ETHNICITY AND THE MILLENNIUM DEVELOPMENT GOALS

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ETHNICITY AND THE MILLENNIUM DEVELOPMENT GOALS *

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  surveys.

Prologue

The United Nations Development Programme, the Inter-American Development Bank, the World Bank, and the Economic Commission for Latin America and the Caribbean give high priority to the work on the Millennium Development Goals (MDGs), including the assessment and monitoring of countries' possibilities to reach specific targets, and the discussion of alternative policies to reach the goals.

Activities are coordinated with other multilateral organizations, including all UN agencies and programs. Governments and civil societies constitute major actors in MDG monitoring, assessments and policy formulation.

In the last few years, several analytical and methodological developments have been supported to better approach the assessment of different countries' possibilities to reach the agreed targets by 2015. Latin America and the Caribbean has been making good progress towards some individual goals, such as achieving universal primary education, but has been less successful in other areas, mainly poverty reduction. In particular, the region shows high levels of inequality. National averages for different indicators and targets do not fully represent all groups in society. Therefore, several attempts to disaggregate goals and targets have been launched to understand the causes of the persistent inequality in the region.

This publication concentrates its analysis on ethnicity[1]. First, the situation of indigenous and afro-descendant people is explored in terms of poverty, educational achievement and gender equality. In particular, the document examines their past and present performance towards

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[1] In the Executive Summary and in Chapter 1, the authors explain in detail the limitations faced with regard to data availability, definitional challenges and methodological approach.

the MDGs, and compares it with the national average, as well as with that of other groups (euro-descendants and mestizos). The "distance" of these groups to the national average in some of the MDGs and their performance during the last decade toward those goals is investigated. Comparisons with other groups (e.g. euro-descendants and mestizos) of both present situation and past performance in relation to the MDGs are highlighted. Then, a set of micro-simulations is performed to increase the understanding of the factors behind the income and educational disadvantages of indigenous and afro-descendant peoples, and to portray different scenarios (in terms of growth and redistribution) in which poverty in these groups can be significantly reduced.

The analysis has been performed by a team of researchers from the Centro de Estudios Distributivos, Laborales y Sociales (CEDLAS), National University of La Plata, Argentina. Their opinions do not necessarily reflect the institutional position of the co-sponsors of this initiative. These institutions, however, consider that this publication is an important contribution to the on-going assessment of how countries in Latin America and the Caribbean can reach the MDGs and facilitate the region's understanding of the critical role of incorporating the ethnic dimension in the analysis of the MDGs and poverty reduction, and social inclusion policies in general.

New York, April 2005

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Introduction

In September 2000, the world's leaders adopted the UN Millennium Declaration, thereby committing all nations to exert stronger efforts to improve human welfare across the globe. This ambitious declaration defined a precise set of goals, known as the "Millennium Development Goals" (MDGs). Many international organizations in pursuit of progress towards completion of the MDGs are gathering data and making them comparable across countries. Most of the data produced in order to assess progress are, however, national averages; it is thus crucial to take into account that progress often differs widely across regions or groups in the same country. The emphasis in this study is placed on ethnicity. In particular, we analyze the situation of indigenous and afro-descendant groups[2] vis-à-vis euro-descendant and mestizo groups[3] using micro-data from household surveys from fifteen LAC countries. This paper mainly focuses on the analysis of the first three MDGs: (1) Halving extreme poverty and hunger; (2) Achieving universal primary education; and (3) Promoting gender equality.

Our sample includes fifteen Latin American and Caribbean (LAC) countries: Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, and Suriname. This sample seeks to represent as high a percentage as possible of the indigenous and afro-descendant population in LAC, based on the methodology used in this study, which is further detailed below, and on data limitations. We produced a large number of statistics by ethnicity that are included in this report, and can also be accessed and downloaded in a convenient format through www.depeco.econo.unlp.edu.ar/cedlas

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[2] The authors use the term "non-whites" as a synonym for indigenous and/or afro-descendant groups in the study. For more details on these definitions, please refer to pages 48 and 49.

[3] The authors use the term "whites" as a synonym for euro-descendant and *mestizo* groups in the study.

We have two main objectives. First, we explore the situation of indigenous and afro-descendant individuals in terms of poverty, educational achievement and gender equality. In particular, we investigate the "distance" of these groups to the national average in some of the MDGs, and their performance during the last decade toward those goals. Comparisons with other groups (e.g. euro-descendants and *mestizos*) of both the present situation and past performance in relation to the MDGs are highlighted. Second, we perform a set of micro-simulations to increase the understanding of the factors behind the income and educational disadvantages of indigenous and afro-descendant peoples, and to portray different scenarios (in terms of growth and redistribution) in which poverty within these groups can be significantly reduced.

Chapter 1: Ethnicity in LAC

In this chapter, we propose an operational definition that allows us to identify ethnic groups in LAC household surveys. According to some estimates, there are over 50 million indigenous peoples and over 120 million individuals of afro-descent in LAC, representing almost 33% of the total population in the region. However, many censuses and household surveys in LAC have not nearly identified ethnicity; only until very recently have some surveys included such types of questions.

We follow three general methods to identify ethnicity in household surveys. Although each method has its limitations, we consider them to be the best methods available at this time to identify ethnicity in household surveys. Depending on the country, we consider that a person is indigenous or of afro-descent if he or she: (i) identifies himself or herself as belonging to a certain ethnic group, (ii) identifies his or her native language or speaks an indigenous language, or (iii) lives in a territory that is mostly populated by persons from certain ethnic groups. We use self-perception as a method of identification in Bolivia, Brazil, Guatemala, Nicaragua, Panama, Peru, and Suriname. We use language as an identification criterion in the cases of Chile, Ecuador, Haiti, and Paraguay, and regions in Colombia, Costa Rica, Mexico and Honduras.

In chapter 1 of the study, we present a description of important socio-economic characteristics (location, household type and labor market variables) among indigenous and afro-descendant individuals. We find that average non-white families in LAC countries live in rural areas and are slightly larger (usually having more children) than white families. Also, we show evidence that a typical indigenous or afro-descendant male has the same participation rate in the labor market,

and experiences lower rates of unemployment than his white counterpart. Additionally, he has a higher probability of working in the primary sector of the economy, is usually self-employed and works in a small firm. The average indigenous or afro-descendant female, on the other hand, tends to have lower participation and employment rates than her white counterpart.

Chapter 2: Poverty Reduction (MDG 1)

In this chapter we provide descriptive evidence regarding the relationship between ethnicity and poverty. We analyze the situation of indigenous and afro-descendant peoples in terms of poverty and living conditions in fifteen LAC countries. We measure poverty with different indicators (headcount ratio, poverty gap and severity index) using international poverty lines (USD 1 a day and USD 2 a day at PPP), official poverty lines (extreme and moderate) and 50% of median income.

In almost every country and according to all poverty lines, non-white groups have higher poverty rates than white groups. For instance, the median ratio of non-white poverty to white poverty is 2.2 when using one dollar a day, and 1.8 when using two dollars a day.

Differences in other indicators of living conditions are also significant. In urban areas, non-whites have lower probabilities of access to safe water than whites. Differences are more significant regarding access to hygienic restrooms: on average, whites in urban LAC have 20% more access than non-whites. In rural areas, these differences are smaller.

To provide preliminary evidence on potential ethnic discrimination, we estimate wage equations, where we regress the log of wage on a model that defines ethnicity and several control variables. The coefficient associated with ethnicity essentially tells us how much more an individual expects to earn if he or she is non-white, holding constant the other characteristics. We find that these estimated coefficients are in general negative, meaning that the expected wage is reduced because of being non-white. We find that lower coefficients (*i.e.* more discrimination) are associated with higher poverty among non-whites.

Chapter 3: Improving Educational Outcomes (MDG 2)

In this chapter we first analyze educational outcomes from several perspectives, always highlighting the analysis of differences by ethnicity. We compute literacy rates, enrollment rates for different age groups, educational levels, and what is known as "school gaps". We come to

two important conclusions. First, we find that for children of primary school age, differences by ethnicity in all of these outcomes are not quantitatively important. However, it is also true that in some countries, differences do exist and should be addressed. Second, we find that differences by ethnicity in educational outcomes do exist for individuals of secondary school and college age.

Literacy rates are always higher for whites, for both the 10-65 and 15-24 age groups. Comparing estimates for the 10-65 and 15-24 age groups shows that differences between ethnic groups are narrower in the last case. In countries where we have information that has been collected for two years, we see that literacy rates for non-whites have been converging to those of whites. For instance, the literacy rates for whites and indigenous people aged 15-24 in Mexico were 97% and 80% in 1992, and 98% and 93% in 2002, respectively.

The gap in the primary school attendance rate for whites and non-whites is relatively important only in Panama and Guatemala, with 13 and 11 percentage points, respectively. Primary school enrollment rates have been increasing during the last decade in LAC countries for which we have information. At the same time, the gap between whites and non-whites has narrowed. Most LAC countries are performing well with respect to the accomplishment of the MDG 2 both for whites and non-whites. Only Haiti, Guatemala, Honduras, and Nicaragua show primary school enrollment rates below 90%.

In contrast, differences in secondary school attendance between whites and non-whites are considerably high in some cases. In nine out of thirteen countries, the enrollment rates for non-whites is more that 10 percentage points lower than for whites. Also, differences by ethnicity in the enrollment rates for tertiary education are strikingly high in some countries, including Panama, Mexico, and Honduras.

The schooling gap measures the number of years of missed education. The school gap of non-whites for the 13-19 age group varies across countries, from 2.1 in Bolivia to 5.2 in Nicaragua. The school gap is higher for non-whites than for whites in all countries for the 13-19 age group and in eleven out of thirteen for the 20-25 age group. This means, for example, that a young indigenous Guatemalan is missing, on average, 5.1 years of education, while his white counterpart has missed only 2.9 years of education.

Differences in ethnicity are explicitly considered to be unacceptable sources of differences in access to education in the United Nations

Millennium Declaration. In this chapter, we use econometric tools to assess how being indigenous or of afro-descent affects the probability of attending school. We estimate the conditional probabilities of attending school in order to capture differences between groups. The coefficients associated with ethnicity are interpreted as the difference in the enrollment rates when we compare two individuals who have the same (average) characteristics, with ethnicity as the only exception. The results indicate that, for primary education, ethnic discrimination exists only in Brazil, Guatemala and Panama; it is important to note that ethnic discrimination has decreased in Brazil (from 1995 to 2002), and disappeared in Mexico (from 1992 to 2002) and Costa Rica (from 1992 to 2001). The results also suggest statistically significant differences in secondary enrollment rates due to ethnicity in Paraguay and Honduras. We find ethnic discrimination in college for all countries, excluding Bolivia, Chile and Peru.

If family background explains children's opportunities, then social mobility is low. We compute educational mobility indices based on Andersen (2001) for teenagers (aged 13-19) and young adults (aged 20-25) by ethnicity for all LAC countries in the sample. The SMI is lower for non-whites than for whites, in only three out of thirteen countries. The fact that the SMI* is higher for non-whites than for whites may indicate that younger generations of non-whites might not be entrapped by their family background (at least compared to whites).

In this chapter, we also try to assess whether whites are more educated than non-whites because they have higher returns to education. We follow the methodology of Di Gresia (2004) to estimate the determinants of the decision to attend university, taking into account the expected return to education. We find that the returns to education have a positive effect on the probability of college attendance both for whites and non-whites. The coefficients associated with the returns to education suggest that whites have greater incentives to receive education than non-whites because when facing the decision of entering college, they perceive a higher return to education.

Chapter 4: Increasing Gender Equity (MDG 3)

The Millennium Development Goal 3 refers to the elimination of gender disparity at all levels of education by the year 2015. Latin America and the Caribbean is one of the regions in the world where the usual

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* For more information on the Social Mobility Index, please refer to page 119.

indicators of education show a relatively high gender equity; this holds when analyzing the sample by ethnicity. However, there are some exceptions worth noting. Whereas some countries do not exhibit this equality (e.g. Guatemala), in others, gender equality holds only in primary education, which is typically mandatory; in these countries, males tend to have higher secondary education enrollment rates.

