the list of services provided, the extent and speed of adoption

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1   One of the exceptions to this rule, perhaps the most important one, is the system of the United States.

of new technologies and the forms of organization, with greater or lesser participation of the Government in conducting and regulating the system. Other factors that may be considered external to the system are the demographic and epidemiological profile of the population, socioeconomic status (income, education, urbanization) and the population's own expectations regarding the services (WHO, 2010; BUSSE et al., 2)

Moreover, a higher level of health expenditure does not automatically translate into more efficient, effective and equitable services. In this respect, systems financing and organization models seem to exert great influence. The United States, for example, whose system is fundamentally based on private insurance, spends 16% of GDP on health annually. However, they have the highest infant mortality rate and the lowest life expectancy among high-income countries (HSIAO, 2006). In turn, with a medical-hospital system that is basically private, with prevailing cash payments (out-of-pocket expenses), India spent 4.8% of GDP on health in 2003 and still had an infant mortality rate five times greater than Sri Lanka, which spent 3.5% of GDP, but with services predominantly financed by public resources (HSIAO, 2007).

Even in the richer countries, there is concern about growth, efficiency, and effectiveness of health expenditure. In turn, the poorest countries that need to increase coverage and improve access to services look for ways to meet the sector's financing needs against other competing investment needs for social and economic development (PIOLA et al., 2008). The aforementioned issues are added to the urgency of improving health financing systems to effectively protect families against catastrophic expenditure[2] and still achieve, via allocation of public funds, greater equity in the access to and use of services[3].

This report discusses health financing in selected Latin American countries, analyzing the evolution of the share of public and private finan-

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[2] Catastrophic is understood as the unforeseen expenditure that can absorb a significant part of a household's budget, leading it to forgo other consumption, sell assets or even get into debt (see WAGSTAFF; VAN DOORSLAER, 2003; DINIZ et al., 2007).

[3] Financing methods should seek out equity in the use of services (PRADHAN; PRESCOTT, 2002; KUTZIN, 2010). This would imply that resources should be distributed proportionally according to the health needs of the population and not according to their ability to pay (WHO, 2000; KUTZIN, 2010).

cial resources and health expenditure trends. The selected countries were: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Mexico, Paraguay, Peru, Uruguay and Venezuela. Data was tabulated from the Global Health Observatory Data Repository of the World Health Organization.

2. Health expenditure general evolution for the period 2000-2010

Almost all countries analyzed showed growth in per capita total expenditure on health between 2000 and 2010. Some, such as Brazil, Ecuador and Peru, grew over 60%. However, among them, the growth noted in Ecuador was the most surprising, where, according to the data used, per capita expenditure has more than tripled.

The smallest increases occurred in Bolivia, El Salvador and Venezuela, that reported rises slightly above 20% in the period. Paraguay did not follow the trend of other countries, since health expenditure decreased (range -4.4%) (Table 1).

Table 1. **Total public and private health expenditure in Latin American countries in per capita values, 2000-2010 – in international dollars (PPP)**

Country	2000	2010	Var. %
Argentina	839	1287	53.4
Bolivia	192	233	21.4
Brazil	502	1028	104.8
Chile	768	1199	56.1
Colombia	429	713	66.2
Ecuador	201	653	224.9
El Salvador	367	450	22.6
Mexico	508	959	88.8
Paraguay	316	302	-4.4
Peru	231	481	108.2
Uruguay	719	1188	65.2
Venezuela	482	589	22.2

Source: WHO, Global Health Observatory Data Repository, 2012.

Also regarding total expenditure per capita, very significant variations between countries are observed. At one extreme, there is a group of countries (Argentina, Brazil, Chile and Uruguay) with a per capita expenditure exceeding 1,000 international dollars in 2010. Halfway through, with an expenditure ranging from 500 and 999 international dollars are Mexico, Colombia, Ecuador and Venezuela. At the other extreme, with a per capita expenditure of less than 500 international dollars are Peru (481), El Salvador (450), Paraguay (302) and Bolivia (233) (Table 1 and Chart 1).

Chart 1. Total public and private health expenditure in Latin American countries in per capita values, 2010 – in international dollars (PPP)
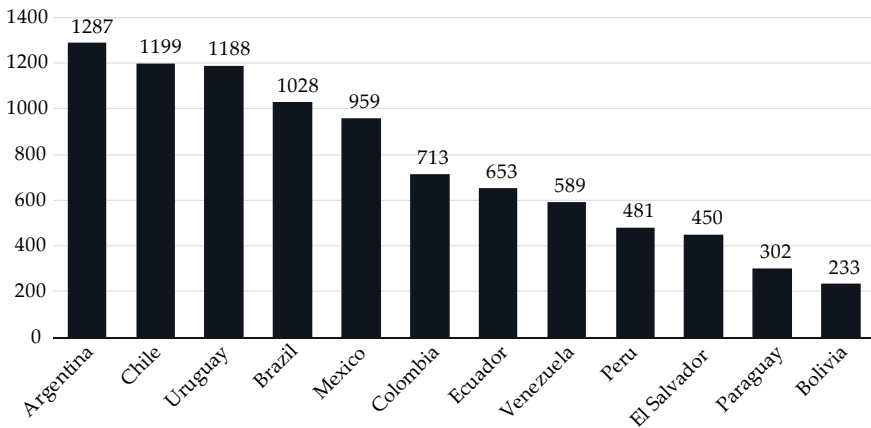
Source: WHO, Global Health Observatory Data Repository, 2012.

The relative priority of health expenditure as opposed to other expenditures can also be demonstrated when analyzing the evolution of health expenditure as a proportion of Gross Domestic Product in 2000 and 2010. Although all selected countries, except Paraguay, have shown growth in per capita total health expenditure in the period 2000-2010 (Table 1), in most of them, seven out of 12, total health expenditure as a proportion of GDP decreased (Table 2).

In a context in which all countries analyzed showed a GDP growth in the period, in less than half (five out of 12) health expenditure growth accounted for an increase in health expenditure as a proportion of GDP,

which would constitute an increase in the relative priority of these expenditures. The following countries fit this situation: Brazil, Colombia, Ecuador, Mexico and Peru. In other five countries – Argentina, Bolivia, Chile, El Salvador and Uruguay –, despite registering a health expenditure growth, the share of health spending in GDP decreased. Meanwhile, Paraguay showed a decrease in per capita total expenditure and in the share of health spending in GDP (Tables 1 and 2 and Chart 2).

Table 2.   **Total public and private health expenditure as a proportion of GDP in Latin American countries, 2000 and 2010**

Country	2000	2010	Var. %
Argentina	9.2	8.1	-1.1
Bolivia	6.1	4.8	-1.3
Brazil	7.2	9.0	1.8
Chile	8.3	8.0	-0.3
Colombia	7.3	7.6	0.3
Ecuador	4.2	8.1	3.9
El Salvador	8.0	6.9	-1.1
Mexico	5.1	6.3	1.2
Paraguay	9.4	5.9	-3.5
Peru	4.7	5.1	0.4
Uruguay	8.5	8.4	-0.1
Venezuela	5.7	4.9	-0.8

Source: WHO, Global Health Observatory Data Repository, 2012.

Chart 2.   Total health expenditure as a proportion of GDP, 2000 and 2010
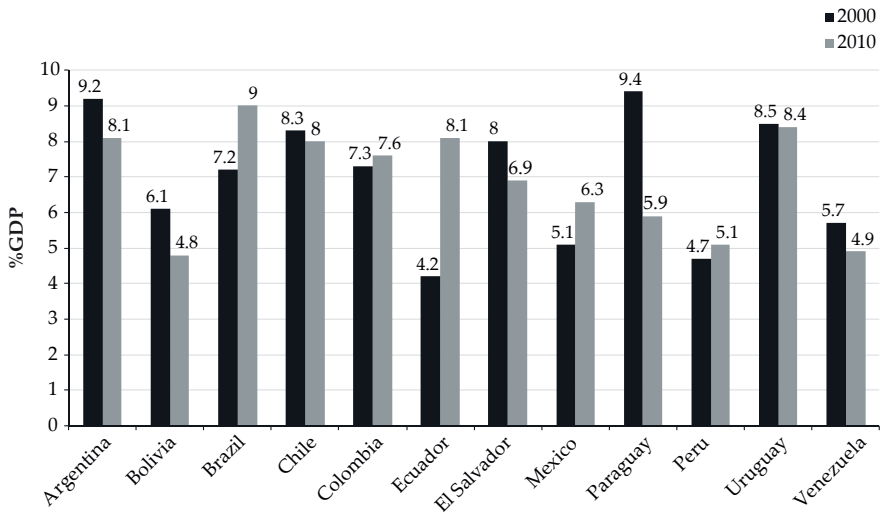
In short: in the period from 2000 to 2010, all countries, except Paraguay, showed growth in health expenditure in per capita values. However, in only five – Brazil, Colombia, Ecuador, Mexico and Peru – there was concomitantly a growing share of health spending as a proportion of Gross Domestic Product.

3. PUBLIC AND PRIVATE MIX TRENDS

As in other regions of the world, health expenditure in the countries analyzed in this paper is shared by public and private sources. Therefore, it is important to investigate the financing distribution between public and private sources and especially whether, based on the analysis of relative shares for the years 2000 and 2010, it is possible to check in which segment – public or private – share growth occurred.

For this sample, in six (Argentina, Bolivia, Colombia, El Salvador, Peru and Uruguay) of the 12 countries surveyed public expenditure is higher than private expenditure. In this group, Argentina, Colombia, Peru and Uruguay are considered, according to the World Bank and WHO[4] data, medium-high income countries. The other two, Bolivia and El Salvador, are medium-low income. In turn, in the other six, Brazil, Chile, Ecuador, Mexico, Paraguay and Venezuela, private spending is superior to public. Of these countries, only Paraguay is a medium-low income country; the other five (Brazil, Chile, Ecuador, Mexico and Venezuela) are of medium-high income (Table 3).

Table 3. **Health expenditure as a proportion of GDP and allocation of public and private expenditure (%) in Latin American countries, 2010**

Countries	Total	Public	% Public	Private	% Private
Argentina	8.1	4.4	54.6	3.7	45.4
Bolivia	4.8	3.0	62.8	1.8	37.2
Brazil	9.0	4.2	47.0	4.8	53.0
Chile	8.0	3.9	48.2	4.1	51.8
Colombia	7.6	5.5	72.7	2.1	27.3
Ecuador	8.1	3.0	37.2	5.1	62.8
El Salvador	6.9	4.3	61.7	2.6	38.3
Mexico	6.3	3.1	48.9	3.2	51.1
Paraguay	5.9	2.1	36.4	3.8	63.6
Peru	5.1	2.8	54.0	2.3	46.0
Uruguay	8.4	5.6	67.1	2.8	32.9
Venezuela	4.9	1.7	34.9	3.2	65.1

Source: WHO, Global Health Observatory Data Repository, 2012.

As can be seen in data from WHO (2012), countries with lower per capita income generally have proportionally lower public expenditure than private expenditure. This trend is not evident in the sample coun-

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4   World Bank list of economies (November, 2011), Washington, D.C., World Bank, 2011 (http://siteresources.worldbank.org/DATASTATISTICS/Resources/CLASS.XLS). Apud: WHO, 2012.

tries. Bolivia and El Salvador do not follow this trend, which is, however, confirmed by Paraguay. However, the most striking is that among some of the highest-income countries, located as medium-high income countries, public expenditure is lower than private one. This is the case of Brazil, Chile, Mexico and Venezuela, which contradict the trend that in countries with highest income public share is almost always higher. The Brazilian case is paradoxical because it is the only one, of the four mentioned above, that, by constitutional mandate, has a health system responsible to provide universal access and comprehensive care since the Constitution of 1988 (Table 3 and Chart 3).