As a measure for gender discrimination in educational scenarios, the MDGs propose the ratio of literate women to men aged 15–24 years old. This Literacy Gender Parity Index is considerably lower than 1 only for those indigenous and afro-descendant peoples living in Peru (0.77), Panama (0.78) and Guatemala (0.85). The corresponding figures for whites are 0.92, 1.00, and 0.94, respectively. The other countries do not show any major differences by ethnicity in the ratio of literate women and men aged 15-24. Thus, most LAC countries in our sample seem to be performing well with respect to the MDG Literacy Gender Parity Index.

The ratio of girls to boys attending school is used as an indicator to monitor progress towards Goal 3, which covers gender equality in school enrollment. For children between 6-12 years old, we find gender equality in enrollment rates for both whites and non-whites in all countries, with the exception of Honduras and Panama for non-whites only, and Guatemala both for whites and non-whites. The 13-15 age cohort shows the smallest differences in school enrollment rates, by gender. Only non-white girls living in Ecuador, Guatemala and Mexico lag behind boys in the same age groups. We have found an increase in enrollment rates for non-white women and men in every country during the past few years.

There is evidence of statistical gender discrimination in access to primary education only for non-whites living in Guatemala and Panama. Bolivia and Peru show gender discrimination at the secondary school level for non-whites. Only among non-whites in Guatemala do we find gender discrimination in access to tertiary education. In summary, our results suggest that in most Latin American countries there is no evidence of gender discrimination with respect to access to education for both whites and non-whites.

The share of women in wage employment in the non-agricultural sector is also part of the MDG 3. We show that the proportion of women living in rural areas who work in agriculture is higher for non-whites than for whites. Finally, we find evidence of the existence of gender wage discrimination both for whites (in all countries) and non-whites (in all countries, excluding Honduras and Paraguay).

Chapter 5: Achieving MDG 1 for Non-Whites

In this chapter we use a simple micro-simulation technique to estimate the effect at the national level of achieving the MDGs for the indigenous and afro-descendant populations in the Latin American and Caribbean countries in our sample. To this end, we simulate the implementation of a transfer program that allows indigenous and afro-descendant individuals to be relieved from poverty. The reduction in the poverty incidence at the national level varies widely between countries, ranging from 27 percentage points in the case of Haiti (from 51% to 24%) to 0.07 percentage points for Chile (from 3.53% to 3.46%). As expected, national poverty reduction is higher for those countries with a larger non-white population (i.e. Haiti, Bolivia, Guatemala, Paraguay, and Brazil).

It is useful to examine two basic ways in which the extent of poverty can be reduced: growth in the mean and/or reduction in inequality. Following ECLAC/IPEA/UNDP (2003), we present isopoverty curves that allow us to have an idea of the effort, in terms of income redistribution as well as economic growth, which would allow indigenous and afro-descendant individuals to halve their poverty incidence. The estimated isopoverty curves are relatively "flat", implying that the poverty reduction impact of even a small transfer program is equivalent to that of many percentage points in accumulated economic growth. For example, in the case of Ecuador, an annual growth rate of 6% between 1998 and 2015 is equal, in terms of poverty reduction, to an income transfer of 0.48% from income of the wealthy to poor non-whites. In the case of Bolivia, for instance, the MDG 1 poverty reduction target for the indigenous peoples would be achieved, with no economic growth, and with a redistribution of 3.6% from total income of the wealthy to indigenous people in poverty.

Summarizing, the isopoverty curves show that the impact of even a small income redistribution from wealthy individuals to non-whites is equivalent to that of a relatively large annual growth rate until 2015. However, the simulation of a counterfactual income distribution through the mechanisms described above is a simple arithmetic exercise: there is no guarantee that it would be consistent either with (i) household behavior, and (ii) a general equilibrium of the markets in the economy (Ferreira and Leite, 2003).

Chapter 6: Explaining Differences Between Whites and Non-Whites: Microeconometric Decompositions

A countless number of factors may explain the differences in poverty rates between whites and non-whites in the Latin American and Caribbean countries. In this chapter, we concentrate on six of these factors: i) returns to education; ii) the gender wage gap; iii) returns to experience; iv) the dispersion in the endowment of unobservable factors; v) hours of work; and vi) the education of the active population. This chapter is aimed at estimating the size and the relative magnitude of the effects of these factors for explaining differences in poverty incidence between whites and non-whites. To achieve this, we adapt the microeconometric decomposition methodology of Bourguignon *et al.* (2004) and Gasparini *et al.* (2004).

The basic idea of the decompositions is to simulate the income distribution of group *g* (non-whites) if some of its determinants were those of group *g'* (whites), and compare that counterfactual income distribution to the real one of group *g*. The difference between the two distributions can be attributed to differences between *g* and *g'* in the selected determinants. The observed and simulated income distributions can be compared in terms of a poverty index.

We find that the two most compelling poverty-increasing factors for non-whites are related to education: the returns-to-education effect, and the education effect. In eight out of twelve countries, the returns-to-education effect is poverty-decreasing. In countries such as Bolivia, Mexico, and Ecuador, if the returns to education of indigenous people were equal to those of white people, the poverty incidence for the first group would be more than 10 percentage points lower. In Brazil, Colombia, Peru, Guatemala, and Honduras, the difference in the returns to education has also a negative impact of about 5 percentage points in the indigenous and afro-descendant poverty incidence.

The differences in the education structure of the active population are important factors for the twelve countries in our sample. The indigenous and afro-descendant active populations tend to be less educated than their white counterparts. These differences have a negative effect on non-whites' poverty incidence for eleven countries. The largest effects are observed in Mexico and Panama, where the education effect accounts for 15 and 13 percentage points of the difference in poverty incidence between whites and non-whites. In Honduras, Paraguay and Ecuador, the education effect accounts for more than 5 percentage points of the difference in poverty incidence by ethnicity.

In the second part of the chapter, we implement the methodology proposed in Gasparini for the microeconometric decomposition of differences in the rates of school attendance by ethnicity for three education levels: primary; secondary; and tertiary. The method quantifies the fraction of the school attendance differential that can be attributed to a difference in characteristics between two groups ("characteristic effect"), and the proportion that is due to differences in the way those characteristics are linked to the schooling decision ("parameter effect"). The characteristic effect would be larger if the difference in school enrollment between white and non-white children were mainly driven by differences in some of the characteristics of these groups, such as household income, parental education, household size, and location. Instead, differences might be mainly driven by other factors (e.g. preferences) that imply different schooling decisions by ethnicity, even in the case of similar characteristics. In this case, the parameter effect would be larger in our decomposition.

We find that differences in individual characteristics among children of primary school attending age explain a large portion of the difference between rates of school attendance for whites and non-whites, in all countries. This conclusion applies to the three educational levels. The characteristic effects are always negative and, in most cases, they are larger than the parameter effects. This implies that differences in household per capita income, parental education, household size, and location are the most important factors behind the differences in enrollment rates between whites and non-whites. Differences in the way individuals make schooling decisions based on their characteristics (driven, for instance, by preferences) appear to be less important sources of differences in enrollment rates between ethnic groups.

Chapter 7: Policies to Meet the MDGs

The underlying causes of poverty among the indigenous and afro-descendant peoples are largely structural. In addition, inequity manifests itself in terms of discrimination and inequality of opportunities for the indigenous and afro-descendant population with respect to access to basic services. Language, cultural differences and physical isolation can be important determinants of their situation, yet social exclusion, due to racial, ethnic and religious prejudice, tends to worsen their situation. Moreover, these groups have traditionally been excluded from the political process, thereby limiting their abilities to advocate for resources. Only until recently has this begun to change, especially since the transitions to democracy that most Latin American countries experienced.

In this chapter, we review different policies to address the specific problems from which indigenous and afro-descendant populations suffer. The basic discussion regarding this issue is divided in two tendencies. Some people consider that both indigenous and afro-descendant individuals have to be treated as any other impoverished group of society and included in programs targeted at the poor population as a whole. Other individuals argue that indigenous and afro-descendant populations have cultural specificities that can only be addressed by special programs tailored to them.

To understand the profile of poor households and assess how government policies affect their welfare, it is necessary to have extensive, detailed and precise knowledge of the characteristics and behavior of the households in terms of income generation, consumption, location and access to social services. It has become clearer that it is necessary to improve the data-collecting tools in order to more accurately reflect the situation of the ethnic minorities in Latin America and the Caribbean. If countries wish to address the challenges faced by the indigenous and afro-descendant population, the need to develop a set of standardized questions for surveys is urgent.

In recent years, there has been a growing interest in the role of indigenous peoples and language heterogeneity, which was reflected in the creation of intercultural bilingual education programs. Various studies suggest that the implementation of this educational model can improve the performance of indigenous peoples through increasing enrollment rates, educational results and the level of school attendance among girls, also reducing gender gaps in education, furthering comprehension of Spanish and increasing the participation of parents at school.

The experience of affirmative action policies in Latin America is still new. The main challenge related to this type of policy is to identify the targeted population in a society that has more inter-racial marriages than the US. The questions that remain to be answered before initiating this type of program are 'who is afro-descendant?' and 'who is indigenous?' The use of a self-identification method can be a problem if the result of identifying oneself as afro-descendant gives benefits with certainty.

A large problem, related especially to some infrastructure projects undertaken in many countries, is involuntary resettlement. Involuntary resettlement can have a dramatic impact on the lives of people living in areas that are undergoing large-scale development projects. Resettlement

should be planned by trying to improve the living standards, physical security, productive capacity and income levels of the people affected or to restore these conditions to former levels within a reasonable time frame. Indigenous peoples represent a special case for resettlement because of their deep attachment to land and location. To date, there are only a handful of accounts of successful resettlements involving indigenous peoples. Nevertheless, indigenous social organization, cultural values and attachment to the land, reflect centuries of practice, adaptation and survival strategies, hence, as a general rule, resettlement should be avoided.

Neither micro-enterprise nor social investment funds were originally designed to address rural poverty. A few countries have established specific funds for indigenous peoples. Social funds targeted at indigenous populations are distinguished by their approach and methodology. Typically, they have to address the features that differentiate the indigenous population from other sectors amongst the poor. There are four particularly important factors: (i) geographic isolation; (ii) social exclusion, based on ethnic or racial prejudice; (iii) social and cultural differences, covering areas such as language, structures of authority and economic values; and (iv) need to strengthen the capacity of indigenous organizations.

In the past few years, demands for land expressed by non-governmental organizations (NGOs) representing indigenous peoples, have begun to increase. There is a widespread consciousness among the indigenous population that land is the main resource in order to avoid poverty. Policies geared toward improving land productivity and distribution might have important effects on poverty reduction. Accessible credit and proper titling, too, have become priorities.

Chapter 1: Ethnicity and the Millennium Development Goals in Latin America and the Caribbean[*]

In September 2000, the world's leaders adopted the UN Millennium Declaration, committing all nations to exert stronger efforts to improve human welfare across the globe. This ambitious Declaration, endorsed by the General Assembly and ratified by other International Organizations, defined a precise set of goals, numerical targets and quantifiable indicators to assess progress in several areas related to development. These objectives are now known as the "Millennium Development Goals" (MDGs), encompassing eight goals, eighteen targets and over fifty indicators (see Table 1.1). Taking the year 1990 as a baseline, the MDGs to be achieved by 2015 include: (1) Halving extreme poverty and hunger; (2) Achieving universal primary education; (3) Promoting gender equality; (4) Reducing under-five mortality by two-thirds; (5) Reducing maternal mortality by three-quarters; (6) Reversing the spread of HIV/AIDS, malaria and tuberculosis; (7) Ensuring environmental sustainability; and (8) Developing a global partnership for development.

The progress towards the completion of the MDGs is being followed by many International Organizations, which are gathering data and making them comparable across countries. Most of the data produced to assess progress are, however, national averages. It is crucial to take into account that, while national performance indicators help to convey what is happening to a given country's population, progress often differs widely across regions or groups within the same country. Countries with good average performance indicators might contain groups in the population that are being left behind- consequently, indicators used to assess national progress towards the MDGs may not adequately reflect the living conditions of many individuals. Some countries might, for instance, be involuntarily advancing via a top-down approach, investing

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* All the tables included in this chapter can be downloaded from
  www.depeco.econo.unlp.edu.ar/cedlas

Table 1.1
THE MILLENNIUM DEVELOPMENT GOALS

GOALS	TARGETS	INDICATORS
Goal 1: Eradicate extreme poverty and hunger	Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day	1a. Proportion of population below $1 a day 1b. National poverty headcount ratio 2. Poverty gap ratio at $1 a day (incidence x depth of poverty) 3. Share of poorest quintile in national consumption
	Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	4. Prevalence of underweight children (under five years of age) 5. Proportion of population below minimum level of dietary energy consumption
Goal 2: Achieve universal primary education	Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	6. Net enrollment ratio in primary education 7a. Proportion of pupils starting grade I who reach grade 5 7b. Primary completion rate 8. Literacy rate of the 15-24 age-group
Goal 3: Promote gender equality and empower women	Target 4: Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015	9. Ratio of girls to boys in primary, secondary, and tertiary education 10. Ratio of literate females to males among the 15-24 age-group 11. Share of women in wage employment in the nonagricultural sector 12. Proportion of seats held by women in national parliament
Goal 4: Reduce child mortality	Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	13. Under-five mortality rate 14. Infant mortality rate 15. Proportion of one-year-old children immunized against measles
Goal 5: Improve material health	Target 6: Reduce by three-quarters, between 1990 and 2005, the maternal mortality ratio	16. Maternal mortality ratio 17. Proportion of births attended by skilled health personnel

Table 1.1
THE MILLENNIUM DEVELOPMENT GOALS

GOALS	TARGETS	INDICATORS
Goal 6: Combat HIV/AIDS, malaria, and other diseases	Target 7: Have halted by and begun to reverse the spread of HIV/AIDS	18. HIV prevalence among 15-to 24-year-old pregnant women 19. Condom use rate of the contraceptive prevalence rate 19a. Condom use at last high-risk sex 19b. Percentage of population aged 15-24 with comprehensive correct knowledge of HIV/AIDS 19c. Contraceptive prevalence rate 20. Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14
	Target 8: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	21. Prevalence and death rates associated with malaria 22. Proportion of population in malaria-risk areas using effective malaria prevention 23. Prevalence and death rates associated with tuberculosis 24. Proportion of tuberculosis cases detected and cured under directly observed treatment short course (DOTS)
Goal 7: Ensure environmental sustainability	Target 9: Integrate the principles of sustainable development into country policies and program and reverse the loss of environmental resources	25. Proportion of land area covered by forest 26. Ratio of area protected to maintain biological diversity to surface area 27. Energy use per unit of GDP 28. Carbon dioxide emissions (per capita) and consumption of ozone-depleting chlorofluorocarbons 29. Proportion of population using solid fuels
	Target 10:Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	30. Proportion of population with sustainable access to an improved water source, urban and rural 31. Proportion of population with access to improved sanitation
	Target 11:Have achieved, by 2015, a significant improvement in the lives of at least 100 million slum dwellers	32. Proportion of households with access to secure tenure

Table 1.1
THE MILLENNIUM DEVELOPMENT GOALS

GOALS	TARGETS	INDICATORS
Goal 8: Develop a global partnership for development	Target 12: Develop further an open, rule-based, predictable, nondiscriminatory trading and financial system (includes a commitment to good governance, development, and poverty reduction—both nationally and internationally)	33. Net ODA total and to least developed countries, as a percentage of OECD/DAC donors' gross income
	Target 13: Address the special needs of the least developed countries (includes tariff- and quota-free access for exports enhanced program of debt relief for HIPC and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction)	34. Proportion of bilateral, sector-allocable ODA of OECD/DAC donors for basic social services (basic education, primary health care, nutrition, safe water, and sanitation) 35. Proportion of bilateral ODA of OECD/DAC donors that is untied 36. ODA received in landlocked countries as proportion of their GNI 37. ODA received in small island developing states as proportion of their GNI
	Target 14: Address the special needs of land-locked countries and small island developing states (through the Program of Action for the Sustainable Development of Small Island Developing State and 22nd General Assembly provisions)	38. Proportion of total developed country imports (excluding arms) from developing countries and least developed countries admitted free of duties 39. Average tariffs imposed by developed countries on agricultural products and clothing from developing countries 40. Agricultural support estimate for OECD countries as a percentage of their GDP 41. Proportion of ODA provided to help build trade capacity

Table 1.1
THE MILLENNIUM DEVELOPMENT GOALS

GOALS	TARGETS	INDICATORS
Goal 8: Develop a global partnership for development	Target 15:Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term	42. Total number of countries that have reached their HIPC decision points and completion points (cumulative) 43. Debt relief commited under HIPC initiative. 44. Debt service as a percentage of exports of goods and services
	Target 16:In cooperation with developing countries, develop and implement strategies for decent and productive work for youth	45. Unemployment rate of the 15-24 age-group 46. Telephone lines and cellular subscribers per 100 population
	Target 17:In cooperation with pharmaceutical companies, provide access to afforda-ble, essential drugs in developing countries	47. Proportion of population with access to affordable, essential drugs on a sustainable basis
	Target 18:In cooperation with the private sec-tor, make available the benefits of new technologies, especially infor-mation and communications	48a. Personal computers in use per 100 population 48b. Internet users per 100 population

Source: United Nations

resources in groups that are easier to reach, such as the middle class or the urban population. For this reason, sub-national trends deserve attention even among countries that appear to be performing well in the aggregate. In an attempt to fill this informational gap, the aim of this paper is to determine if, within Latin American and Caribbean (LAC) countries, there are differences between target groups as proposed by the Millennium Declaration.

The emphasis in this study is placed on ethnicity. In particular, we analyze the situation of indigenous and afro-descendant groups vis-à-vis euro-descendant and mestizo groups, using household surveys from fifteen LAC countries and using, when possible, comparable methodologies.

1.   MDGs in Latin America and the Caribbean[4]

Many human development indicators in LAC are converging to the levels of wealthy countries. Some goals proposed in the Millennium Declaration were chosen, taking into account the situation of countries that are less developed than the average country in the LAC region. For example, when comparing gender differences in education, in the case of LAC, women are equally and sometimes more educated than men. A similar situation occurs with populations living on less than one USD a day. Although this is not a good measure to define poverty in most LAC countries, it is still relevant, for instance, for Sub-Saharan African countries.[5] Here, we briefly introduce each goal and give a perspective of the relative situation of Latin America with respect to the rest of the world.

Goal 1. *Eradicate extreme poverty and hunger.* As seen in Graph 1.1, this target has already been met in East Asia and the Pacific (mainly due to the extraordinary performance of China), while in the rest of the developing countries, more effort is required. Extreme poverty (i.e. 1 USD PPP) declined everywhere during the last ten years, except in the poorest region of the world, Sub-Saharan Africa. A similar pattern is observed when measuring poverty according to 2 USD PPP. In this case, it is clear that the situation in LAC countries is disappointing.

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[4] This section was based on data from http://www.developmentgoals.org/ (that belongs to the World Bank) and http://www.worldbank.org/research/povmonitor/

[5] See Besley and Burguess (2003).

Graph 1.1
REGIONAL COMPARISONS GOAL 1
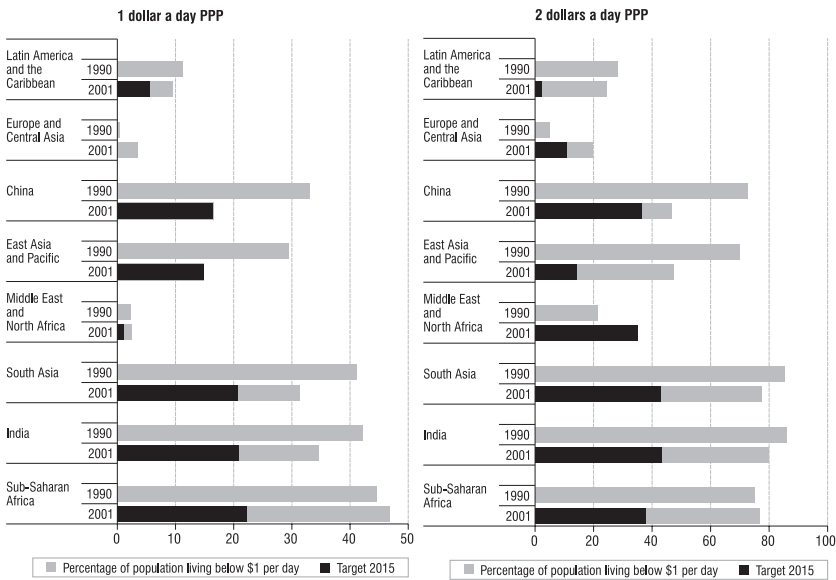
We can think of changes in income poverty as the result of changes in average income and changes in income inequality. During the 70s, the LAC region experienced a significant fall in poverty, mainly due to growing economies with stable income distributions. The 80s, however, experienced an opposite turn of events, where falling incomes and more unequal distributions combined to generate an important increase in poverty statistics. During the 90s, a different combination of events was observed: despite some un-equalizing changes in income distribution, the recovery of several LAC economies generated a reduction in the poverty indicators for the region as a whole as well as in most countries.[6] Overall, in the last three decades, the region has experienced a substantial fall in poverty. Still, the region requires an aggregate reduction of several points in poverty to accomplish the MDGs. Even if this is accomplished, it should be clear that this would not imply achieving the goals in every country; moreover, this would not imply the fulfillment of goals for every group within each country.

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[6] See Wodon (2000), Wodon (2001), Székely (2001), Sala-i-Martin (2002), CEDLAS (2004).

Goal 2. *Achieve universal primary education.* In the case of education, the situation is different (see Graph 1.2). Many regions including LAC are on track to reach the target by 2015. Moreover, LAC countries have experienced the greatest increase in the primary completion rate. Nevertheless, the evidence presented in this paper suggests large differences across and within countries, which should be considered in order to target educational policies towards reaching the poorest.

Goal 3. *Promote gender equality and empower women.* In most developing countries, gender gaps still exist in enrollment at all levels of education. In the case of LAC, as seen in Graph 1.2, girls have reached boys in the enrollment rate of primary and secondary education. However, even though regional averages show a great advancement among women as a whole, there are still persistent problems between certain groups of women; the greatest differences are between the rich and poor, urban and rural regions, and ethnic origins. In this study, we

Graph 1.2
REGIONAL COMPARISONS GOAL 2
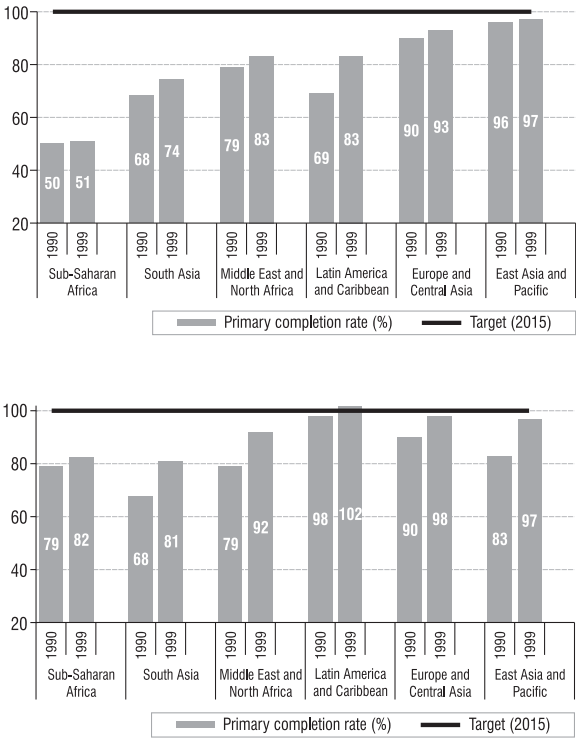
show that in almost every country, the levels of education of indigenous women are significantly lower than those of non-indigenous women.