Chart 3.   **Share of public and private sources in the total expenditure on health in selected Latin American countries, 2010**
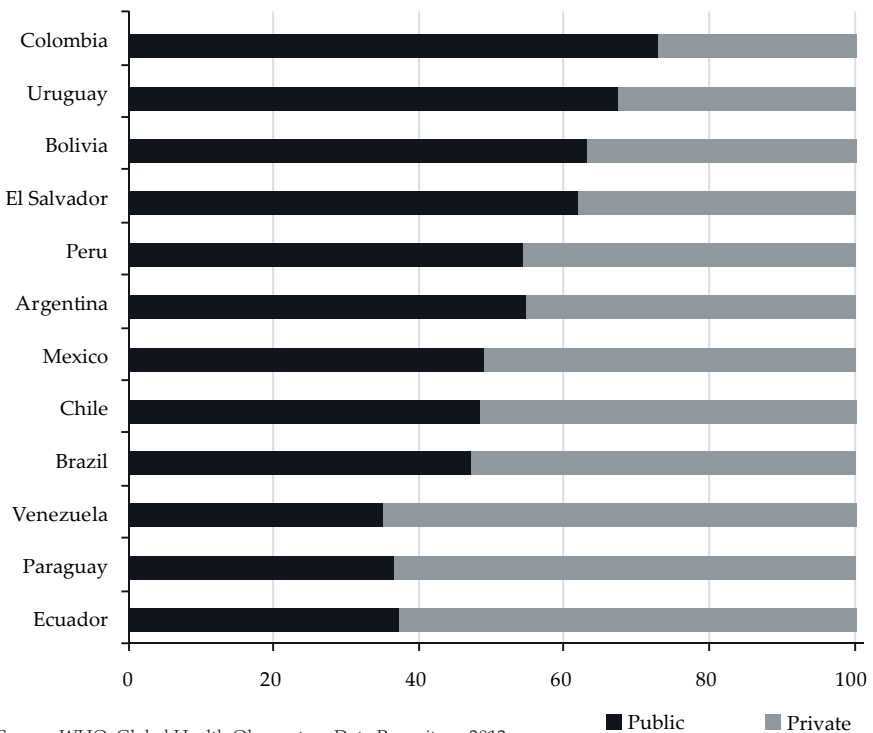
Source: WHO, Global Health Observatory Data Repository, 2012.

No less important is to identify where responsibility for health financing is leaning. That is, which grows faster: public or private financing? With this objective, comparing the share of both in health financing in 2000 and 2010, it can be observed that public share has grown in eight (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador and Mexico) of the 12 countries. Of these countries, in three (Argentina, Bolivia and Colombia), public sources already had a dominant share of total health expenditure. El Salvador changed the composition in the period: in 2000, public sources accounted for 45.2% of total spending and, in 2010, this share reached a percentage of 61.7%. In the other four countries, Brazil, Chile, Ecuador and Mexico, despite the growth of public participation in financing, most of the resources continue to come from private sources.

In turn, private participation grew in four countries: Paraguay, Peru, Uruguay and Venezuela. Two of them, Paraguay and Venezuela, have a higher private than public participation in financing. Private sources contributed with 63.6% of total health expenditures in Paraguay and 65.1% in Venezuela, in 2010. On the other hand, Uruguay and Peru, despite the growth of private share, continue with systems funded mostly by public sources. In Uruguay, in 2010, 67.1% were public resources and, in Peru, in the same year, the percentage of public resources was 54% (Table 4).

Table 4.   **Share (%) of public and private funds in total health expenditure in Latin American countries, 2000 and 2010**

Countries	% Public		% Private	
	2000	2010	2000	2010
Argentina	53.9	54.6	46.1	45.4
Bolivia	60.1	62.8	39.9	37.2
Brazil	40.3	47.0	59.7	53.0
Chile	41.6	48.2	58.4	51.8
Colombia	70.7	72.7	29.3	27.3
Ecuador	31.2	37.2	68.8	62.8
El Salvador	45.2	61.7	54.8	38.3
Mexico	46.6	48.9	53.4	51.1
Paraguay	39.9	36.4	60.1	63.6
Peru	58.7	54.0	41.3	46.0
Uruguay	72.3	67.1	27.7	32.9
Venezuela	41.5	34.9	58.5	65.1

Source: WHO, Global Health Observatory Data Repository, 2012.

Regarding the internal composition of public financing in the analyzed countries, with the exception of Brazil, all countries count, aside fiscal resources, with Social Security[5] revenues, primarily, contribution on payroll, in a greater or lesser volume. Since 1993, Brazil no longer counts on Social Security income as a source of public funding for health. In some countries, such as Argentina, Mexico and Uruguay, social security resources corresponded in 2010 to 59.4%, 55.4% and 58.8%, respectively, of total public spending. In all others, except for Chile, the social security participation varied from 36.9% (El Salvador) to 46.4% (Colombia) of the public spending. In Chile, this share stood at 14.2% in the same year of 2010. That is, with the exception of Brazil and Chile, the share of social security resources in an important source in health public financing (Chart 4). However, in terms of trend and considering the evolution of social security share in 2000 and 2010, it can be stated that there is a propensity to diminish social security resources in public health spending and increase fiscal resources. Only in three countries, Ecuador, Uruguay and Venezuela, there was increased participation. In Argentina and Chile there was main-

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5   Correspond to the social insurance public systems existing in Latin American countries.

tenance of the participation percentage of the social security sources and, in the other six countries (Bolivia, Colombia, El Salvador, Mexico, Paraguay and Peru) there was a decrease (Table C of Annex).

Chart 4. **Percentage composition of public funding according fiscal and social security sources in Latin American countries, 2010**
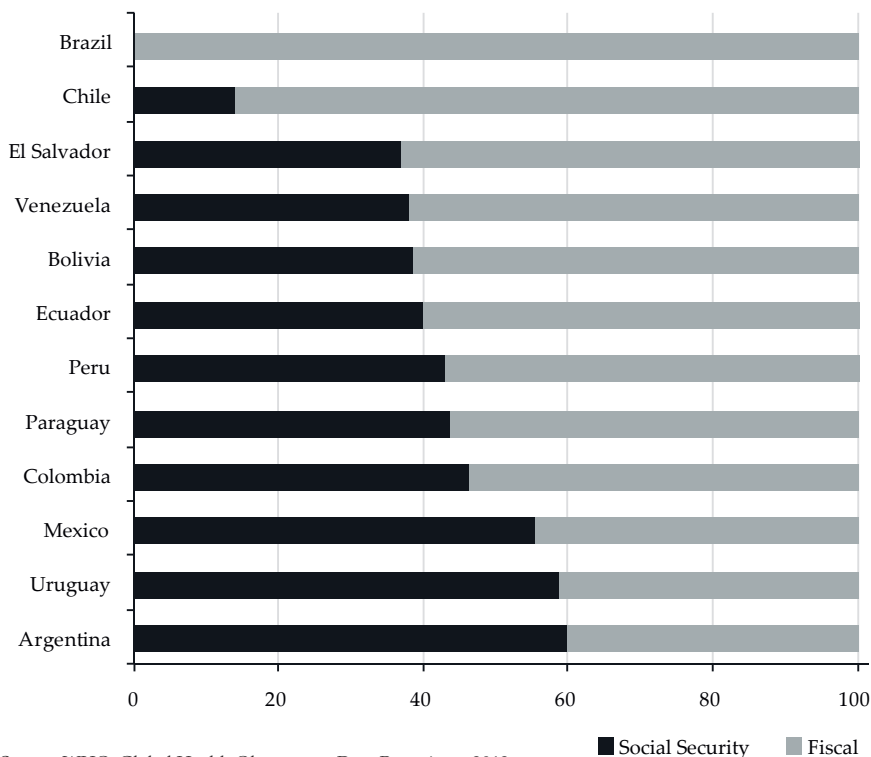
Source: WHO, Global Health Observatory Data Repository, 2012.

The composition of private spending is also important in analytical terms. In general, there is a justified concern with out-of-pocket expenses (OOP) due to two adverse effects of this practice in the process of building a more equitable health system. Firstly, OOP can restrict access to services (WHO, 2010), especially when used as a form of participation in the financing of public services (copayment). Second, because systems with strong participation of pocket payments, especially in the absence of a public

system with more effective coverage, may subject families to make unan-ticipated expenditures with the health of its members, which can absorb a significant part of household budgets, leading the family to restrict the consumption of other goods, sell assets or go into debt. That is, health expenditure may reach catastrophic proportions for these families. In turn, the prepayment schemes organized in the form of pooling for private plans and insurance can minimize these risks, which are diluted among all users of this type of services. Therefore, it is also interesting to identify, in the case of private spending, which is the evolution of out-of-pocket expenses and private forms of prepayment. Table 5 below shows the share of direct and mediate spending through prepayment forms (insurance and private health plans) in the total spending for selected countries.

Table 5.   Share (%) of out-of-pocket and plans and insurance expenditure in the total private expenditure in Latin American countries, 2000 and 2010

Country	Out-of-pocket expenditure		Plans and Insurance	
	2000	2010	2000	2010
Argentina	63.0	65.8	30.7	25.3
Bolivia	81.6	77.2	8.1	19.1
Brazil	63.6	57.8	34.3	40.4
Chile	62.2	64.3	37.8	35.7
Colombia	76.7	71.5	23.3	28.5
Ecuador	85.3	78.0	4.8	12.4
El Salvador	94.6	88.6	5.4	11.4
Mexico	95.3	92.2	4.7	7.8
Paraguay	86.6	89.7	13.4	10.3
Peru	81.3	85.8	15.0	10.9
Uruguay	67.7	39.6	32.3	60.4
Venezuela	90.9	90.6	2.2	3.4

Source: WHO, Global Health Observatory Data Repository, 2012.

In all countries, except Uruguay, out-of-pocket expenditure accounts for the greater share of private expenditure. In 2010, out-of-pocket expen-

ses in selected countries corresponded between 39.6% in Uruguay and 92.2% of private expenditure in Mexico. In Uruguay, 60.4% of private expenditure is due to private health plans and insurance. Other countries with a significant percentage of prepaid expenditure are Brazil (40.4%), Chile (35.7%), Colombia (28.5%) and Argentina (25.3%).

On average, out-of-pocket expenditure is equivalent to more than 75% of private expenditure in the countries analyzed in 2010. It would be important to better identify the features of out-of-pocket expenditure in these countries, but this approach exceeds the scope of this work. Studies performed for Brazil show that the poorest deciles of the population spend proportionately more of their household income on health care. Out-of--pocket expenditures in these income strata aim at – mostly, more than 75% – purchasing drugs. At all income levels, most of household expenditure – except for the payment of private health plans and insurance – is for the purchase of drugs and dental care (SILVEIRA, 2007).

Anyway, prepaid plans, a typical method of health plans and insurance segments, are increasing within private expenditure, which is interesting given the inequity and instability of out-of-pocket expenditure. In two thirds of the countries analyzed (Bolivia, Brazil, Colombia, Ecuador, El Salvador, Mexico, Uruguay and Venezuela), there was an increased share of this financing method in the private segment. Noteworthy is, however, the low share of prepaid plans in private funding in Ecuador (12.4%), El Salvador (11.4%), and, mostly, Mexico (7.8%) and Venezuela (3.4%), well below the share rates found in other countries.

4. Final considerations

From 2000 to 2010, almost all analyzed countries recorded growth in total health expenditure per capita values. The exception was Paraguay, which had no growth. However, in only five countries – Brazil, Colombia, Ecuador, Mexico and Peru – there was, concomitantly, a growth in the participation of health expenditure as a proportion of GDP. In seven countries, the share of health expenditure in GDP has decreased, although per capita spending has grown.

Regarding composition, public health spending is higher than private in six (Argentina, Bolivia, Colombia, El Salvador, Peru and Uruguay) of the 12 countries analyzed. The remarkable thing, however, is that in some higher-income countries (Brazil, Chile, Mexico and Venezuela), public expenditure is lower than private, contrary to the situation generally found of higher public spending in medium-high and high-income countries.

From 2000 to 2010, public share in health financing grew in eight of the 12 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador and Mexico. Among these countries, despite growing public participation in financing, the public share remains lower than the private in Brazil, Chile, Ecuador and Mexico. Furthermore, in almost all countries, except Ecuador, Venezuela and Uruguay, there was an increase in the participation of fiscal resources in the composition of public spending.

On average, out-of-pocket expenditure accounts for more than 75% of private expenditure in the countries analyzed in 2010. However, there has been a growth of prepaid plans in private expenditure, related to the segment of health plans and insurance, which, if properly regulated, can reduce the household's financial risk. In two thirds of the countries analyzed, there was an increased share of this segment in private financing.

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Annexes

Table A.   Per capita total expenditure on health (PPP int. $)

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	839	830	658	724	806	916	1017	1125	1218	1386	1287
Bolivia	192	203	215	189	190	210	192	199	223	237	233
Brazil	502	521	530	528	576	695	767	828	862	921	1028
Chile	768	816	835	780	798	843	864	959	1094	1209	1199
Colombia	429	438	449	494	510	544	581	619	622	687	713
Ecuador	201	238	295	366	402	430	473	507	551	692	653
El Salvador	367	372	379	376	388	407	403	405	408	439	450
Mexico	508	552	584	629	688	730	776	842	891	920	959
Paraguay	316	311	296	255	248	253	271	271	283	295	302
Peru	231	232	252	248	256	285	317	396	497	466	481
Uruguay	719	699	642	582	736	797	858	897	977	1099	1188
Venezuela	482	523	452	433	492	537	633	701	686	734	589

Source: WHO, Global Health Observatory Data Repository, 2012.

Table B.   Total expenditure on health as a percentage of gross domestic product

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	9.2	9.4	8.3	8.3	8.3	8.5	8.5	8.4	8.4	9.5	8.1
Bolivia	6.1	6.3	6.5	5.6	5.3	5.6	4.8	4.7	4.9	5.1	4.8
Brazil	7.2	7.3	7.2	7.0	7.1	8.2	8.5	8.5	8.3	8.8	9.0
Chile	8.3	8.4	8.4	7.5	7.1	6.9	6.6	6.9	7.5	8.4	8.0
Colombia	7.3	7.3	7.3	7.7	7.4	7.4	7.3	7.2	6.9	7.6	7.6
Ecuador	4.2	4.6	5.5	6.6	6.6	6.6	6.7	7.0	7.0	8.8	8.1
El Salvador	8.0	7.8	7.7	7.3	7.2	7.1	6.6	6.3	6.2	6.8	6.9
Mexico	5.1	5.5	5.6	5.8	6.0	5.9	5.7	5.8	5.9	6.5	6.3
Paraguay	9.4	9.1	8.7	7.2	6.6	6.5	6.6	6.1	6.0	6.6	5.9
Peru	4.7	4.7	4.8	4.5	4.4	4.5	4.5	5.1	5.7	5.3	5.1
Uruguay	8.5	8.4	8.2	7.2	8.5	8.3	8.3	7.9	7.7	8.4	8.4
Venezuela	5.7	6.0	5.7	5.9	5.6	5.4	5.7	5.8	5.4	6.0	4.9

Source: WHO, Global Health Observatory Data Repository, 2012.

Table C. **Social security expenditure on health as a percentage of general government expenditure on health**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	59.5	58.9	58.3	57.3	57.8	57.6	58.3	58.6	58.5	59.4	59.4
Bolivia	62.0	65.2	65.0	49.5	49.9	44.4	44.6	41.0	39.2	38.3	38.6
Brazil	0	0	0	0	0	0	0	0	0	0	0
Chile	15.0	15.7	16.0	12.4	13.0	14.3	13.9	14.2	14.5	14.2	14.2
Colombia	60.2	66.3	63.9	66.0	67.9	69.5	70.1	70.1	70.1	48.6	46.4
Ecuador	28.0	32.2	32.0	41.2	53.5	53.0	59.6	54.6	52.2	38.3	39.6
El Salvador	44.2	41.2	44.5	42.9	43.2	45.7	47.3	43.2	41.1	37.5	36.9
Mexico	67.6	66.7	66.1	66.9	67.3	62.0	60.2	58.9	55.2	54.6	55.4
Paraguay	52.4	47.3	38.8	41.7	41.8	41.9	38.6	41.5	49.7	57.0	43.6
Peru	49.5	47.5	47.7	46.6	46.0	46.0	40.5	35.5	32.5	44.5	43.0
Uruguay	27.4	25.7	25.9	25.1	52.6	59.2	55.0	49.3	57.5	57.9	58.8
Venezuela	34.6	34.0	35.6	35.5	36.2	32.5	32.4	33.7	31.4	30.8	38.1

Source: WHO, Global Health Observatory Data Repository, 2012.

Table D. **General government expenditure on health as a percentage of total expenditure on health**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	53.9	54.2	53.6	52.3	52.3	54.2	55.8	59.4	62.6	66.4	54.6
Bolivia	60.1	59.3	62.8	60.1	62.6	66.2	69.9	68.2	65.1	64.6	62.8
Brazil	40.3	42.3	44.6	44.4	47.0	40.1	41.7	41.8	42.8	43.6	47.0
Chile	41.6	42.9	43.8	38.8	39.9	40.0	42.1	43.2	44.1	47.6	48.2
Colombia	70.7	70.3	70.4	70.1	70.6	70.0	70.8	71.1	70.6	71.1	72.7
Ecuador	31.2	34.5	33.7	22.1	23.0	22.3	23.8	24.3	26.5	34.9	37.2
El Salvador	45.2	45.4	46.6	47.3	49.3	52.6	62.0	59.1	59.4	60.3	61.7
Mexico	46.6	44.8	43.8	44.2	45.2	45.0	45.2	45.4	47.0	48.3	48.9
Paraguay	39.9	34.9	33.2	33.1	34.8	37.9	41.1	40.5	40.9	39.0	36.4
Peru	58.7	57.9	57.6	58.7	58.8	59.4	56.3	58.5	62.3	57.7	54.0
Uruguay	72.3	71.9	70.8	68.0	49.3	50.7	53.1	54.6	63.8	65.3	67.1
Venezuela	41.5	40.7	39.3	38.1	41.4	43.3	41.7	46.5	44.9	40.0	34.9

Source: WHO, Global Health Observatory Data Repository, 2012.

Table E.   **Private expenditure on health as a percentage of total expenditure on health**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	46.1	45.8	46.4	47.7	47.7	45.8	44.2	40.6	37.4	33.6	45.4
Bolivia	39.9	40.7	37.2	39.9	37.4	33.8	30.1	31.8	34.9	35.4	37.2
Brazil	59.7	57.7	55.4	55.6	53.0	59.9	58.3	58.2	57.2	56.4	53.0
Chile	58.4	57.1	56.2	61.2	60.1	60.0	57.9	56.8	55.9	52.4	51.8
Colombia	29.3	29.7	29.6	29.9	29.4	30.0	29.2	28.9	29.4	28.9	27.3
Ecuador	68.8	65.5	66.3	77.9	77.0	77.7	76.2	75.7	73.5	65.1	62.8
El Salvador	54.8	54.6	53.4	52.7	50.7	47.4	38.0	40.9	40.6	39.7	38.3
Mexico	53.4	55.2	56.2	55.8	54.8	55.0	54.8	54.6	53.0	51.7	51.1
Paraguay	60.1	65.1	66.8	66.9	65.2	62.1	58.9	59.5	59.1	61.0	63.6
Peru	41.3	42.1	42.4	41.3	41.2	40.6	43.7	41.5	37.7	42.3	46.0
Uruguay	27.7	28.1	29.2	32.0	50.7	49.3	46.9	45.4	36.2	34.7	32.9
Venezuela	58.5	59.3	60.7	61.9	58.6	56.7	58.3	53.5	55.1	60.0	65.1

Source: WHO, Global Health Observatory Data Repository, 2012.

Table F.   **Out-of-pocket expenditure as a percentage of private expenditure on health**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	63.0	64.0	64.2	64.4	64.1	64.3	64.1	61.5	59.2	59.2	65.8
Bolivia	81.6	77.9	78.9	79.1	78.3	77.8	70.4	72.9	77.2	77.2	77.2
Brazil	63.6	62.6	62.5	62.6	62.6	62.8	61.8	58.5	56.0	57.2	57.8
Chile	62.2	62.8	63.4	63.6	64.6	65.0	65.6	64.4	65.2	64.6	64.3
Colombia	76.7	76.1	77.2	76.6	76.2	76.9	76.1	76.4	76.3	74.8	71.5
Ecuador	85.3	87.0	87.9	89.6	87.3	86.8	78.4	76.4	75.4	75.4	78.0
El Salvador	94.6	93.1	93.4	93.3	92.5	91.7	88.9	89.0	88.8	87.9	88.6
Mexico	95.3	95.0	94.9	94.7	94.7	94.0	93.6	93.1	92.9	92.3	92.2
Paraguay	86.6	84.9	85.6	84.9	85.2	87.1	87.6	88.3	89.2	89.7	89.7
Peru	81.3	81.1	82.0	78.8	79.2	79.4	82.1	85.4	86.5	84.7	85.8
Uruguay	67.7	67.3	65.5	67.0	32.4	32.1	31.1	29.9	33.8	40.0	39.6
Venezuela	90.9	92.1	92.6	92.6	91.0	89.4	88.0	88.1	89.5	90.6	90.6

Source: WHO, Global Health Observatory Data Repository, 2012.

Table G. **Private prepaid plans as a percentage of private expenditure on health**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	30.7	29.3	28.4	28.4	28.3	28.5	28.4	30.7	32.8	32.8	25.3
Bolivia	8.1	12.0	10.8	16.6	17.8	19.4	24.2	22.6	19.1	19.1	19.1
Brazil	34.3	35.0	34.8	34.9	34.9	35.5	36.4	39.8	42.2	41.0	40.4
Chile	37.8	37.2	36.6	36.4	35.3	35.0	34.4	35.5	34.8	35.4	35.7
Colombia	23.3	23.9	22.8	23.4	23.8	23.1	23.9	23.6	23.7	25.2	28.5
Ecuador	4.8	3.1	4.5	3.7	4.8	5.4	9.1	11.4	12.0	12.0	12.4
El Salvador	5.4	6.9	6.6	6.7	7.5	8.3	11.1	11.0	11.2	12.1	11.4
Mexico	4.7	5.0	5.1	5.3	5.3	6.0	6.4	6.9	7.1	7.7	7.8
Paraguay	13.4	15.1	14.4	15.1	14.8	12.9	12.4	11.7	10.8	10.3	10.3
Peru	15.0	15.2	14.5	17.7	17.1	17.3	14.5	11.3	10.2	12.1	10.9
Uruguay	32.3	32.7	34.5	33.0	67.6	67.9	68.9	70.1	66.2	60.0	60.4
Venezuela	3.2	3.1	3.2	3.1	3.1	3.1	2.7	3.2	3.3	3.4	3.4

Source: WHO, Global Health Observatory Data Repository, 2012.

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Situation and trends of education in selected Latin American countries – 2000/2010

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Situation and trends of education in selected Latin American countries – 2000/2010

Paulo Roberto Corbucci

This report sets out to analyze the evolution of a set of educational indicators over the first decade of this century with a sample of selected Latin American countries.

Financial indicators (spending/ investments in education) are analyzed, as well as performance and outcomes indicators on education that, to some extent, reflect the first indicators.

Educational expenditure has been used as one of the leading indicators to understand the performance of education systems in each societal context. Considering the different population sizes between countries, educational expenditure generally counts as a proportion of Gross Domestic Product (GDP). Nevertheless, the international comparison should be relativized through this indicator, since educational demands are different depending on the stage of development achieved by each country. In general, greater contributions of financial resources for the implementation of school infrastructure are needed in developing countries, when compared to those required in most countries of the Organization for Economic Cooperation and Development (OECD).

In 2008, the average public spending on education published by the OECD (2011) stood at around 5.4%.[1] However, there were countries with rates reaching 9% and others with rates below 4%. As can be seen in the ambit of this organization, the countries in the sample analyzed by this report also show great variation among them.

Generally speaking, the selected Latin American countries recorded significant increases in terms of public spending on education as a pro-

portion of GDP. According to data from ECLAC (2011) and national statistical agencies, Bolivia and Venezuela were the countries with the largest percentage of investment over the period under review: 6.3% of GDP in 2006 and 2008, respectively. Argentina, Brazil, Colombia and Mexico stood at a slightly lower level, with rates between 4.9% and 5.4%. A little further down were Chile (4.5%), Uruguay (4.4%), Paraguay (4%) and El Salvador (3.6%). Finally, the countries that had the lowest spending on education were Peru (2.9%) and Ecuador (2.8%).