Goal 4. *Reduce child mortality.* In 2001, the average under-five mortality rate was 121 deaths per 1,000 live births in low-income countries, 41 in lower-middle-income countries, and 27 in upper-middle-income countries. In high-income countries, the rate was less than 7.[7] Usually, the cause of child death is a disease or a combination of diseases and malnutrition that could be preventable.[8]

In LAC, children's health has been improving steadily over the past decades and it appears as though the region will achieve this MDG. As with the previous goals, the situation varies considerably from country to country as well as within countries. For instance, child mortality rates range from 80 per 1,000 live births in Haiti to 7 per 1,000 in Cuba. If we look at intra-country differences, in most of the countries, the situation is more severe in rural zones than in the urban areas, especially in Peru (28/60), Brazil (42/65) and Bolivia (53/100).[9]

Goal 5. *Improve maternal health.* Even though maternal mortality is higher in all developing regions than in developed countries, within developing countries we can identify two groups; whereas Eastern Europe, Central and Eastern Asia, Middle East, North Africa and LAC countries have maternal mortality rates lower than 200 per 100,000 live birth, South Asia and Sub-Saharan Africa have much higher maternal mortality rates (600 and 900 per 100,000 live birth, respectively). Still, some authors have pointed out that maternal mortality rates in LAC did not improve during the last decade[10] and that, again, country differences are important, ranging from 27 in Uruguay to 680 in Haiti per 100,000 live births.

Goal 6. *Fight HIV/AIDS, malaria and other diseases.* HIV prevalence rates are still increasing for men and women in the developing world. The rate is seven times higher in developing countries than developed countries for women, and almost three times higher for men. If we look at LAC, the situation has recently been deteriorating; even if the prevalence index of HIV is low (relative to other regions), there are signs that the disease is propagating more rapidly, especially in the Caribbean

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[7] See World Bank (2004).

[8] The most common causes being acute respiratory infections, diarrhea, measles, and malaria.

[9] OPS/WHO (2003).

[10] AbouZahr and Wardlaw (2001).

and Central America. Also, in this case, certain groups within the population are more susceptible to the disease than others (e.g. individuals with little or no education). The condition with respect to tuberculosis is also serious. According to the World Health Organization, the world's rate of death as a consequence of tuberculosis is 28 per 100,000 inhabitants. In LAC, the average rate is 41, four times the rate of developed countries.

Goal 7. *Ensure environmental sustainability.* In this paper, when analyzing Goal 7 we focus on living conditions of the population (access to water, sanitation and secure dwelling) and for the sake of simplicity, we associate these criteria with poverty instead of environmental sustainability.

An estimated 75 million people do not have access to clean water in their regions[11]; these individuals represent 7% of urban and 39% of rural populations. Approximately 116 million people (13% of urban and 52% of rural populations) do not have access to sanitary services. Deficient sewage and water services are proven to directly cause the deterioration of health conditions and the increase of gastrointestinal diseases, premature death and diminution of life expectancy. This means that deterioration of water conditions may have an impact on other goals, especially those related to health, thus highlighting the urgency to improve this situation.

Goal 8. *Develop a global partnership for development.* According to the World Bank, this calls for an open, rule-based trading and financial system, more generous aid to countries committed to poverty reduction, and relief of debt in developing countries. It also calls for cooperation with the private sector to address youth unemployment, ensure access to affordable, essential drugs, and make available the benefits of new technologies.

In this paper, we shall focus on the analysis of *Goals 1,2,3* and part of *Goal 7* for three reasons. First, some goals are more relevant than others for LAC as a region, in the sense that there are goals in which significant improvements remain to be seen (such as the case of *Goal 1* and part of *Goal 7*). Second, some goals are almost achieved in the aggregate- it is thus important to check if some groups are left behind (as in the cases of *Goals 2* and *3*). Finally, in the event that it would be desirable to analyze *Goals 4, 5, and 6,* it is impossible to do so with household survey data that does not include information on health.

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[11] IDB (2003).

2.   Ethnicity and the MDGs

In addition to achieving the MDGs, countries should aim to achieve them in a context of equal opportunities for every citizen, regardless of ethnicity, gender, age-group or location. More specifically, we will analyze the MDGs through the lens of ethnicity and, in some cases, gender. In many cases, however, we will be implicitly analyzing differences associated with location, since in several countries, indigenous and afro-descendant groups live in some specific areas, or with age-groups, since many of the MDGs are targeted at individuals belonging to specific age-groups.

At this point one might wonder why ethnicity will be analyzed versus other characteristics: Latin America and the Caribbean is a racially and ethnically diverse region and, at the same time, it has a highly unequal distribution of income, suggesting that the level of well-being might not be equitably distributed between races. Furthermore, the fact that indigenous peoples are poorer, less educated and experience worse living conditions than the non-indigenous population in Latin America is a well-known fact. Psacharopoulos and Patrinos (1994) analyzed in great detail the situation of indigenous peoples in the four Latin American countries having the largest indigenous populations: Bolivia, Guatemala, Mexico and Peru. They found a higher incidence of poverty, worse living conditions and lower levels of educational attainment among indigenous peoples. Is that still the case? What is happening with indigenous peoples in other LAC countries? And what is the situation of afro-descendant people?

Our sample includes fifteen LAC countries: Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, and Suriname.[12] It is estimated that the actual population of LAC is approximately 510 million people, of which approximately 172 million are non-white (i.e. indigenous or afro-descendant individuals). This sample seeks to represent as high a percentage as possible of indigenous and afro-descendant population in LAC, based on the methodology used in this study, which is further detailed below, and on data limitations.

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[12]   From Latin America, only Argentina, Uruguay, El Salvador and Venezuela were excluded from our sample. In the first two countries, less than 1% of the population is indigenous or of afro-descent, making it impossible to analyze ethnicity using household surveys (i.e. specially designed surveys would be required to analyze ethnicity in these countries). In El Salvador, the number of indigenous people is higher (almost 7%) but the survey did not allow us to identify ethnic groups. In Venezuela approximately 10% of the population is afro-descendant and 0.9% is indigenous, however it was not possible to identify them using the survey.

We have two main objectives. First, we explore the situation of indigenous and afro-descendant people in terms of poverty, educational achievement and gender equality. In particular, we investigate the "distance" of these groups to the national average in some of the MDGs, and their performance during the last decade toward those goals. Comparisons with other groups (e.g. euro-descendants and *mestizos*[13]) of both the present situation and past performance, in relation to the MDGs, will be highlighted.

Second, we will perform a set of micro-simulations to increase the understanding of the factors behind the income and educational disadvantages of indigenous and afro-descendant peoples, and to portray different scenarios (in terms of growth and redistribution) in which poverty in these groups can be significantly reduced.

3.   How Many Indigenous and Afro-descendant People Live in LAC Countries?

In this section, we make an attempt to define ethnicity and to determine an operational definition that allows us to identify ethnic groups in LAC household surveys. We also try to determine, using several different sources, the number of indigenous and afro-descendant people who live in Latin America and the Caribbean today.

The concept of "ethnic group" refers to people who share a common language, territory, cultural background and/or physical characteristics and are somehow embedded in the rest of the society.[14] This means that within what we usually call indigenous and afro-descendant people, one can potentially identify many ethnic groups.[15] Indeed, the ethnic spectrum in the region is very diverse. It comprises communities of people who speak very different languages, and share different cultures and traditions. There are approximately 400 different indigenous languages spoken throughout Latin America and the Caribbean.[16] Afro-descendant people also have heterogeneous backgrounds. Among them were individuals whose ancestors were brought (or came) to Latin America and the Caribbean at different times, from different countries

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[13] The word mestizos refers to people who have both European and indigenous heritage.

[14] Urban and Sherzer (1992).

[15] See Gonzales (1994) for an interesting discussion about the cultural heterogeneity among indigenous people in Latin America.

[16] See SIL (1988) and Homberger (1992) for details.

and with a diverse cultural background. Some of these groups have remained isolated while others have integrated the rest of the society, leading to further ethnic diversity.

As we shall see later, despite this cultural diversity, indigenous peoples and afro-descendants share a common characteristic: they are usually among the poorest and least educated people in all LAC countries. Because the goal of this paper is precisely to analyze those kinds of characteristics (included among the MDGs), we will ignore any cultural heterogeneity and focus on the situation of two aggregated groups: indigenous and afro-descendant people vis-à-vis euro-descendant people. [17]

Unfortunately, the definition of ethnicity is too broad to allow for a precise definition of who is and who is not indigenous or of afro-descent. Therefore, the number of people belonging to these groups in each country is not clearly determined (from a conceptual point of view). Moreover, estimates vary (in many cases widely) depending on the operational definition of ethnicity and on the date source , that is, whether it is a census or a survey.

According to some estimates, there are more than 50 million indigenous people and more than 120 million afro-descendants in LAC (see Table 1.2). This represents almost 33% of the total population of the region. The heterogeneity in ethnic structure between countries, however, is great. In Bolivia, Guatemala, Peru and Ecuador, more that 25% of the total population is indigenous, whereas in Panama, Brazil, Nicaragua and almost every Caribbean country, more than 25% of the population is afro-descendant. On the other hand, in some other countries, such as Argentina and Uruguay, only a small percentage of the population is indigenous or afro-descendant.

Despite the size of indigenous and afro-descendant populations, many censuses and household surveys in LAC have not identified ethnicity. Only recently, some surveys have started to include such types of questions. Futhermore, in the majority of cases, the questions used to identify ethnicity vary between countries (and in many cases within countries, over time), thus impeding comparisons.

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[17] Further research should tackle the task of analyzing the situation of each ethnic group within indigenous and within afro-descendant peoples. Household surveys, however, will not be very useful for such purpose because they are not designed to be representative of small specific groups. As a matter of fact, to the extent of our knowledge, such data does not currently exist in LAC countries.

Table 1.2
POPULATION STRUCTURE

COUNTRY / SOURCE	PERCENTAGE OF INDIGENOUS PEOPLES IN TOTAL POPULATION			PERCENTAGE OF AFRO-DESCENDANT PEOPLE IN TOTAL POPULATION				POPULATION	APPROXIMATE NON-WHITE POPULATION	IN SAMPLE
	World Bank	ECLAC	IDB	World Bank	ECLAC Afro-descendants	ECLAC Mestizos	Total	CIAT	Author's Calculations	Author's Calculations
LATIN AMERICA										
Argentina	1,0		1,1					37.917.864	379.179	
Bolivia	71,0	59	50,51	2,0				8.016.694	5.852.187	5.852.187
Brazil	0,4	1	0,16	44,7		40,1	45	169.368.031	76.384.982	76.384.982
Chile	8,0	10,3	7,06	4,9				14.875.102	1.190.008	1.190.008
Colombia	1,8	2,2	1,74	25,0	5	71	76	37.772.827	10.123.118	10.123.118
Costa Rica	0,8		0,75		2,0			3.620.703	101.380	101.380
Ecuador	38,0	35,3	24,85		10,0			12.116.444	5.815.893	5.815.893
El Salvador	7,0		1,69					5.867.402	410.718	
Guatemala	66,0	42,8	48,01					12.359.079	8.156.992	8.156.992
Honduras	15,0	1,3	11,88		5,0			6.869.483	1.373.897	1.373.897
Mexico	14,0	7,4	9,47		0,5			98.991.045	14.353.702	14.353.702
Nicaragua	5,0	1,8	7,59		13,0			4.623.632	832.254	832.254
Panama	10,0	8,3	7,78		73,5			2.956.920	2.469.028	2.469.028
Paraguay	1,5	0,7	1,96		3,5			5.532.985	276.649	276.649
Peru	47,0	40,2	38,39		9,7			27.041.112	15.332.311	15.332.311
Uruguay	0,4				5,9			3.103.122	195.497	
Venezuela	0,9	0,9	1,48	10,0	10	65	75	22.835.540	2.489.074	