Table 1.   Public spending on education as a proportion of Gross Domestic Product

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	**4.6**				**3.8**		**4.5**	**4.9**	**5.4**		
Bolivia	5.6	6.0	6.4	6.8	6.7	6.7	**6.3**				
Brazil	**4.0**				**4.0**	**4.5**	**5.0**	**5.1**	**5.4**		
Chile	3.9	4.1	4.2	4.1	3.9	3.7	3.3	3.6	4.2	**4.5**	
Colombia	4.3	4.5	4.4	4.4	4.5	4.4	4.6	4.4	4.4	4.8	5.1
Ecuador	1.9						2.8				
El Salvador	**2.5**					**2.7**	**3.0**		**3.6**		
Mexico	4.9				**4.9**	**5.0**	**4.8**	**4.8**	**4.9**		
Paraguay					**4.0**			**4.0**			
Peru	2.6	2.6			**2.8**	**2.7**	**2.5**	**2.5**	**2.7**	2.9	2.9
Uruguay	**2.4**				2.3	3.3	3.4	3.7	3.9	4.4	
Venezuela	5.4								6.3		

Sources: ECLAC (in bold) and official agencies of the respective countries (other data).

It is worth noting, however, that such results are related to different developments over the decade. For example, when considering the first and the last year with available data, there are different rates of spending growth among the countries in the sample. Under this approach, Uruguay (83%) was the country with the largest growth, followed by Ecuador (47%), despite having recorded one of the lowest proportions of spending on education.

When considering the absolute value achieved at the end of the period and the evolution all along this period, it's possible to conclude that the worst performance can be attributed to Peru, which applied only 2.9% of GDP in education in 2009, which is very close to the 2.6% invested at the beginning of the decade.

Educational expenditure can also be broken down by level of education. In this case, the expenditure per student as a proportion of GDP per capita was used. Regarding primary education, data provided by the World Bank indicate significant progress in Brazil. If, in 2000, the country applied only 10.7% of GDP per capita, in 2007, the proportion reached 17.3%, that is, the highest among those registered by countries analyzed in this study.

Table 2.   Public spending on primary education as a proportion of GDP per capita

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Argentina	12.8	14.4	11.2	10.9	11.3	12.0	13.2	14.7	16.0	
Bolivia	12.4	11.8	15.3	16.2			13.7			
Brazil	10.7	10.4	9.8		12.8	15.4		17.3		
Chile	14.4		16.0	15.0	12.7	12.0	11.1	11.9	14.7	
Colombia	11.9	13.0	13.4		15.9	15.4	13.0	12.5	12.5	15.7
Ecuador	3.2									
El Salvador	8.5		10.2	9.3		8.1	8.5	7.9	8.5	
Mexico	13.0	13.7	14.0	14.1	13.4	13.7	13.3	13.3		
Paraguay	13.6	13.5	13.2	13.2	11.5			10.8		
Peru		7.0	6.3	6.5	7.0	6.6	7.2	7.3	8.1	
Uruguay	7.2	9.6	6.9	5.8	7.3	8.3	8.6			
Venezuela							8.0	9.2		

Source: World Bank.

Other countries that have achieved significant levels were Argentina (16%) and Colombia (15.7%) in 2008 and 2009, respectively. In turn, countries like Chile and Mexico have maintained some stability, when considering the period between 2000 and last year with available data. It is

also worth mentioning that the proportion of spending stood below 10% in four countries (El Salvador, Peru, Uruguay and Venezuela).

Expenditure per student on secondary education was led by Argentina (23.9%), which showed significant growth compared to 2000, when the proportion was only 17.6%. Brazil was next, with 18% in 2007. However, when one considers that the proportion was only 10.3% in 2000, it's possible to conclude that Brazil's progress was even more significant. As was observed in primary education, El Salvador, Peru, Uruguay and Venezuela were the countries that had the lowest percentage of spending in relation to GDP per capita.

Table 3.   Public spending on secondary education as a proportion of GDP per capita

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Argentina	17.6	18.9	16.9	14.3	15.7	19.6	20.3	21.9	23.9	
Bolivia	9.6	10.3	12.7	13.1			14.5			
Brazil	10.3	10.4	10.2		11.5	13.1		18.0		
Chile	14.8		15.7	15.9	14.1	13.2	12.4	13.4	16.0	
Colombia	12.9	13.1	13.8		15.2	14.5	11.0	10.0	14.9	15.2
Ecuador	6.0									
El Salvador	7.5		9.6	8.9		9.2	7.9	9.3	9.1	
Mexico		18.8	15.7	15.3	14.1	14.8	13.7	13.4		
Paraguay	18.5	16.0	14.8	14.8	13.0			16.3		
Peru		9.2	8.7	9.9	10.1	9.6	10.0	9.8	9.9	
Uruguay	9.9	9.5	8.0	6.5	8.4	9.9	10.5			
Venezuela							8.3	8.2		

Source: World Bank.

Finally, with regard to the expenditure per student on higher education, a continuous reduction was noted in those countries that had high standards of expenditure at the beginning of the period under review. This is the case of Paraguay, Brazil and Bolivia, which in 2000 recorded proportions around 50% of GDP per capita. In 2007, the first two had reduced such proportions to less than 30%. Other countries that also had

a decrease in this expenditure per student indicator were Chile and Peru. In these cases, rates that stood at relatively low levels (about 20%) in the early period of the decade fell to around 10-12%. Finally, Argentina and Mexico have outlined some stability, when comparing initial and final rates, despite some fluctuations over the period.

Table 4. **Public spending on higher education as a proportion of GDP per capita**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Argentina	17.7	16.1	13.1	10.4	11.8		14.2	15.6	16.6	
Bolivia	47.1	44.0	43.5	36.0						
Brazil	55.5	47.4	44.6		32.6	35.0		29.6		
Chile	19.4		18.0	15.0	15.4	11.6	11.8	11.5	12.1	
Colombia	29.6	30.3	23.4		20.7	19.4	18.9		26.3	27.0
Ecuador										
El Salvador	8.9		11.0	11.0		15.1	14.2	13.7		
Mexico		36.2	48.4	40.2	37.2	37.8	35.3	37.0		
Paraguay	58.9	48.8	30.3	31.7	24.6			26.0		
Peru		21.2	14.0	12.0	12.1	9.0	10.9			
Uruguay							18.3			
Venezuela										

Source: World Bank.

Among the education indicators in the strict sense, one of the most used is the literacy rate of the population aged 15 or more. According to ECLAC (2011), it appears that the countries of the sample analyzed by this study are at different stages of development. The first group consists of countries that have already achieved literacy levels comparable to those of southern Europe, such as Uruguay (98.3%), Argentina (97.7%) and Chile (97.1%), while El Salvador stands at the opposite extreme, with a rate of around 83%. However, most countries are in an intermediate situation: Paraguay (95.3%), Venezuela (95.2%), Ecuador (94.2%), Colombia (94.1%), Mexico (93.8 %), Peru (93%) and, somewhat lower, Bolivia (90.6%) and Brazil (90.4%).

Table 5.   Literacy rate of the population aged 15 or more

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina	**96.9**					**97.2**				97.7	98.1
Bolivia	85.6	86.7				**88.3**				90.7	**90.6**
Brazil	**86.4**	87.6				**88.9**			90.0	90.3	90.4
Chile	**95.7**	96.2	96.3	96.4	96.5	**96.5**	96.5	96.2	96.0		**97.1**
Colombia	**91.8**		92.4	92.5	93.0	93.1	92.9	93.1	93.4		**94.1**
Ecuador	**91.9**	91.0									93.2
El Salvador	**78.7**					**81.1**		82.0			**83.4**
Mexico	90.5					91.6					93.1
Paraguay	**93.3**	93.8						94.6			**95.3**
Peru	**89.9**									91.1	**93.0**
Uruguay	**97.8**										**98.3**
Venezuela	**93.0**			93.5		94.4		95.2			**95.2**

Sources: ECLAC (in bold) and official bodies of the respective countries (other data).

To some extent, these rates reflect the different colonization processes that underwent the countries in the region. As a rule, those who specialized as suppliers of raw materials and/or precious metals devoted less effort to the universalization of elementary education. Countries/regions of the Southern Cone reported a different situation.

It should be noted, however, that not all data provided by ECLAC coincide with what is reported by official agencies of some countries. In recent years, Venezuela and Bolivia announced they had eradicated illiteracy and even received the illiteracy-free certification issued by the United Nations Educational, Scientific and Cultural Organization (UNESCO). However, such announcements have not been corroborated by the results of national censuses in both countries.

One of the Millennium Development Goals indicators, the illiteracy rate among young people aged 15-24 years was drastically reduced in almost all countries in the region. According to ECLAC, which provides data on urban population, Argentina, Bolivia and Chile have virtually eradicated illiteracy in this age group, with rates around 0.5%. However, most countries of the analyzed sample stood within the 1-2% range. Only

Ecuador recorded a rate above this threshold (3.2%). In relative terms, Bolivia, Brazil and Paraguay, which have cut their rates by half over the period of a decade, recorded the biggest increases.

Table 6.   Literacy rates of the population aged 15-24 years

	2000	2010
Argentina	99.3	99.4
Bolivia	98.9	99.5
Brazil	97.0	98.6
Chile	99.1	99.4
Colombia	98.9	98.8
Ecuador	n.d.	96.8
El Salvador	96.6	97.9
Mexico	98.6	99.0
Paraguay	98.0	98.9
Peru	n.d.	98.8
Uruguay	98.3	99.5
Venezuela	97.6	98.5

Source: ECLAC and INE (Uruguay).

Obs.: Urban population.

Besides the literacy rate, the average years of schooling can be used to assess the education level in the population. For this study, one shall consider the age group of 25 years or more, which is when young people should have completed their higher education.

According to data from the United Nations Program for Development (UNDP), made available through the Human Development Index (HDI) reports for the period 2000-2010, all countries of the studied sample reported significant advances, considering that in the initial year the lowest average of schooling was 5.6 years, which in the end had increased to 7.2 years.

Table 7. **Average years of schooling in the population aged 25 years or more**

	2000	2005	2010
Argentina	8.6	8.9	9.3
Bolivia	7.4	8.3	9.2
Brazil	5.6	6.6	7.2
Chile	8.8	9.3	9.7
Colombia	6.5	6.7	7.3
Ecuador	6.9	7.3	7.6
El Salvador	5.7	6.7	7.5
Mexico	7.4	7.8	8.5
Paraguay	5.9	6.9	7.7
Peru	7.7	8.2	8.7
Uruguay	8.0	7.9	8.5
Venezuela	5.9	6.5	7.6

Source: UNDP.

Half of the countries exceeded the eight-year schooling average and Chile, Bolivia and Argentina recorded rates over nine years. In turn, the other six countries remain below the minimum eight-year threshold. However, with the exception of Ecuador, these were precisely the countries that had the greatest relative advances, even because they were worse off at the beginning of the decade.

The access and retention of all children at primary education can be seen as major educational achievements among the countries under analysis. Five countries of the region (Chile, Argentina, Uruguay, Bolivia and Mexico) had achieved attendance rates of at least 98%. Brazil, Ecuador and Colombia were close to this threshold, with rates above 97%. Only El Salvador recorded a slightly lower than expected rate (93%).

Table 8.   **School attendance rates for the 6-11 years old**

	School att. Rates
Argentina	98.4
Bolivia	98.0
Brazil	97.9
Chile	99.1
Colombia	97.4
Ecuador	97.9
El Salvador	93.5
Mexico	98.3
Paraguay	97.0
Peru	96.5
Uruguay	98.9
Venezuela	n.d.

Source: Sistema de Información de Tendencias Educativas en América Latina/Dato Destacado 21: El Desafío de Universalizar el Nivel Primario - abril 2011

Universal access to primary education has led to a significant increase of education among young people in the region, which is corroborated by the increase in the primary education completion rate in the 15-19 years range. Countries like Chile (98.7%), Argentina (97.8%), Uruguay (96.7%) and Mexico (95.7%) are very close to the universalization of this basic citizenship right. In addition, Brazil (94.7%) and Ecuador (94.6%) are also close to this goal. Again, only El Salvador stood at a disadvantage (76%). It is worth noting that the universalization of primary education completion is the main educational goal of the Millennium Goals.