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	World Bank	ECLAC	IDB	World Bank	Afro-descendants	ECLAC Mestizos	ECLAC Total	CIAT	Author's Calculations	Author's Calculations
CARIBBEAN										
Antigua y Barbuda					97,9	81,4	8,6	90	66.460	65.064
Bahamas					85,0				n.a.	n.a.
Barbados					95,8	91,9	2,6	94,5	271.622	260.214
Belize	19,0		13,65		57,0	6,6	43,7	50,3	241.004	183.163
Bermuda					61,3				n.a.	n.a.
Cuba					62,0	12	21,8	33,8	11.373.758	7.051.730
Dominican Republic					84,0	11	73	84	8.035.515	6.749.833
French Guiana	4,0		3,94		42,6				177.330	82.636
Grenada					84,0	82,2	13,3	95,5	93.557	78.588
Guadeloupe					87,0				n.a.	n.a.
Guyana	6,0		5,64		42,6	30,5	11	41,5	828.730	402.763
Haiti				100,0	95		95	7.787.756	7.787.756	7.787.756
Jamaica	2,0				91,4	90,9	5,8	96,7	2.464.440	2.301.787
St. Lucia					90,3	86,8	9,3	96,1	154.755	139.744
St. Vincent and Grenadlines					95,0	82	13,9	95,9	n.a.	n.a.
Suriname	6,0		3,34	41,0	15			466.227	219.127	219.127
Trinidad and Tobago				43,0	40,8	16,3	57,1	1.265.580	544.199	544.199
NORTH AMERICA										
Canada	1,0				2,2					
United States	0,9				12,3					
TOTAL								507.094.719	171.603.470	150.813.481

Sources: Hopenhayn, M. and A. Bello (2001) "Discriminación étnico-racial y xenofobia en América Latina y el Caribe", ECLAC Serie Políticas Sociales 47
IDB (1997) "The Role of the Inter-American Development Bank", Forum of the Americas, mimeo
World Bank (2004) "Inequality in Latin America. Breaking with history?", Chapter 3
CIAT (2003) "Latin America and Caribbean Population Database Documentation".

We follow three general methods to identify ethnicity in household surveys. Depending on the country, we consider that a person is indigenous or afro-descendant if he or she: (i) identifies himself or herself as belonging to a certain ethnic group, (ii) identifies his or her native language or speaks an indigenous language, or (iii) lives in a territory that is mostly populated by persons from a given ethnic group. Each method has some advantages and some drawbacks.

Many household surveys ask the individual if he or she considers himself or herself as belonging to a certain ethnic group. This self-identification question can be used directly to identify ethnicity. In fact, an ethnic group is defined by some authors as "a self-reproducing social collectivity identified by myths of a common provenance and by identifying markers".[18] The advantage of relying on self-identification is that it avoids language proficiency issues and it allows individuals to choose whether or not they consider themselves as indigenous/afro-descendant. The drawback of this method is that the classification of belonging to a certain ethnic group depends on how the question is asked in the survey, in what situation and by whom.[19] This is particularly important where discrimination and social prejudice can induce the individual to deny affiliation to a certain ethnic group. We will use self-perception as a method of identification in Bolivia, Brazil, Guatemala, Nicaragua, Panama, Peru, and Suriname.

Alternatively, even if the household survey lacks information on self-identification, it may ask the individual whether he or she speaks an indigenous language. The underlying assumption (and main advantage) when using language as an identification variable is that language differences will exist until the ethnic group is completely integrated into the rest of society. It can be claimed, however, that this might not be the case in those situations where primary education is predominantly given in the "official" language (i.e. Spanish, Portuguese, English or French, depending on the country). More importantly, if that "language policy"

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[18] Smith (1990).

[19] Gonzales (1994) claims that it is believed that the self-identification method may lead to underestimation especially when asked in the form "Are you indigenous?". On the other hand, there might exist some overestimation if some individuals believe that they may receive some social benefits by declaring themselves as indigenous. Consequently, the sign of the bias is ultimately unknown. Fortunately, as we will see later, except for the case of Panama, the self-identification questions asked in LAC national household surveys are better presented (than that of Gonzales' example) and usually household surveys are not used to assign benefits, so it can be argued that neither of those problems are very serious.

persists for a long period of time, it is likely that the native language would tend to disappear. For many years, this was the case in almost every LAC country, and this is why it was decided to use language only as a second resource to identify ethnicity; to partially overcome this drawback, we will consider to be indigenous the individuals who speak an indigenous language (even if they also speak the "official" language). There are typically three types of questions regarding language: one asks about the individual native tongue, the other about the ability of speaking an indigenous language and a final question asks the household head whether at least one individual in the household can speak an indigenous language. We will use language as an identification criterion in the cases of Chile, Ecuador, Haiti, and Paraguay[20].

Finally, a more imperfect way of identifying ethnicity is by the region in which the individual lives. This method essentially relies on the fact that some ethnic groups are geographically concentrated. The main advantage of this method is that it avoids any subjectivity. The disadvantage is, of course, that some individuals might be wrongly classified if segregation is not complete. For each country where this criterion was used, we defined indigenous regions using census data. Indeed, the smaller the definition of region, the more efficient the criterion. Thus, whenever possible we used counties (municipalities) as the reference region.[21] Also, if information of counties was not available in the household survey, we used states/provinces/departments. The first method was used in the cases of Colombia, Mexico and Honduras, whereas the second method was used only in Costa Rica.

In summary, we will be able to analyze the situation of indigenous and afro-descendant groups in terms of the MDGs in 15 countries covering almost 85% of the total population, and most of the indigenous and afro-descendant populations in LAC countries.

4.   Definitions of Ethnicity by Country

This section gives a detailed description of our operational definitions of ethnicity in each country: it discusses some assumptions we made, in addition to decisions we made, regarding those definitions, and assesses the precision of those definitions.

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[20] In the case of Paraguay, a majority of people speak Guaraní, the official language of the country, regardless of whether or not they are indigenous. This essentially explains the great overestimation of the percentage of indigenous peoples in the total population.

[21] This criterion was used by Panagides (1994) to identify indigenous people in Mexico.

As we mentioned earlier, we consider a person to be indigenous or afro-descendant if: (i) he or she perceives herself as indigenous, (ii) he or she speaks an indigenous language, or (iii) he or she lives in a region highly populated by indigenous/afro-descendant individuals. Table 1.3 summarizes information on data source, coverage of household survey, sample size, and the percentage of non-white populations in each country. Four points are worth mentioning. First, all household surveys used in this paper cover both rural and urban areas: this is an extremely important fact given that many indigenous/afro-descendant individuals live in rural areas. Second, it should be noted that the sample size varies widely between countries; Guatemala, Nicaragua and Suriname in particular have small samples.[22] Finally, the percentage of indigenous/afro-descendant people obtained in our samples approximately matches those obtained from census by other sources in Bolivia, Brazil, Guatemala, Haiti, Honduras, Mexico, Panama, and Peru. However, we do underestimate the number of indigenous/afro-descendant people in Colombia, Ecuador, and Nicaragua, and we overestimate the number in Costa Rica and Paraguay. Finally, it should be noted that the percentage of the non-white population captured by household surveys tends to be relatively constant over time, except in the case of Bolivia.[23]

In Table 1.4, we summarize how we identified ethnicity in household surveys. It is worth discussing in greater detail some decisions we made in that process.

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[22] In Guatemala this is not a problem since the number of indigenous people is large- therefore, when splitting the sample between indigenous and non-indigenous, each group has a relatively large number of observations. Unfortunately, Nicaragua and Suriname have a small sample size and a small percentage of indigenous/afro-descendant people in the sample. Consequently, some descriptive statistics will not be as reliable and some exercises will not be feasible.

[23] This difference might be explained by a change in the definition of the sample. It is not explained by the fact that we changed the method of identifying ethnicity. Note that we used language in 1997 and self-identification in 2002. Actually, using language in 2002 gives a percentage of indigenous peoples in the total population of 35% (below 45% found in 1997).

Table 1.3

HOUSEHOLD SURVEYS IN LAC: COVERAGE AND MAIN CHARACTERISTICS

COUNTRY	YEAR	NAME OF SURVEY	SOURCE	COVERAGE	SAMPLE SIZE (INDIVIDUALS)	NON-WHITE (AS % TOTAL POPULATION)
		(i)	(ii)	(iii)	(iv)	(v)
Bolivia	1997	Encuesta Nacional de Empleo (ENE III)	INE	National	36.752	45,5
	2002	Encuesta de Condiciones de Vida (MECOVI)	INE	National	24.933	54,4
Brazil	1995	Pesquisa Nacional Por Amostra de Domicilios	IBGE	National	333.898	45,1
	2002	Pesquisa Nacional Por Amostra de Domicilios	IBGE	National	384.593	46,2
Chile	2000	Caracterización Socioeconómica Nacional (CASEN)	MIDEPLAN	National	252.748	1,5
Colombia	1999	Encuesta Nacional de Hogares	DANE	National	152.298	11,3
Costa Rica	1992	Encuesta de Hogares de Propósitos Múltiples (EHPM)	INEC	National	37.251	8,3
	2001	Encuesta de Hogares de Propósitos Múltiples (EHPM)	INEC	National	41.841	9,6
Ecuador	1998	Encuesta de Condiciones de Vida	INEC	National	26.129	3,9
Guatemala	2002	Encuesta Nacional de Empleo (ENEI)	MECOVI	National	10.615	42,7
Haiti	2001	Encuesta de Condiciones de Vida en Haiti	IHSI	National	33.007	99,0
Honduras	2003	Encuesta Permanente de Hogares de Propósitos Multiples	INE	National	40.984	9,2
Mexico	1992	Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH)	INEGI	National	50.862	4,9
	2002	Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH)	INEGI	National	72.602	5,6
Nicaragua	1998	Encuesta Nacional de Hogares sobre Medición de Nivel de Vida (EMNV)	INEC	National	22.423	2,2
	2001	Encuesta Nacional de Hogares sobre Medición de Nivel de Vida (EMNV)	INEC	National	22.810	3,8
Panama	2002	Encuesta de Hogares	INEC	National	54.500	6,9
Paraguay	1995	Encuesta de Hogares-Mano de Obra	DGEEC	National	21.910	48,1
	2001	Encuesta Integrada de Hogares	DGEEC	National	37.437	51,5
Peru	2001	Encuesta Nacional de Hogares (ENAHO)	INEI	National	75.470	39,0
Suriname	1999	Household Budget Survey Suriname	UNDP	Urban	1.694	6,3

Table 1.4
DEFINITIONS OF ETHNICITY
BY COUNTRY

COUNTRY	YEARS	NON-WHITE DEFINITION	IDENTIFICATION CRITERION	QUESTION USED TO IDENTIFY ETHNICITY IN HOUSEHOLD SURVEY	POSSIBLE ANSWERS	WHO IS CONSIDERED NON-WHITE (i.e. Indigenous or Afro-descendant)?
Bolivia	1997	Indigenous	Language	What language do you regularly speak?	Spanish, Quechua, Aymará, Guaraní, other indigenous language, or foreign language. Combinations between the previous categories were also allowed.	Individuals who speak at least one indigenous language (Quechua, Aymara, Guarani or other).
	2002		Self-Identification	Do you consider yourself as belonging to any of the following indigenous groups?	Quechua, Aymara, Guarani, Chiquitano, Mojeno, other, or none.	Individuals who considered themselves to belong to some indigenous group.
Brazil	1995 and 2002	Afro-descendant	Self-Identification	What is your color or race?	White, Afro-descendant, Pardo (i.e. a mix between white and black), Yellow or Indigenous.	Individual who answered they were Afro-descendant or Pardo.
Chile	2000	Indigenous	Language	Is there a family member who speaks or understand any of the following languages?	Aymará, Rapa-nui, Quechua, Mapuche, Atacameño, Coya, Kawaskar, Yagán.	Individuals who live a household where at least one member speaks or understands any indigenous language.
Colombia	1999	Afro-descendant	Region (Counties)	Counties and State (entered by interviewer)	n.a.	Individuals who live in counties defined as "Predominantely Black" by the statistical agency of Colombia (Dane).
Costa Rica	1992 and 2001	Afro-descendant	Region (States)	State (entered by interviewer)	n.a.	Individuals who live in Huetar Atlantica State.
Ecuador	1998	Indigenous	Language	What languages do you speak?	Spanish, Quichua, Shuar, others, and every possible combination between them.	Individuals who speak at least one indigenous language.
Guatemala	2002	Indigenous	Self-identification	"specification of Ethnic Group"	Kiché, Qeqchi, Kaqchikel, Mam, Garifuna, Ladino, Extranjero, Achi, Acateco, Awacateco, Qanjobal, Ixil, Chortí, Chuj, Jacalteco, Pocomchi, Pocomam, Tzutujil, Xinca, Popti, Other Indigenous Group, Other.	Individuals who consider themselves as belonging to any indigenous group.

Table 1.4
DEFINITIONS OF ETHNICITY
BY COUNTRY

COUNTRY	YEARS	NON-WHITE DEFINITION	IDENTIFICATION CRITERION	QUESTION USED TO IDENTIFY ETHNICITY IN HOUSEHOLD SURVEY	POSSIBLE ANSWERS	WHO IS CONSIDERED NON-WHITE (i.e. Indigenous or Afro-descendant)?
Haiti	2001	Afro-descendant	Language	What language do you usually speak at home?	Creole, French, Spanish, English or Other.	Individuals who answered "Creole".
Honduras	2003	Indigenous	Region (Counties)	Counties and State (entered by interviewer)	n.a.	Individuals who live in counties with more than 50% of indigenous population who are in the states of Gracias a Dios, Intibuca, Islas de la Bahia, La Paz, Lempira, and Ocotepeque.
Mexico	1992 and 2002	Indigenous	Region (Counties)	Counties and State (entered by interviewer)	n.a.	Individuals who live in counties with more than 50% of indigenous population who are in the states of Campeche, Chiapas, Chihuahua, Durango, Guerrero, Hidalgo, Nayarit, Oaxaca, Puebla, Quintana Roo, San Luis Potosi, Veracruz and Yucatan.
Nicaragua	1998	Indigenous and Afro-descendant	Language	What is the language that you speak at home since your childhood?	Spanish, Miskito, Sumu, English or Other.	Individuals who speak Miskito or Sumu.
	2001		Self-Perception	Which ethnic group do you belong to?	Mestizo (from the Pacific ocean or from the coast), White, Criollo, Creole/Afro-descendant, Miskito, Mayagna (Sumu), Rama, other.	Individuals who declared to be Creole/Afro-descendant, Miskito, Mayagna (Sumu), Rama.
Panama	2002	Indigenous	Self-Identification	Are you Indigenous?	Yes-No	Individuals who answered "yes"
Paraguay	1995 and 2001	Indigenous	Language	What language do you usually speak at home?	Guarani, Guarani and Spanish, Spanish, Other.	Individuals who speak only Guarani.
Peru	2001	Indigenous and Afro-descendant	Self-Identification	Because of your heritage or because of your culture do you consider yourself to be part of some ethnic group?	Indigenous from the Amazonia, Quechua, Aymara, Black/Mulato/Zambo, Mestizo, White, other.	Individuals who answered being Indigenous from the Amazonia, Quechua, Aymara or Black/Mulato/Zambo.
Suriname	1999	Afro-descendant	Self-Identification	Ethnicity of respondent?	Creole, Hindustani, Javanese, Chinese, Bushnegro, Indigenous (Amerindian), Mixed, Other.	Individuals who answered "Bushnegro".

Source: Authors' definitions.

Decision 1 (Treatment of missing values). It is important to address the issue of how this study treats missing values in the samples. The interviewee always answers the question regarding "region", so there are no missing values in that case. However, there is a prior expectation that some people do not answer questions on self-identification or on language. In those cases, we follow this procedure: (i) if he or she is not a child, we consider him or her as not indigenous/afro-descendant and (ii) if the individual is a child we assign him or her the answer of his or her mother (that is, if the mother is present in that household) or of the household head otherwise. This procedure was followed so as to minimize the loss of observations and was important in countries with small samples and with small indigenous/afro-descendant populations. Note, however, that the number of missing values was relatively small and thus our results are strong. There is only one exception: those cases where children who were 5 years old or less were not asked the questions (Bolivia and Peru). We claim that this exception is unique to those cases because, ultimately, the child was assigned his or her mother's (or household head's) answer.

Decision 2 (Definition of "non-white" group). In general, every LAC country has in its population euro-descendant, afro-descendant, indigenous peoples and people from other races (other races in LAC countries are typically a small fraction of the total population). Ideally, we would like to identify each of these groups in every country since that would allow for more accurate statistics. Unfortunately, LAC household surveys usually do not allow this kind of disagregation.

Since we are interested in determining how indigenous and afro-descendant individuals have faired (in terms of the MDGs) with respect to the euro-descendant population, we proceed in the following manner. We split our sample into two: a white group and a non-white group. The definition of white and non-white will differ between countries (Table 1.4). There are three cases:

In those countries where we could identify both groups, we include in the non-white group both indigenous and afro-descendant individuals. In Nicaragua and Peru, the number of afro-descendant people in the sample was too small to make any separate inference on their situation. In these two countries, we decided to analyze indegenous and afro-descendant people as if they were one group. To obtain an idea of what data refers to in these countries, it is important to highlight that in Nicaragua, 5% of the population is indigenous and 13% is afro-descendant, while in Peru, 47% is indigenous and almost 10% is afro-descendant.

In general, in countries where the indigenous population is small in comparison to the afro-descendant population, household surveys tend to capture only a small number of indigenous people (if any) and therefore we have to define the non-white group to be composed only of afro-descendant people (e.g. Haiti, Colombia, Costa Rica). The case of Brazil deserves special attention. Although we were able to identify both indigenous and afro-descendant people, we decided to focus only on the afro-descendant population because studies of race and ethnicity in Brazil tend to work with this group, who represents a high proportion of the total population.

Finally, in those countries where the indigenous population is larger, household surveys tend to be designed in a way that allows for the identification of indigenous people but not afro-descendant individuals (i.e. household surveys use either self-identification or language that usually does not include an option for afro-descendant in its answers). We therefore define the non-white group in such a way that it only includes indigenous people (e.g. Bolivia).

Decision 3 (Analyzed years). We choose to analyze information from the latest available year to have a perspective as updated as possible, and from one year during the 90s (in order to make comparisons). However, in several cases, it was not possible to have information for the 90s because, as we have mentioned earlier, only until recently have many countries included questions on ethnicity.

Decision 4. (Self-Identification was chosen over Language –whenever possible-). In Peru 2001, Nicaragua 2001 and Bolivia 2002, we have information on self-perception and language to identify ethnicity. In the case of Nicaragua and Peru, the decision to use self-perception (even when we used language to identify ethnicity in Bolivia 1997 and Nicaragua 1998) was based on the fact that it allowed us to capture the situation of the afro-descendant and indigenous population –even if we were not able to analyze separately the situation of both groups- whereas having used language would have forced us to only analyze the situation of indigenous people. Having said that, it is important to note that the correlation between language and self-perception was highly positive and statistically significant in both cases[24], and that all of our results are robust with this decision (i.e. results do not change when we use language instead of self-perception).

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[24] The partial correlation coefficient was 0.65 in Peru and 0.86 in Nicaragua.

In order to make results comparable, in Bolivia, we also used self-perception as an ethnic identifier. Again, we found a significantly positive correlation of 0.46 between language and self-perception, unfortunately some results from this paper were not robust with this decision (from a quantitative point of view). This was explained by the fact that many individuals who considered themselves to be indigenous did not speak any indigenous languages. Wood and Patrinos (1994) used language as an ethnic identifier in Bolivia (self-perception was not available in the survey they used). We decided to use self-perception, because, as we mention above, language can be more influenced by the educational system.

Decision 5 ("Exceptions" to definitions of ethnicity). In every country where we used self-perception to identify ethnicity, we decided to classify people who declare themselves to be "mestizos" as white (basically because they have some white heritage). The only exception was in Brazil, where we classified "pardos" (i.e. individuals who descend from white and afro-descendant people) as afro-descendant. This choice was done to make our results comparable with the rest of the literature on ethnicity and race in Brazil.[25]

In addition, when we used language to identify ethnicity, we treat as indigenous all those individuals who declare to speak *at least* one indigenous language. The only exception was Paraguay, where Guaraní is the official language; many people speak this language, regardless of whether or not they are indigenous. This essentially explains the great overestimation of the percentage of indigenous people in the total population (with respect to alternative sources). To partially fix this problem, we decided to classify as indigenous those individuals who *only* speak Guaraní.

Decision 6. (Indigenous/Afro-descendant Regions). As we mention earlier, in Colombia, Honduras and Mexico, we were able to use counties to identify regions, making our results more precise. In Costa Rica, this was not possible because of data unavailability.

For Colombia, we defined non-whites to be people of afro-descent. In fact, the percentage of indigenous persons in the total population is approximately 2% while the percentage of afro-descendant individuals is 25%. Afro-descendant populations are mostly concentrated around the coastal areas of the Pacific Ocean (which include the departments of

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[25] See for instance, World Bank 2003.

Cauca, Chocó, Nariño y Valle[26]) and around the coastal areas of the Atlantic regions (which include the departments of Atlántico, Bolívar, Cesar, Córdoba, La Guajira, Magdalena y Sucre). In these last regions, however, white and non-white populations tend to be more mixed. In light of this, we decided to use counties to make our identification more precise.[27]

For Honduras, we defined non-whites as indigenous people since the percentage of indigenous people represents 15% of the total population while the percentage of afro-descendant individuals is 5%. According to the 2001 census data currently available, the indigenous populations are clustered mainly in the states of Gracias a Dios, Intibuca, Islas de la Bahía, La Paz, Lempira, Ocotepeque. Within those states, we identified "indigenous counties" as those with more than 21% of indigenous population (three times the average of the indigenous population in the country). In practice, this means that we end up considering indigenous all those individuals who live in counties with more than 50% of indigenous populations.

For Mexico, we also defined non-white as the indigenous population (14% of Mexican population is indigenous and 0.4% is afro-descendant). The majority of the indigenous population is located in the south of the country. In particular, we considered to be indigenous all those individuals who live in counties that have, according to data from census, more than 50% of indigenous people in their total population. Indigenous counties are located in the states of Campeche, Chiapas, Chihuahua, Durango, Guerrero, Hidalgo, Nayarit, Oaxaca, Puebla, Quintana Roo, San Luis Potosí, Veracruz, and Yucatán.

For Costa Rica we made two decisions. First, we decided to analyze the afro-descendant population instead of the indigenous population because the first group is larger and is geographically more concentrated. Second, following World Bank (2002) we consider the region Huetar Atlántica (located on the Caribbean Sea coast) to be "predominantly afro-descendant" and the rest of the country to be "predominantly white".

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[26] Although it should be noted that Cauca and Nariño have sizeable indigenous populations.

[27] We used information produced by Departamento Nacional de Planeación de Colombia that identifies afro-descendant counties as having a high percentage of afro-descendant persons in their population. For further details refer to the web page:
http://www.dnp.gov.co/ArchivosWeb/Direccion_Desarrollo_Territorial/divers_etnica/afros_raizales/estad_indicad/sociales_afro.xls.

5.   Socio-Demographic Characterization of Non-White People in LAC

Before starting the analysis of each MDG, this section presents a description of some important socio-economic characteristics of indigenous and afro-descendant peoples. The goal is to understand three characteristics of these groups: location, types of families and labor market variables (including, unemployment rates, type of jobs and economic sectors in which indigenous and afro-descendant individuals tend to participate more).