Table 9.   **Primary education completion rate of the population aged 15-19 years**

	15 - 19 years	15 years
Argentina	97.8	96.0
Bolivia	93.0	87.0
Brazil	94.7	87.4
Chile	98.7	97.7
Colombia	93.6	90.4
Ecuador	94.6	94.0
El Salvador	76.1	76.5
Mexico	95.7	95.5
Paraguay	89.3	90.4
Peru	93.9	91.3
Uruguay	96.7	96.9
Venezuela	93.5	n.d.

Sources:

¹ Panorama Educativo 2010: desafíos pendientes/Proyecto Regional de Indicadores Educativos Cumbre de las Américas.

² Sistema de Información de Tendencias Educativas en América Latina/Dato Destacado 21: El Desafío de Universalizar el Nivel Primario - abril 2011

When referring to the age group of 15, there was slight decrease in the number of young people who have completed this stage of basic schooling. Again, Chile (97.7%), Uruguay (96.9%) and Argentina (96%) are those with the best performances. In turn, Brazil has a sensitive decrease in relation to the 15-19 years range, since only 87.4% of young people at this initial age have completed primary education. This shows that the age-grade distortion is still quite high in the country. However, the worst scenario is once again noted in El Salvador, with just over 75% of the population aged 15 years with a completed primary education.

Regarding secondary education, some caveats must be made. In several countries, it is considered that it begins with the first grade after the completion of primary education (the four initial grades of education following pre-school education). In Brazil, elementary school, which until 2009 had eight schooling years, comprises primary education and what

is internationally known as lower secondary education (ISCED, 2011).[2] Furthermore, age ranges corresponding to the levels of education defined based on this international classification also undergo changes. Therefore, some care should be taken when comparing the countries analyzed through this study.

Thus, school attendance of the population aged 12-14 years, an age range considered proper to attend the first stage of secondary education, has significantly increased in recent years. Most of the countries under review reached the end of the decade with rates above 90%, of which four (Chile, Argentina, Brazil and Bolivia) with rates between 95% and 98.4%. El Salvador and Ecuador reported the lowest schooling rates in this age group (89.8%). One must consider, however, that they were well below the average level of other countries of the sample at the beginning of the decade. In the case of Ecuador, the increase was about eight percentage points between 2001 and 2008.

Table 10.   School attendance rate in the age range 12-14 years

	2000	2001	2006	2007	2008	2009
Argentina[1]	97.8					97.6
Bolivia	89.2			95.0		
Brazil		95.0			96.9	
Chile	97.9		98.4			
Colombia			92.3			
Ecuador	82.0				89.8	
El Salvador	83.8				89.8	
Mexico	88.8				91.6	
Paraguay	87.6				90.8	
Peru				92.2		
Uruguay					93.9	
Venezuela						

Source: Sistema de Información de Tendencias Educativas en América Latina/Resumen Estadístico 01/julio 2010

[1] urban population.

Finally, school attendance in the 15-17 years age range has also largely increased. But the region still suffers deep inequalities in the access to education. If, in Chile, more than 90% of young people in this age group attended school, rates remained below 70% in Mexico and Peru. Despite these extreme cases, the majority of countries ranged between 70% and 87%.

Table 11. School attendance rate in the age range of 15-17 years

	2000	2001	2006	2007	2008	2009
Argentina[1]	85.2					86.9
Bolivia	76.4			82.5		
Brazil		81.1			84.2	
Chile	87.8		90.8			
Colombia			71.7			
Ecuador		63.8			75.1	
El Salvador	62.8				70.1	
Mexico	57.9				65.3	
Paraguay	63.9				72.5	
Peru				67.7		
Uruguay					74.8	
Venezuela						

Source: Sistema de Información de Tendencias Educativas en América Latina/Resumen Estadístico 01/julio 2010

[1] urban population.

Although these rates are relatively high, they still conceal high numbers of students with age-grade gap. In Brazil, for example, only 50% of young people aged 15 to 17 years attended secondary education, which is the appropriate educational level for this age group.

Given the trend of the indicators analyzed, it can be said that the educational advances of the countries analyzed in this study during the first decade of this century are indisputable. To some extent, this progress reflects the continuity of educational policies implemented in the previous decade, in line with the increase of the right to education in the juridi-

cal and legal frameworks, particularly in societal settings where political democracy replaced authoritarian regimes. Furthermore, it should be recognized that such advances were also boosted by the recognition of education as a factor of social transformation and assurance of the full exercise of citizenship.

NOTES:

1 Direct public expenditure on public educational institutions plus subsidies to households and other private institutions.
2 International Standard Classification of Education.

Fernando Ferreira Carneiro*

Environment and health situation in Latin America

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Environment and health situation in Latin America

Fernando Ferreira Carneiro

Presentation

This report aimed to address some key aspects of the Latin American development model and its impact on the environment and on health. As this is a broad topic, with vast possibilities of analysis, it was decided to address issues related to the rural-urban binomial.

We started out with a few selected countries in terms of their importance in Latin America and highlighted some issues to get a clearer dimension of social and environmental impacts of the hegemonic economic development model in the continent.

Although limited in scope, this text seeks to build an analytical axis to bare historical trends in order to shape a more structural analysis of the situation.

Introduction

The economic development model in Latin America, as Eduardo Galeano highlights in *Open Veins of Latin America*, was historically ruled by a production method which required large population displacements and dismantled the community agricultural units. The gold and silver rush was the conquest's main driving force, along with sugar cane exploitation and timber extraction, the underpinnings of the colonizing matrix. More than five hundred years after this colonial model, subordinated to foreign needs and financed by several countries in the global north, Latin American countries currently have agro-exporting landlordism as an important

factor hindering development with social justice and a primary factor of marginalization and poverty in the region (PAHO, 2011).

Taking Brazil as an example for Latin America, Table 1 shows that this colonial "vocation" has been reinforced over the past 10 years in terms of its exports, which are specializing in *in natura* agricultural goods, diverse food, minerals and metals and fuels. Above all, there has been an increased share of minerals and metals, food and fuels, i.e. basically oil. In turn, the percentage of manufactured goods and high-tech manufacturing products exported decreased continuously, the first of which went from 58.4% in 2000 to 37.1% in 2010, and the second fell in the same period from 18.7% to 11.2% of total manufactured exports (CARNEIRO et al., 2012).

Table 1.   Brazil, 2000 to 2010. Goods exports

Type	2000	2002	2004	2006	2008	2010
Food*	23.4	27.9	28.0	25.0	27.6	31.1
Fuels*	1.6	4.9	4.6	7.7	9.5	10.1
Minerals and metals*	9.8	8.5	8.6	10.8	12.1	17.8
Manufactured goods*	58.4	52.6	53.4	50.8	44.8	37.1
High-tech manufacturing**	18.7	16.5	11.6	12.1	11.6	11.2

Obs. *As % of total exports. **As % of total manufacturing products.

Source: World Bank Information System.

This initial focus in Brazil is justified by its global and Latin American role in food production, as shown in Table 1, which is a growing trend closely related to the increased use of pesticides. In this context, in the last three years, Brazil has become the largest consumer of pesticides on the planet, as seen in Chart 1. This agricultural model has generated impacts on health and the environment in general and, more specifically, in the most vulnerable population groups.

Chart 1.   Consumption of pesticides, fertilizers and planted area in Brazil - 2002-2011
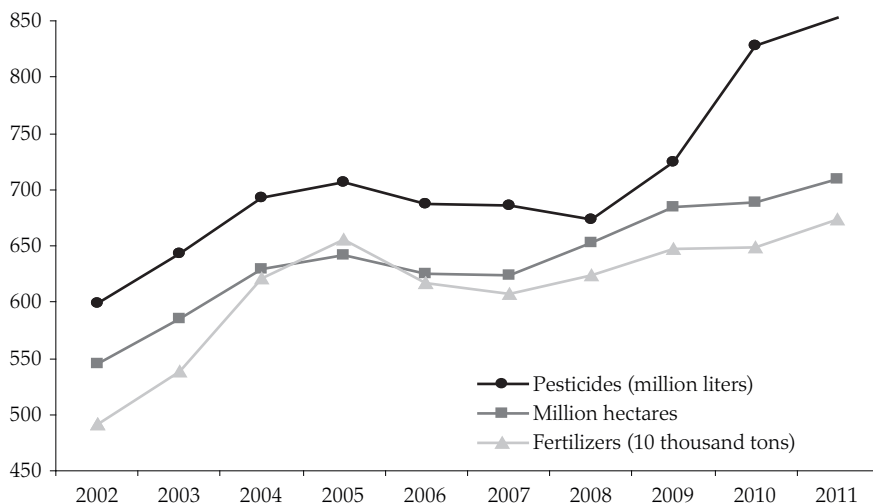
Source: ANVISA, 2012.

With the exception of Brazil, Latin American countries are absolute importers of products formulated of pesticides from China, India or Israel. Brazil imports almost 80% in technical products and the rest is formulated products (FP)[1]. Importing FP hampers excessively the inspection of the marketed product, including its composition. Another aspect is that other Latin American countries have no formal and systematic intervention on the part of health and environmental bodies in the assessment for the registration of pesticides as in Brazil. Argentina has played an important role in the export of pesticides formulated in the Southern Cone, mainly to Brazil and Chile, as shown in Chart 2.

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1   The technical product is the pure active ingredient. The formulated product is a commercial mixture in which the technical product (active ingredient) is mixed with other substances, such as surfactants, thickeners, etc., according to the strategy of use.

Chart 2. **Growth rate of Argentina's FP exports to main countries, from 2000 to 2009, in kgs**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Brazil	0.00	71.74	183.11	290.96	442.56	327.07	381.69	624.46	768.84	633.36
Paraguay	0.00	17.32	-6.19	24.74	0.68	1.17	32.25	71.81	65.28	29.89
Chile	0.00	15.97	1.43	9.31	23.56	47.58	65.60	66.51	161.08	160.66
Uruguay	0.00	25.31	-16.83	-7.22	-7.53	26.05	47.96	82.75	79.38	106.07
Bolivia	0.00	-7.59	-36.13	-11.62	25.16	22.68	30.77	36.77	-100.00	-100.00
USA	0.00	-17.06	16.99	22.88	219.85	191.11	47.14	-73.15	-58.93	-83.46
Others	0.00	8.08	66.70	86.73	185.30	147.25	256.88	371.64	1152.00	1317.00

Source: ANVISA, 2012.

Urbanization, environment and health

This agroexport economic development model contributes to the expulsion of people from the field, favoring the existence of the highest urbanization rates in the world in Latin America and the Caribbean. Between 1987 and 2007, the percentage of urbanization increased from 69% to 77%, for an estimated population of 560 million inhabitants (PAHO, 2011), and, at present, almost 77% of the population live in cities, and the urbanization rate continues to grow.

By analyzing data from South American countries, it is clear that, in 2000, nearly all of them already had major conurbations, with large cities harboring much of the population of each country, with the exception of El Salvador, which harbored only 25% of its population in large cities in 2010. In the same year, other countries reached extreme levels, such as Uruguay, with 48.7% of its population living in its capital, while about 40% of Brazilians and Argentines are living in large cities, according to Chart 3.