In particular, we found that average non-white families in LAC countries live in rural areas and are slightly larger (usually with more children) than white families. Also, we show evidence that a typical indigenous or afro-descendant male has the same participation rate in the labor market and experiences lower rates of unemployment than his white counterpart. He also has a higher probability of working in the primary sector of the economy, is usually self-employed and works in a small firm. The average indigenous or afro-descendant female, on the other hand, tends to have lower participation and employment rates than her white counterpart.

Location. In every LAC country, over 45% of the indigenous or afro-descendant population in each country lives in rural areas (Brazil being the only exception). In countries such as Honduras, Ecuador and Panama this number is much higher, reaching over 80%. The importance of this fact cannot be overstressed. Rural areas in LAC tend to be more underdeveloped than urban areas. Usually, schools or hospitals are difficult to access, and infrastructures like sewage and safe water are not available. These characteristics tend to make poverty among people living in those areas more persistent; children with less access to health and education services will have more obstacles to leave poverty when they are adults.

Rural areas, however, are not homogeneous regions across LAC countries. It is estimated that over ninety percent of indigenous people are sedentary subsistence farmers who cultivate small plots (*minifundios*) and supplement their resources with seasonal wage labor, mining activities, and artisanal production. The other ten percent of indigenous people live in tropical or dry forest areas. Although they usually live in remote environments, they have become increasingly vulnerable because of the pressures on their lands and natural resources caused by mining ventures and the expansion of the agricultural frontier.[28]

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[28] IDB, 1997.

Graph 1.3
PERCENTAGE OF PEOPLE LIVING IN RURAL AREAS

Country	White	Non-White
Brazil	12.9	19.3
Peru	28.2	45.2
Chile	13.59	49.6
Bolivia	23.3	49.7
Colombia	51.4	54.3
Costa Rica	38.5	64.3
Paraguay	22.6	68.1
Nicaragua	40.7	72.0
Mexico	21.9	72.3
Guatemala	51.2	74.5
Honduras	51.6	82.8
Ecuador	40.2	88.8
Panama	33.0	100.0
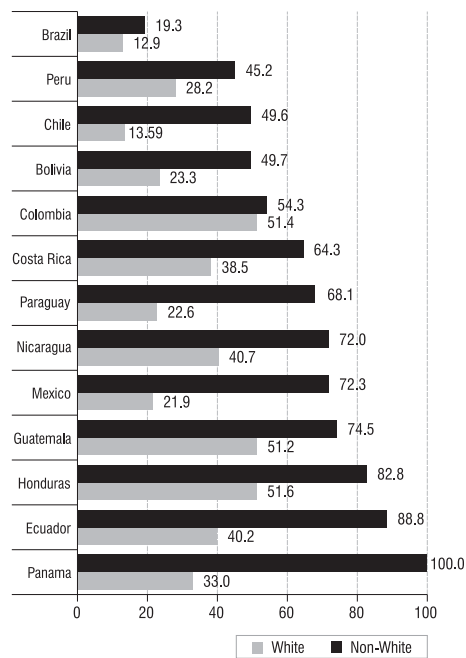
Afro-descendant people, on the other hand, live predominantly along the coastal areas of the Pacific and Atlantic oceans or along the Caribbean Sea[29] , and are not as rural as indigenous people. In Brazil, the country with the largest afro-descendant population in South America, afro-descendant communities living in rural areas only reach 19%. Moreover, we found that the difference in location patterns between white and afro-descendant people in Brazil and Colombia[30] are smaller than the difference between white and indigenous people in other LAC countries.

This difference in location between afro-descendant and indigenous people is an important fact to acknowledge when targeting developing plans for afro-descendant and indigenous communities. In the latter case, location can be used as a targeting factor whereas it seems that, in the first case, it cannot.

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[29] World Bank, 2003.

[30] Remember that in Brazil, Costa Rica, and Colombia we defined non-white as afro-descendant.

Family Characteristics. Gender structures between white and non-white individuals are, as expected, very similar (see Table 1.5). The structure of each population, however, differs in terms of age. Excluding Chile, the percentage of individuals younger than 14 years old is higher in non-white groups (see Table 1.6). Another way of considering this fact is that non-white families tend to have more children than their white counterparts; this difference, in some cases, is similar to cases in Ecuador, Honduras, Panama and Nicaragua. In the latter country, for instance, the average number of children in a euro-descendant or mestizo family is 1.3, while in its indigenous counterpart, the number is 2.6 (see Table 1.7).

Table 1.5
GENDER AND URBAN STRUCTURE
BY ETHNIC GROUP

COUNTRY	YEAR	% OF GROUP POPULATION THAT ARE FEMALE		% OF GROUP POPULATION LIVING IN RURAL AREAS	
		White (i)	Non-White (ii)	White (iii)	Non-White (iv)
Bolivia	1997	50,1	50,9	20,4	60,3
	2002	50,5	50,2	23,3	49,7
Brazil	1995	51,9	50,0	16,8	26,1
	2002	52,3	50,0	12,9	19,3
Chile	2000	51,0	47,3	13,6	49,6
Colombia	1999	51,4	51,0	51,4	54,3
Costa Rica	1992	50,6	49,2	54,1	72,3
	2001	50,7	48,4	38,5	64,3
Ecuador	1998	50,1	50,2	40,2	88,8
Guatemala	2002	51,8	51,5	51,2	74,5
Haiti	2001	50,7	51,7	52,4	70,1
Honduras	2003	51,3	49,8	51,6	82,8
Mexico	1992	51,1	47,5	24,8	78,1
	2002	51,2	51,8	21,9	72,3
Nicaragua	1998	51,1	51,5	45,3	62,9
	2001	50,8	51,3	40,7	72,0
Panama	2002	49,7	49,5	33,0	100,0
Paraguay	1995	51,7	48,1	24,0	75,7
	2001	54,3	46,9	22,6	68,1
Peru	2001	51,0	50,3	28,2	45,2
Suriname	1999	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on Household Surveys.

Graph 1.4
FAMILY CHARACTERISTICS

Number of Children under 12 per Family

Country	Non-White	White
Chile	0.58	0.69
Brazil	0.85	0.65
Guatemala	0.93	0.59
Colombia	0.99	0.83
Costa Rica	1.07	0.87
Peru	1.14	0.98
Bolivia	1.39	1.25
Mexico	1.39	0.89
Paraguay	1.40	1.11
Ecuador	1.61	1.11
Honduras	1.81	1.23
Panama	1.88	0.78
Nicaragua	2.57	1.26

Average Family Size

Country	Non-White	White
Chile	3.74	3.83
Brazil	3.50	3.18
Guatemala	4.26	3.59
Colombia	4.53	4.13
Costa Rica	3.91	3.97
Peru	4.50	4.51
Bolivia	4.30	4.44
Mexico	4.69	4.10
Paraguay	4.84	4.38
Ecuador	4.53	4.50
Honduras	5.59	4.93
Panama	7.09	3.94
Nicaragua	6.90	5.23

Marital Status

Country	Non-White	White
Chile	71.61	69.87
Brazil		
Guatemala	83.38	74.89
Colombia	68.71	65.84
Costa Rica	76.33	69.76
Peru	72.56	69.15
Bolivia	82.71	75.80
Mexico	81.71	75.21
Paraguay	75.02	75.62
Ecuador	92.27	73.80
Honduras	73.82	72.34
Panama	85.60	68.00
Nicaragua	78.28	69.40

Table 1.6
AGE STRUCTURE BY ETHNIC GROUP
(AS PERCENTAGE OF REFERENCE POPULATION)

COUNTRY	YEAR	WHITE				NON-WHITE				TOTAL			
		[0-14] (i)	[15-24] (ii)	[25-54] (iii)	[55-(+)] (iv)	[0-14] (v)	[15-24] (vi)	[25-54] (vii)	[55-(+)] (viii)	[0-14] (ix)	[15-24] (x)	[25-54] (xi)	[55-(+)] (xii)
Bolivia	1997	43	22	28	7	34	14	37	14	39	19	32	10
	2002	38	24	31	7	41	15	33	10	40	19	32	9
Brazil	1995	30	18	39	13	35	20	35	10	32	19	37	12
	2002	26	18	41	14	30	21	38	11	28	19	40	13
Chile	2000	28	17	41	15	14	14	51	22	27	17	41	15
Colombia	1999	31	19	38	12	35	19	34	11	31	19	38	12
Costa Rica	1992	34	19	36	11	41	18	33	8	35	19	36	11
	2001	30	20	38	12	36	19	36	9	31	20	38	11
Ecuador	1998	36	20	34	10	42	15	33	11	36	20	34	10
Guatemala	2002	26	27	37	10	30	25	35	10	28	26	36	10
Haiti	2001	40	21	31	8	39	20	29	12	39	20	29	12
Honduras	2003	40	21	29	10	46	19	26	9	40	21	29	9
Mexico	1992	37	21	33	9	45	15	31	8	38	21	33	9
	2002	32	19	37	12	41	17	31	12	32	19	37	12
Nicaragua	1998	42	21	29	8	51	20	25	4	42	21	29	8
	2001	39	22	30	9	50	21	24	5	39	22	30	9
Panama	2002	30	19	38	13	49	17	27	7	32	18	38	12
Paraguay	1995	39	18	35	8	46	15	29	11	42	17	32	9
	2001	36	22	35	8	40	18	29	13	38	20	32	10
Peru	2001	31	19	37	13	39	19	31	11	34	19	35	12
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Author's calculations based on Household Surveys

Table 1.7
AVERAGE FAMILY SIZE
(NUMBER OF INDIVIDUALS)

COUNTRY	YEAR	PERSONS		CHILDREN		CHILDREN UNDER 12	
		White (i)	Non-White (ii)	White (iii)	Non-White (iv)	White (v)	Non-White (vi)
Bolivia	1997	4,61	3,89	2,44	1,93	1,37	1,20
	2002	4,44	4,30	2,29	2,23	1,25	1,39
Brazil	1995	3,65	4,21	1,60	2,06	0,81	1,09
	2002	3,18	3,50	1,32	1,62	0,65	0,85
Chile	2000	3,83	3,74	1,61	1,47	0,69	0,58
Colombia	1999	4,13	4,53	1,82	2,00	0,83	0,99
Costa Rica	1992	4,33	4,32	2,16	2,16	1,11	1,39
	2001	3,97	3,91	1,89	1,90	0,87	1,07
Ecuador	1998	4,50	4,53	2,13	2,27	1,11	1,61
Guatemala	2002	3,59	4,26	1,54	2,04	0,59	0,93
Haiti	2001	4,75	4,30	2,17	1,89	1,27	1,03
Honduras	2003	4,93	5,59	2,33	3,02	1,23	1,81
Mexico	1992	4,74	4,90	2,44	2,50	1,34	1,74
	2002	4,10	4,69	1,90	2,41	0,89	1,39
Nicaragua	1998	5,37	6,98	3,03	4,73	1,96	3,26
	2001	5,23	6,90	2,56	4,03	1,26	2,57
Panama	2002	3,94	7,09	1,68	3,26	0,78	1,88
Paraguay	1995	4,37	4,82	2,03	2,49	1,23	1,59
	2001	4,38	4,84	2,08	2,49	1,11	1,40
Peru	2001	4,51	4,50	2,13	2,21	0,98	1,14
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Author's calculations based on Household Surveys

This translates, in many cases, in differences in family size. A typical non-white family has in general a larger number of members than a white family, yet this difference is smaller than expected. One possible explanation is that non-white people get married before or that they leave their parents' home at an earlier age than white people. This explanation is consistent with the result of a higher proportion of married people aged 25-45 in the non-white group. Finally, we also found a lower proportion of single-headed families among the non-white population (see Tables 1.8 and 1.9).