Chart 3.   Population in large conurbations with over 1 million people in Latin America (% of total population)

■2000 ■2010

Source: The World Bank. http://data.worldbank.org/indicator/EN.URB.MCTY.TL.ZS
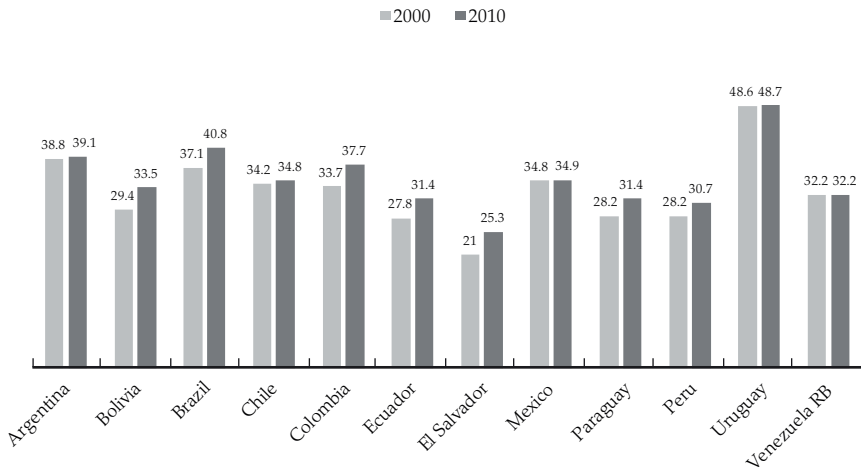
Over the past 10 years, the rural population has been falling against the urban one in the 12 Latin American selected countries. This is one of the serious consequences of this economic development model, which expels rural populations because of the large agribusiness landlordism and contributes to swelling cities that are increasingly becoming unhealthier places. This urban growth, in most cases disordered, generates a greater need for transportation, which, due to contexts of economic and social vulnerability, represents high risks of accidents and a high level of air pollution. In the Americas, it is estimated that, annually, 130,000 people die, 1.2 million people are injured and one hundred in every thousand suffer from some form of disability caused by traffic accidents (PAHO, 2011).

In terms of air pollution, it is estimated about 35,000 people die each year as a result of such contamination in the intra-urban environment and 276,000 years of life are lost for the same cause (PAHO, 2011). The United Nations estimates that in 2010 Latin America had a population of almost 600 million inhabitants; of these, approximately 9% are aged 0-4 years and 6.9% over 65 years. This means that about 100 million people are among the populations most susceptible to air pollution, when one considers that

the highest concentration of contaminants is in big cities and, in Latin America, at least 133 cities have more than 500,000 inhabitants. Table 2 provides a good picture of the Latin American problem.

Table 2.   Annual deaths caused by external air pollution in selected Latin American countries, general population and percentage in large cities, per average air pollution.

Country	Population (millions)	Percentage of population in cities with more than 100 thousand inhabitants	Annual deaths caused by external air pollution	Average PM$_{10}$ μ/m^3
Argentina	38.7	74	12,200	78
Bolivia	9.2	45	1,000	72
Brazil	186.4	45	12,900	35
Chile	16.3	57	2,300	62
Colombia	45.6	41	2,700	42
Ecuador	13.2	48	500	34
El Salvador	6.9	27	300	48
Mexico	107	56	7,200	49
Paraguay	6.2	25	400	103
Peru	28	53	3,100	62
Uruguay	3.5	44	1,300	154

Source: Environmental health burden. Country profile.

It is noteworthy that the country with the largest concentration of population in large cities, namely, Argentina (74%), is proportionally the country with the highest mortality from air pollution.

Chart 4 shows the continued declining trend of the rural population against the urban population in Latin America over the last decade.

Chart 4. Rural population of selected Latin American countries (% of total population)
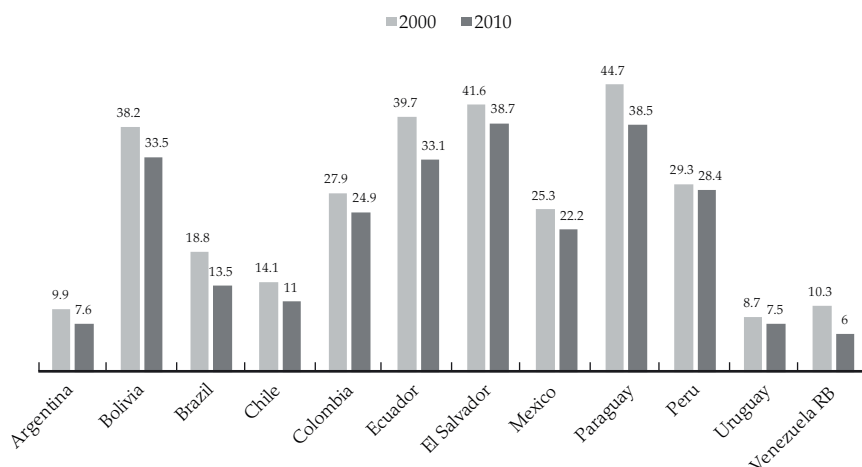
Source: The World Bank.

The poorest population of large cities lives with environmental inequality and deterioration in urban marginal areas where housing conditions, access to potable water and basic sanitation are poor and the population is exposed to levels of chemical and biological contamination through the discharge of domestic and industrial waste inadequately treated or disposed of in aquifers (PAHO, 2011).

According to World Bank data, in 2000, Bolivia had the lowest percentage, i.e., only 23% of the population had access to basic sanitation; on the other hand, Uruguay had the highest percentage, 96%; and 75% of Brazilians had access to sanitation improvements.

Chart 5. **Percentage of the population with access to basic sanitation in 2000 and 2008**
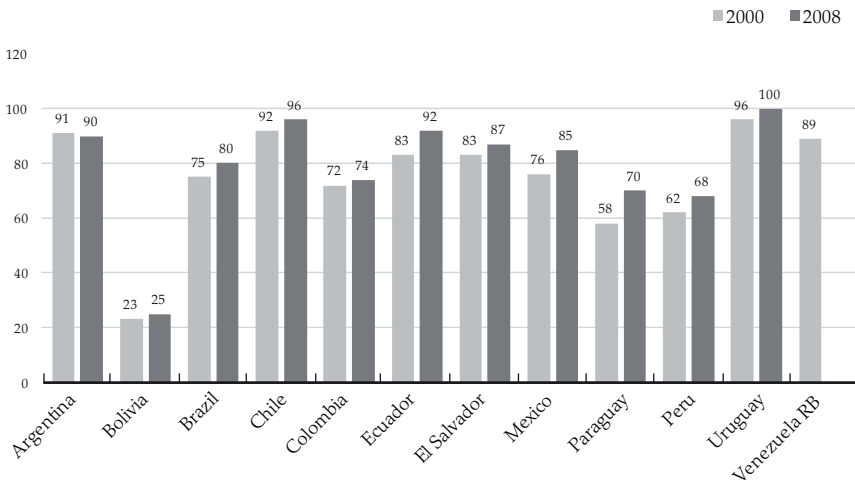
Source: The World Bank.

Chart 5 shows a slight trend toward improvement in the eight-year period among countries with regard to sanitation, with Uruguay recording full access of its population, whereas Bolivia remained with the lowest percentage of access, i.e., 25%, and Brazil reached 80%. This may be associated with the maintenance of diarrheal diseases as causes of mortality and morbidity among children in these countries, influencing indicators such as infant mortality. According to PAHO Health in the Americas 2012 report, the infant mortality rate for children under five (per thousand live births) in Latin America is 17.3, whereas in North America this same rate is 7.4. These large differences can also be explained by the precarious sanitation in Latin America compared to other regions. Sanitation is one of the most important sustainable health protection actions for the populations. Countries such as Bolivia have large deficits, with corresponding large investment needs for the sector. Other countries have shown a slow growth in health improvements.

Climate change, environment and health

According to the United Nations Intergovernmental Panel on Climate Change (IPCC), the predictions for 2100 are that the planet's average temperature will rise between 1.8ºC and 4.0ºC, sea level will rise and extreme hydrological phenomena (floods and droughts) will be more intense (PAHO, 2011).

In Latin America, the most vulnerable regions are the small Caribbean islands and coastal regions, which will be subject to sea level rise and flooding. The fast development of urban areas, which end up becoming poor neighborhoods, will increase the vulnerability of the populations to extreme weather events such as floods and landslides.

In the first map, it can be observed that the largest CO_2 emitters on the planet are the U.S., Europe and China, while the African continent and India will be the most impacted areas in terms of climate-sensitive health effects. Latin America will suffer an intermediate impact level when compared to Africa and Asia.

Figure 1.   Comparison charts with accumulated carbon dioxide (CO_2) emissions (per country) without reduction in the period 1950-2000 in relation to the regional distribution of four climate-sensitive health effects (malaria, malnutrition, diarrhea and deaths on land due to flooding)

Countries scaled according to cumulative emission in carbon equivalent to 2002.
Patz et al., Ecohealth, December 2007

WHO regions scaled according to WHO estimates of mortality per million people in the year 2000, attributable to the climate change that occurred from 1970s to 2000. Patz et al., Ecohealth, December 2007

Corvalan, 2008

Chart 6 indicates that, between the years 2008 and 2011, the impacts of natural disasters, in terms of the affected population in Latin America, increased in all the 12 countries selected for this analysis. This trend confirms IPCC's predictions in terms of increased adverse weather conditions with their respective impact on the lives of the most vulnerable populations.

Chart 6.   Impact of natural disasters in terms of the affected population in Latin America, from 2008 to 2011
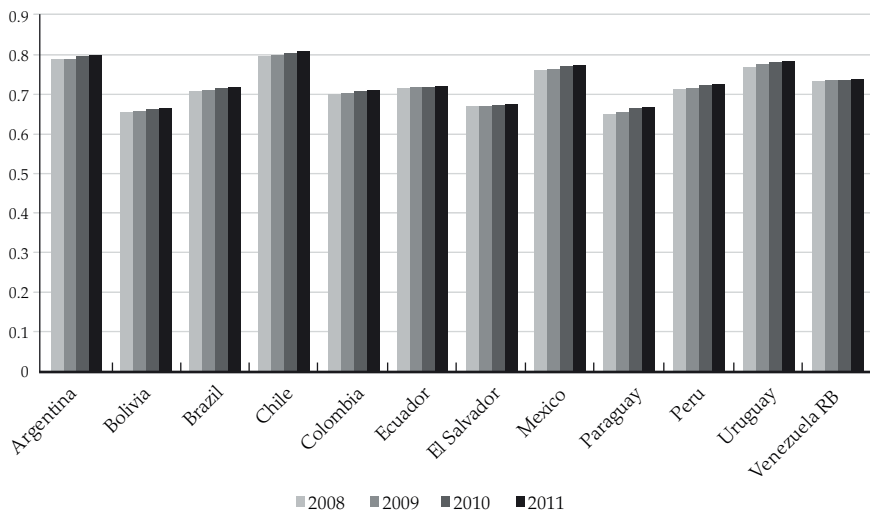
Source: International Human Development Indicators.

DEPLETION OF NATURAL RESOURCES AND HEALTH IMPACTS

Another important indicator to measure the depletion of natural resources is the ecological footprint. This indicator expresses the ecological footprint of a country, corresponding to the size of productive land and sea areas required to generate products, goods and services that sustain their lifestyles. In other words, it is about translating into hectares (ha) the territorial area that a person or an entire society "uses" on average to sustain itself (WWF, 2012).

Again, the U.S., Europe, India and China are the regions responsible for the large imbalance in terms of the planet's natural resources use. What happens in Latin America, in terms of scale, does not compare with the problems generated in these countries, as shown on the following map.

Figure 2.   Ecological footprint world map
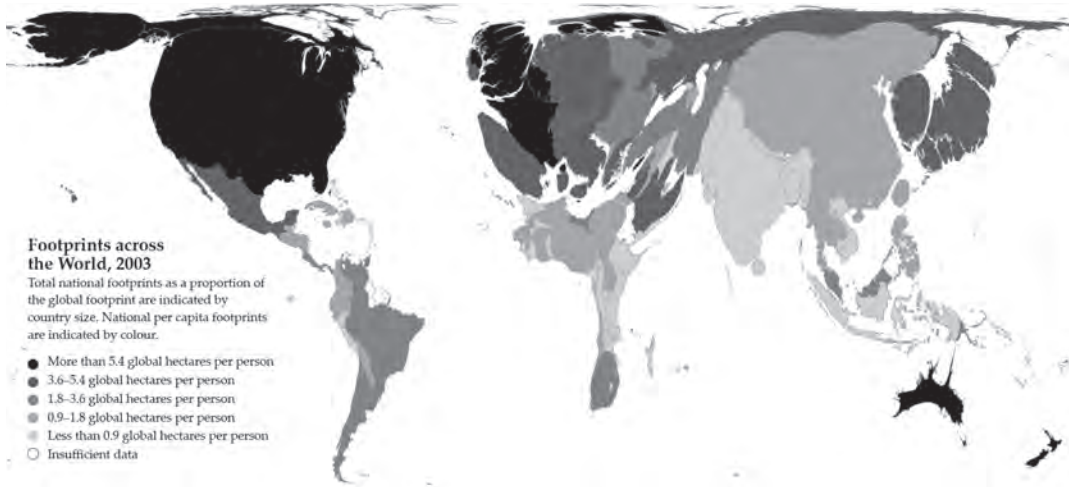
Deforestation, stemming from the over-exploitation of timber and increased grassland and cropland areas, is reducing the land vegetation cover, reducing its genetic diversity and, thus, promoting desertification and erosion.

Chart 7. **Depletion of natural resources in Latin American countries (% of GNI)**
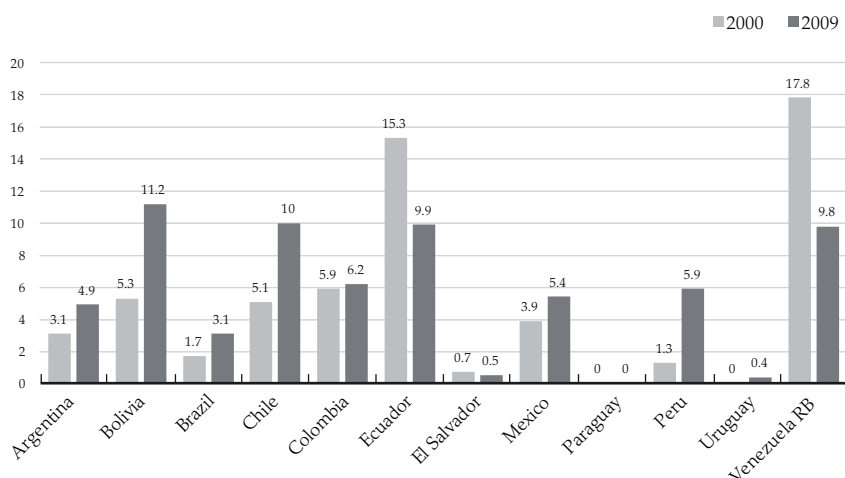
Source: The World Bank.

The country data above show that only a few countries have reduced rates of depletion of natural resources, especially Venezuela, from 17.8% in 2000 to 9.8% in 2009, and Ecuador, from 15.3 % in 2000 to 9.9% in 2009. Contrary to this logic, comes Brazil, almost doubling from 1.7% in 2000 to 3.1% in 2009 its rates, as well as Bolivia, more than doubling from 5.3% in 2000 to 11.2% in 2009, a trend observed in other selected countries that, on average, doubled their natural resources exploitation levels, such as Chile, Peru, Mexico and Argentina.

Deforestation is one of the greatest expressions of this natural resource depletion. Latin America and the Caribbean suffer an accelerated process of forest destruction which in 2003 caused the loss of 2.5 million hectares of forests in the Amazon, which harbors half of the planet's biological diversity. Net vegetation loss in Brazil, Paraguay, Bolivia and Argentina accounts for 80% of the total in the region. Brazil alone deforested 45% of all green area lost during the period. On the other hand, Costa Rica, Colombia and Venezuela reported reforestation gains.

The loss of arable land, one of the other consequences of this deple-
tion, contributes to major threats to human life in these regions: sove-
reignty and food security.

The environmental disease burden, which is the environmental
share of what is produced as diseases and deaths, also strengthens the fact
that Africa will be the most affected continent, followed by some Latin
American countries, such as Bolivia, Peru and Ecuador.

Figure 3. **Environmental disease burden in DALYs per 1000 people, by
WHO Subregion (2002)**

Source: WHO, 2002.

The issue of natural resources depletion has been clearly expressed
in Latin America as one more component of the contradictions between
capital and labor, based on the development models adopted. It is essential
to perform further analyses and studies scaling these impacts on human
life and the planet in order to assess the development trends in our coun-
tries.

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Environmental conflicts, health and a model of economic development in Latin America

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Environmental conflicts, health and a model of economic development in Latin America

Marcelo Firpo Porto

1. Introduction

This document aims to present a report on the strategic importance of environmental conflicts in its relationship with features of the model of economic development in Latin America, adopting as a main reference the Brazilian case.

More than a problem limited to environment, economy and environmental health, understanding environmental conflicts enables the development of courses of action for the promotion of public health in a region where natural resources exploitation was and remains remarkable in the history of its economic development. The impacts of the extractive model are countless, affecting not only the health of ecosystems, but also people's health and human rights. In the countryside and forests, the main affected are Indians, *quilombolas*, peasants, family farmers, fishermen and other groups depending directly on natural resources and ecosystems' vitality. However, urban populations – with high growth rates in the 20th century – were also made vulnerable as they were displaced from the countryside to urban areas without simultaneously the implementation of public policies of proper housing for the lower classes and professional qualification. As a result, besides the huge informality in the region, an intense process of shanty towns has occurred, with housing areas without services and basic infrastructure for a decent quality of life.

The issue of environmental conflicts along with environmental justice can contribute to the unification of two of the main challenges of the contemporary world:

(i)   Equity and human development, in conjunction with the issues of democracy and human rights, facing the permanence or worsening of strong inter- and intra-regional inequalities in the world, including Latin America, often involving disputes between countries, peoples and ethnic groups over natural resources;

(ii) Environmental sustainability and quality of life. Such challenges are expressed both in terms of local environmental problems affecting specific communities – whether they are settled in the countryside and forests or even urban areas, such as those living without basic sanitation, nearby industries or polluting and hazardous waste sites, or even exposed to natural disasters – as for global ecological problems – such as ecosystem degradation, loss of biodiversity, climate change with potential worsening of extreme events and cross-border chemical pollution.

Besides worrying about the quality of life of vulnerable populations living in the countryside and towns, environmental conflicts and environmental justice issues bring up the advocacy for health and the empowerment of ethnic populations and traditional peoples, such as indigenous peoples, Afro-descendants, fishermen, small traditional farmers, as well as specific issues related to gender, women's rights, migrants and minorities. By joining social justice and human rights to environmental and health protection, environmental justice movements carry with them the potential for communication between different people, countryside and urban languages and cultures that make up the rich and multiple diversities of Latin America. Thus, this helps to operationalize possible dialogues that may build new commitments and dreams of a world that is socially fair and environmentally sustainable in the region.

The analysis of environmental conflicts allow us to understand in an articulated way the demands and actions of social, environmentalist and

community movements, with the production of knowledge in the academy and new institutional practices on the part of local, national and international organizations that work with matters of health, environment, human rights and sustainable development. It also allows engaging and integrating various issues such as equity; social determinants of health; local and sustainable human development; health promotion; environmental health; cities, schools and healthy housing; and also allowing to contribute to integrate and operationalize many commitments made by countries and international agencies, such as the Millennium Development Goals and chemical safety.

The report is organized as follows: after this brief introduction, we discuss the definition of environmental conflict and its relationship with the model of economic development and public health. In the next topic, we present a typology of environmental conflicts according to their spatial and population origin (rural and urban) and the relationship with the economic activity and/or types of use of land and natural resources, among other elements. We complement the report with some selected examples of environmental conflicts, finalizing it with a reference bibliography.

Definition of environmental conflict, model of economic development and relationship with health

The worsening of the social-environmental crisis in different territories, countries and regions expresses the appropriation of natural resources and public spaces for specific economic purposes that can produce economic exclusion and expropriation, thus causing reactions from social movements, organizations, groups and populations that feel affected in their fundamental rights involving issues such as health, work, culture and environmental preservation. In this context, new arguments and symbolic struggles have been developed by social movements, scholars and activists who seek to delegitimize the discourses, practices and public policies aimed at advocating the hegemonic development models that hyper value the benefits of big enterprises and market economy, hiding or invi-

sibilizing environmental risks, loss of identity and the vulnerabilization of affected populations (PORTO, 2009).

Therefore, the concept of environmental conflict expresses the fight for resources and for different ways of facing development, involving not only organized social movements, business and national and transnational industries in sectors such as agribusiness, mining, energy production, infrastructure works such as roads and ports, but also governmental institutions and public policies.

Environmental conflicts are present in different continents and countries and have been the object of academic production by authors in various fields, such as Social and Environmental Sciences, including Political Geography, Political Ecology, Ecological Economics and, most recently, Public Health itself. Their emergence and intensification, especially in the latest decades of economic globalization, are a result not only of the intensification of economic activities and use of natural resources in the global and commodities market: they are a consequence of a restricted view of economic development, determined by productivist and consumerist criteria disrespecting the lives of humans and ecosystems, as well as peoples' culture and values in the territories where investments and production chains take place. From an economic standpoint, such restriction occurs through the negative externalization of costs associated with the short, medium and long-term impacts on the environment and populations, since many public health problems and environmental degradation will not be paid by producers and consumers involved in production and trade chains, but rather by the people affected, society as a whole and future generations. For example, environmental and human contamination resulting from the intensive use of pesticides in the large-scale agribusiness model, as a rule, is paid for by workers, families, populations and public health and social welfare systems of the countries.

From the standpoint of public health, environmental conflicts allow us to understand the relationship between health and environment based on the so-called social determinants of health, where the concept of environmental conflict is a mediator dealing with issues such as health, environment, economic development, human rights and democracy. The conflicts and disputes emerge in territories where social and environmental

inequalities and the vulnerabilization of populations impacted by different development projects and economic enterprises historically materialize.

From this perspective, population health, human rights and exposure to different risk situations must be understood within political and symbolic disputes involving different projects and use of (natural, economic and cultural) resources in the territories, as well as the use of power to impose such projects. Besides the use of direct force, power is expressed through economic, political and symbolic means at different levels and can feature a more democratic process or, conversely, more technocratic and authoritarian ones depending on the way these levels operate. For example, in public policies, institutions and ways of participating in the decision-making process, in the availability and access to information – which includes the media in its various forms –, in the field of justice, academia and technological development, among others.

Environmental conflicts should be analyzed not only under their negative and divisive aspect, but also their dynamic potential that is revelatory, transforms the social organization and boosts collective health promotion actions. Due to their nature, conflicts allow the emergence of social movements and community organizations that can be treated in different ways. From the hegemonic perspective, the space in which to resolve conflict is limited to the consolidated institutional instances and to the search for consensus among stakeholders through mechanisms such as composition, negotiation or decision by majority vote in a process that can hide important social dissent and isolate demands, favoring the establishment of fragmented social identities. In contrast, there is a plurality of demands, protests and collective rights achievements which, through their joint equivalential coordination, produce subjectivities, platforms and agendas wider than stakeholders (transformed into stakerights), networks and social movements which are fundamental to social transformation (PORTO; SCHÜTZ, 2012; ALMEIDA, 2012).

To authors of political ecology and ecological economics, such as Martinez-Alier (2007), understanding environmental conflicts enables a critical insight into the neoclassical model of economic development and contributions made by environmental justice movements which arise as an alternative to the other two aspects of international environmentalism.

The first aspect has a preservationist character, focused on the "cult of the wild" that aims to preserve the wild and fragile nature from human action and systematically conflicts with the traditional people and farmers living in areas considered priority of environmental preservation. The second aspect is called eco-efficiency – or, according to its latest evolution, green economy – and seeks to coordinate the concept of sustainable development with market mechanisms based on the valuation of externalities and on efficient environmental management of natural resources and the production-consumption cycles supporting the economy. To Martinez-Alier (2007: 27), the second aspect has become "a religion of usefulness and technical efficiency devoid of the concept of the sacred" under the hegemony of economists and engineers, although coupled to the social and humanities sciences in the development of participatory methodologies and vulnerability studies based on the concepts of consensus and governance that disregard existing conflicts as the basis for local and regional development within a democratic perspective. Green economy can be understood as a development of eco-efficiency, centered on transition marketing processes towards an economy without fossil fuels. One of the main tools of the neoliberal ideal is the creation of specific markets divided into components – such as carbon, biodiversity or environmental services. Thus, a process of liberalization of the nature and its resources occurs through a dangerous process of creating titles that could allow financial speculation, corporate control, loss of food sovereignty and the emptying of life in the territories subjected to such logic.

TYPES OF ENVIRONMENTAL CONFLICTS ACCORDING TO PRODUCTIVE AND COMMERCIAL CHAINS

One of the bases for understanding environmental conflicts is Political Ecology, a field of theoretical and political discussions that studies the ecological distribution conflicts or simply environmental conflicts. It begins to strengthen mainly as from the 1980s through the growing links between environmentalist, social and academic movements, enhancing political economy in the critique of the philosophical foundations of neo-

classical economics by incorporating environmental issues in the understanding of the economic and power-related dynamics that characterize modern societies.

In the view of Political Ecology, in its interface with Ecological Economics, the environmental conflicts can be defined as ecological distribution conflicts. They are linked to access to natural resources and services and to damage caused by pollution, since the industrial trade and the production-consumption model set up a social metabolism that affects such conflicts. These occur in accordance with the moments when the goods trade chains ("commodity chains") are produced and are made upon the material's extraction or the production of energy used, during the production or transport stage or, ultimately, the disposal of tailings (MARTINEZ--ALIER, 2007; PORTO; MARTINEZ-ALIER, 2007).

Conflicts at the time of extraction of materials and production of the energy used are present in almost all regions of the world, increasingly focusing on commodity-exporting countries. They may be associated with land occupation and pollution caused by various activities such as: iron, bauxite and uranium mines; foundries, steel mills and aluminum plants; oil or gas extraction and refining; or even conflicts related to the extraction of building materials. Several international social networks with operations in Latin America have been established around these conflicts, such as Oil Watch. Another source of conflicts, also known as biopiracy, is found in the appropriation of genetic resources (wild or agricultural) without proper payment or acknowledgment of ownership of peasants or indigenous people over them (including the extreme case of the Human Genome Project).

Soil degradation has been another major source of conflicts in many countries and results from soil erosion caused by the unequal distribution of land or the pressure caused by export-related monocultures, especially grains such as soybeans. A similar situation is found in crops that, unlike what is often stated, are not forests because they work as tree plantings like eucalyptus, pine and acacia grown for wood production. This one can be used in the field of pig iron and steel (important in Brazil), or even in the manufacture of paper pulp or cellulose, whose output is routinely exported. In recent years, besides trees, the use of biomass for the production of

biofuel (particularly cane, but also diesel from vegetable oils) has been scaling up. There is a strong relationship between the growth of biomass material flow and the increase of environmental conflicts, including the spread of monocultures on family farming areas and the consequent danger of losing food security and sovereignty. Another example of appropriation and degradation of natural resources and soil is the increase of agriculture aimed at the production of meat and dairy products, in addition to shrimp farming that have destroyed mangroves and caused reactions organized by environmentalists and populations in order to preserve the means of survival of fishermen. Also related to fishing are local, national and international conflicts regarding the demarcation of exclusive fishing areas and the defense of local and community fisheries as opposed to industrial fishing. Water-related conflicts have created important movements in various countries, such as those against the construction of large dams to generate electricity or for irrigation purposes, or even conflicts related to groundwater pollution by pesticides or industrial pollution.

Transport-related conflicts are booming due to the increased use of materials in the economy that need to be moved between the locations of extraction, production and consumption. During the 20th century, transport-related indicators (e.g. the amount of tons transported per the number of road kilometers) show stronger growth than GDP and the outputs of material and energy from the economy. Transport-related conflicts are compounded by events such as oil spills from tankers or pipelines leaks, or even due to the construction of new highways, waterways, ports and airports used to the increasing runoff of agricultural, mineral and industrialized products. Conflicts related to waste disposal and pollution relate to the "outputs" of social metabolism. The first conflict of this nature was called in the U.S. toxic struggles, referring to the struggle against the risks caused by exposure to heavy metals, dioxins and other hazardous pollutants emitted mainly, but not only, by chemical and petrochemical industries. Cross-border pollution amplifies the issue and points to problems such as sulfur dioxide which crossed borders in Europe and produced acid rain, but it has also become a problem in Latin American metropolises. Another type of conflict that is widespread in much of the world and is especially serious in Latin American countries is related to landfills, waste

incineration and the export of toxic waste to poor countries, including plastic and electrical-electronic waste (e-waste).

A recent and particular type of conflict is associated with the so-called green economy and mechanisms aimed at the use of oceans, forests, soil and atmosphere for carbon sequestration or as temporary carbon dioxide reservoirs. Besides discussions regarding the equal distribution of rights to use and the fight against disproportionate releases of carbon dioxide (carbon debt), several environmentalist groups have mobilized to prevent the use of resources from this fund for the maintenance and scale--up of monocultures such as those of eucalyptus, besides criticizing the maintenance of polluting practices and the nature commoditization feature imposed by such market mechanisms.

A final type of conflict, yet related to the "outputs" of social metabolism, relates to the safety of consumers and citizens around the potential risk of new and dangerous productive technologies and investments. Both in rich and in poor countries, several disputes revolve around technologies like nuclear power, genetically modified organisms, pesticides and emerging diseases such as bovine spongiform encephalopathy, so-called mad cow disease. Disputes deal with the security criteria in risk management and control and the application of the precautionary principle, and they show how public perception of the risks of a same technology can be very different among countries. At the same time, such differences and the speech of "progress" have been used to scale-up forms of labor and risk division internationally through investments in more polluting and/or dangerous sectors in the so-called less developed countries.

A SCENARIO OF ENVIRONMENTAL CONFLICTS

The table below presents a schematic summary of four major groups of environmental conflicts of relevance to Latin America. The typology adopted relied mainly on the theoretical formulation expressed in the previous item on the social metabolism of productive and commercial chains, focusing on four groups of conflicts.

The first, present in nearly all of Latin America and of great importance in the current economic situation in Brazil, is related to agribusiness export, particularly to the production of rural commodities. Among them we highlight the monocultures of soybean, of trees such as eucalyptus and pine, sugar cane to produce ethanol (biofuel), shrimp farming and ranching. The second, of particular relevance to many countries in Central and Andean America, refers to both the mining of metals, oil extraction and processing industries for the production of commodities such as petroleum products, steel and aluminum. Both mining and associated industries have a high environmental impact, affecting the health of ecosystems, workers and people in the impacted regions.

Table 1.   Relevant types of environmental conflicts and examples of impacts

TYPE OF CONFLICT AND ECONOMIC SECTORS INVOLVED		EXAMPLES OF ENVIRONMENTAL AND HEALTH IMPACTS
Extractivism linked to agribusiness (rural commodities)	Soybean monoculture Eucalyptus monoculture Shrimp farming Timber factories Cattle breeding Biofuels	Biodiversity loss and greenhouse gases from deforestation and fires Destruction of ecosystems such as the Amazon, savannahs, swamplands, Atlantic forest and mangroves Environmental contamination of soil, water and food by pesticides Human contamination of workers, residents and consumers by pesticides Invading and forcing out Indians, quilombolas, extractivists, fishermen and small farmers from their territories Concentration of land, hampering agrarian reform and agro ecology and boosting rural exodus
Extractivism linked to mining, oil extraction and industrial production for metal commodities	Iron mining and steel cycle Bauxite mining and aluminum chain Oil extraction, petrochemical industries Gold, silver, copper mining and other mining activities (such as uranium)	Environmental degradation and water, air and soil pollution in mining areas Air pollution in areas near industrial plants Environmental and occupational accidents in industrial and mining activities with risks to workers' health Cases of occupational contamination, mainly by hazardous chemicals substances

Production of energy and major infrastructure works	Dams and hydroelectric plants Petroleum industry Other forms of energy production (thermo-electric power plants, nuclear and wind power plants) Waterways and highways Transposition and integration of watersheds	Changing weather and water regimes in the construction of hydroelectric dams Deforestation, population displacement and environmental degradation resulting from the construction of large dams and hydropower plants Oil and oil derivatives spills from ships and pipelines in various regions of the country Air pollution caused by thermoelectric power plants
Urban conflicts related to housing, lack of infrastructure in cities and "natural" disasters	Real estate Public power and sanitation sector Risk industries without isolation areas around them Public safety	Lack of housing supply for low-income people Increase of slum areas without urban infrastructure Disasters and/or their aggravation, such as earthquakes, floods and landslides in slums, expanded chemical accidents in densely populated risk areas Construction of buildings, condominiums and slums in contaminated areas Lack of sanitation (drinking water, sewage and garbage collection) Urban violence, especially in poor areas of urban fringe

Source: Adapted from Porto (2007).

The third group of conflicts stems from energy production and large infrastructure enterprises. Among them we highlight dams and hydroelectric power plants, oil and oil derivatives industry, thermoelectric power plants, nuclear power plants (present only in Argentina, Brazil and Mexico, but with plans in several other countries, such as Chile, Venezuela and Ecuador), waterways and highways and transposition and integration of watersheds. It is interesting to note that even technologies and manufacturing processes involving alternatives considered cleaner or sustainable (such as biofuel and wind power production) can give rise to environmental conflicts involving land dispute (through the scale-up of monocultures such as sugar cane and wind farms) and possible environmental impacts. Finally, typically urban environmental conflicts involve mainly problems in regions that American theorist Robert Bullard calls "sacrifice zones", i.e. areas where excluded and discriminated populations are forced to live

and work in hazardous or degrading conditions, with lack of sanitation or exposed to greater pollution risks – or even flooding or major impacts as a result of earthquakes or major industrial accidents. This phenomenon lies behind the statistics of important technological and "natural" disasters that mark the vulnerability of the Latin American population in many countries.

Hundreds of concrete examples of environmental conflicts are available on the internet at some specific sites. For example, in the Brazilian case, there is the Map of Conflicts Involving Environmental Injustice and Health (www.conflitoambiental.icict.fiocruz.br) with approximately 400 cases of conflicts throughout the country and that is currently being updated and expanded. Regarding Latin America, the Observatory of Mining Conflicts in Latin America (OMCLA) is responsible for updating and disseminating mining-related environmental conflicts in Latin America. Database for research is found at http://www.conflictosmineros.net. In Europe, there are two important maps to disseminate conflicts: the first one, coordinated by the Autonomous University of Barcelona, is the Environmental Injustice Map, linked to the Environmental Justice Organisations, Liabilities and Trade (EJOLT) project available at www.ejolt.org. Finally, the Documentation Center of Environmental Conflicts (CDCA), an organization headquartered in Italy, provides a map of environmental conflicts focusing mainly on Africa, Latin America, Asia and Europe. The map is available at www.cdca.it.

Final considerations

The prevailing model of economic development in Latin America systemically produces many environmental conflicts arising, above all, from the intense exploitation of natural resources associated with significant and unequal environmental, social and health impacts deriving from this process. Therefore, it is a major challenge to face the problem in order to promote social justice, environmental sustainability, health, human rights and democracy in the region.

There are two groups of possible actions by governments and institutions devoted to the issue: the first one refers to specific actions related to the health sector or in partnership with the environmental sector. For example, promoting the development of epidemiologic studies and the production of social, health and environmental indicators pointing inequities, including related to ethnic, racial and gender aspects; fostering participatory methodologies for the shared production of knowledge, such as popular epidemiology and community-based and participatory methods of health indicators promoting scientific and popular knowledge dialogue; building maps of social and environmental vulnerability as well as environmental conflicts; mapping and remediating contaminated areas; establishing programs for the education, training and empowerment of affected and vulnerable communities; participation in environmental licensing processes through risk assessments and production of future scenarios, particularly for large enterprises with more environmental and health impact; among others.

A second group is related to broader intersectoral actions. Among them, we highlight actions in the field of human rights; affirmative policies against ethnic, racial and gender discrimination; land demarcation and creation of reserves and property rights in the areas of indigenous, quilombolas and extractivists' communities; incentive for agrarian reform, family farming, as well as food safety and sovereignty programs and agro ecological transition; participatory urban planning in slum areas and expanding coverage of drinking water, sewage and garbage collection; affordable housing supply and legalization programs in urban areas, as well as public security coordinated with public policies aimed at human rights and the celebration of democratic culture; youth training and digital inclusion in vulnerable urban communities; fostering family farming, community tourism, alternative energy, recycling; among others.

Another important aspect from the standpoint of democracy and human rights is the right to expression and the fight against violence. An important feature of environmental conflicts in Latin America, expressed

in conflicts present in the various aforementioned maps on environmental injustice, is persecution, threats and even murders of community leaders and environmentalists engaged in environmental conflicts.

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