Table 1.8
MARITAL STATUS
(OF INDIVIDUALS BETWEEN 25 AND 45 YEARS OLD)

COUNTRY	YEAR	PERCENTAGE MARRIED	
		White (i)	Non-White (ii)
Bolivia	1997	0,76	0,84
	2002	0,76	0,83
Brazil	1995	n.a.	n.a.
	2002	n.a.	n.a.
Chile	2000	0,70	0,72
Colombia	1999	0,66	0,69
Costa Rica	1992	0,71	0,79
	2001	0,70	0,76
Ecuador	1998	0,74	0,92
Guatemala	2002	0,75	0,83
Haiti	2001	0,67	0,63
Honduras	2003	0,72	0,74
Mexico	1992	n.a.	n.a.
	2002	0,75	0,82
Nicaragua	1998	0,72	0,82
	2001	0,69	0,78
Panama	2002	0,68	0,86
Paraguay	1995	0,79	0,78
	2001	0,76	0,75
Peru	2001	0,69	0,73
Suriname	1999	n.a.	n.a.

Labor Market Characteristics.[31] The analysis of labor market characteristics by ethnicity can also help us understand some of the causes of differences in poverty and educational outcomes between white and non-white people.

Let us first focus on men who are in their prime age (i.e. who are between 25 and 50 years old).[32] Both white and non-white men actively participate in the labor market; this means that a high percentage of individuals in this group are either employed or unemployed (but are

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[31] For detailed data please refer to Tables 1.10 – 1.13.

[32] The reason for focusing on people in their prime age is that it avoids questions related to preferences or intertemporal decisions. Essentially, younger people have higher chances of being (or considering being) in school, and older individuals are more likely to be retired. In other words, they show a lower attachment to the labor market.

Table 1.9
TYPE OF FAMILY-MONOPARENTAL FAMILIES
(AS A % OF REFERENCE POPULATION)

COUNTRY	YEAR	PERCENTAGE MONOPARENTAL	
		White (i)	Non-White (ii)
Bolivia	1997	0,20	0,18
	2002	0,21	0,18
Brazil	1995	0,18	0,21
	2002	0,26	0,30
Chile	2000	0,21	0,19
Colombia	1999	0,26	0,26
Costa Rica	1992	0,20	0,17
	2001	0,25	0,23
Ecuador	1998	0,20	0,10
Guatemala	2002	0,26	0,22
Haiti	2001	n.a.	n.a.
Honduras	2003	0,26	0,20
Mexico	1992	0,14	0,07
	2002	0,22	0,20
Nicaragua	1998	0,29	0,21
	2001	0,28	0,22
Panama	2002	0,27	0,15
Paraguay	1995	0,19	0,17
	2001	0,23	0,22
Peru	2001	0,21	0,22
Suriname	1999	n.a.	n.a.

not inactive). There is, however, one difference between groups, which consists in the way individuals actually participate in the labor market: white individuals present higher rates of unemployment than non-white individuals (see Graph 1.5).

Part of this difference in unemployment rates comes from a fact already mentioned: non-white people are more concentrated in rural areas, where unemployment tends to be much lower than in urban areas. Differences in unemployment rates are also driven by differences in financing capacities during the unemployment period. In countries that lack unemployment insurance (or similar mechanisms that finance job search), unemployed workers have to finance the unemployment period by themselves.[33] If the worker cannot finance the period during which

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[33] Typically using savings or severance payments if they used to have a formal job.

Graph 1.5
LABOR MARKET CHARACTERISTICS - MALE

Participation

Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru

(scale: 0, 20, 40, 60, 80, 100)

White — Non-White

Unemployment Rates

Country	White	Non-White
Chile	9.74	7.44
Colombia	8.68	8.65
Panama	7.79	0.64
Nicaragua	7.55	6.37
Guatemala	6.39	4.76
Paraguay	5.20	4.13
Honduras	4.60	1.05
Bolivia	4.41	1.69
Brazil	4.40	5.98
Peru	3.80	3.06
Costa Rica	3.07	3.82
Ecuador	2.68	1.87
Mexico	2.32	0.23

(scale: 0, 5, 10, 15)

White ■ Non-White

Employment Rates

Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru

(scale: 0, 20, 40, 60, 80, 100)

White — Non-White

he or she is searching for a job, the worker will end up being forced to accept any job. If markets are integrated, in the sense that both white and non-white individuals have access to the same jobs, a higher unemployment rate in white individuals might suggest that white people have better means to finance job search than non-white people (either because white men are wealthier or because they used to work in a formal job that provided them with severance payment).

Indeed, descriptive data tends to support this view: the proportion of white men working in informal jobs is much lower than the proportion of non-white men working in informal jobs. As it can be observed from Graph 1.6, a pattern observed almost in every LAC country is that non-white individuals tend to work in the agricultural sector and in small firms, and are usually self-employed.

The case of women is more complex to analyze and actually very little can be said from descriptive statistics. Latin American women have been changing their behavior with respect to labor market participation in the last thirty years. The process began many years ago in some countries (e.g. Brazil) and is a relatively new phenomenon in other countries, such as Ecuador or Paraguay. Graph 1.7 shows that, nowadays,

Graph 1.6
EMPLOYMENT CHARACTERISTICS - MALE
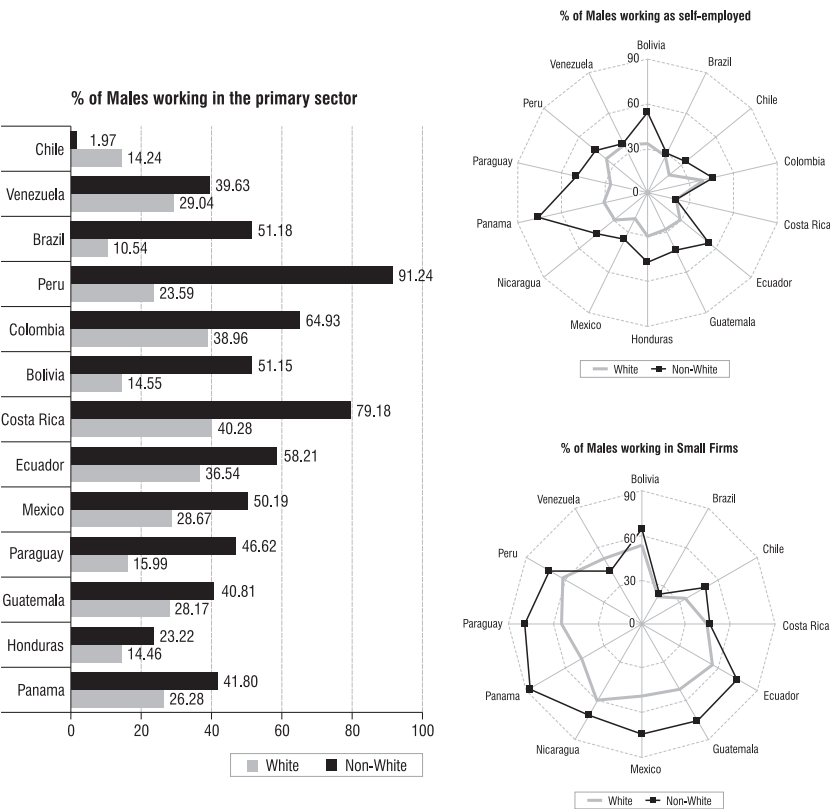
labor market participation and employment rates are higher among non-white women only in Bolivia, Ecuador, and Peru. However, the trend in female participation can change these facts rapidly within the next years.[34]

Graph 1.7
LABOR MARKET CHARACTERISTICS - FEMALE
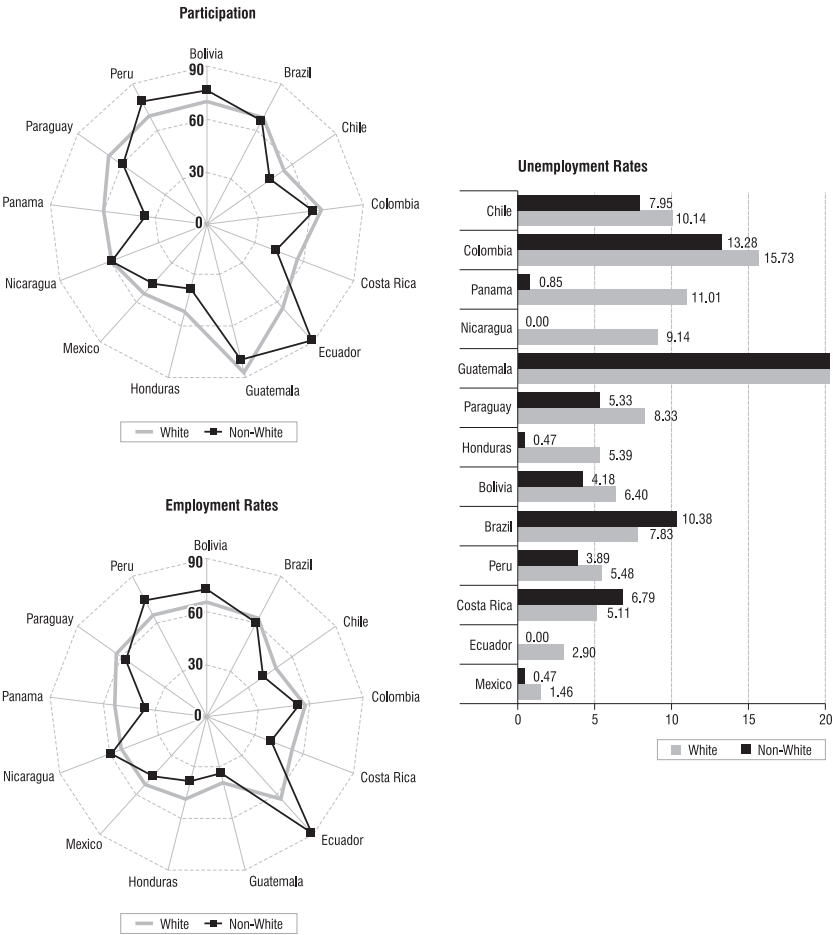
Table 1.10
LABOR STATUS BY GENDER
(INDIVIDUALS BETWEEN 25 AND 50 YEARS OLD)

COUNTRY	YEAR	PARTICIPATION RATE (%)				UNEMPLOYMENT RATE (%)				EMPLOYMENT RATE (%)			
		White		Non-White		White		Non-White		White		Non-White	
		Female (i)	Male (ii)	Female (iii)	Male (iv)	Female (v)	Male (vi)	Female (vii)	Male (viii)	Female (ix)	Male (x)	Female (xi)	Male (xii)
Bolivia	1997	62,8	94,2	75,6	97,9	2,1	1,7	0,4	1,2	61,4	92,7	75,3	96,7
	2002	69,6	95,5	75,9	96,5	6,4	4,4	4,2	1,7	65,2	91,3	72,7	94,9
Brazil	1995	64,5	95,6	64,2	95,0	5,2	3,4	5,9	4,3	61,2	92,3	60,4	91,0
	2002	68,8	94,4	67,5	93,5	7,8	4,4	10,4	6,0	63,5	90,2	60,5	87,9
Chile	2000	53,4	94,1	44,0	94,9	10,1	8,0	9,7	7,4	47,9	86,6	39,7	87,9
Colombia	1999	66,3	97,2	60,7	96,6	15,7	8,7	13,3	8,7	55,9	88,8	52,6	88,3
Costa Rica	1992	40,5	95,4	38,5	97,4	3,7	2,2	8,4	3,9	39,0	93,3	35,2	93,6
	2001	54,7	96,3	42,5	96,3	5,1	3,1	6,8	3,8	51,9	93,3	39,6	92,6
Ecuador	1998	64,2	96,7	89,3	100,0	2,9	2,7	0,0	1,9	62,4	94,1	89,3	98,1
Guatemala	2002	87,2	96,7	79,9	96,9	56,2	6,4	59,0	4,8	38,2	90,5	32,8	92,3
Haiti	2001	79,9	81,2	70,5	86,2	23,0	19,2	26,8	17,7	61,5	65,6	51,6	70,9
Honduras	2003	51,7	94,9	37,7	94,5	5,4	4,6	0,5	1,1	48,9	90,6	37,5	93,5
Mexico	1992	36,9	89,9	25,5	88,8	1,4	2,6	1,1	0,0	36,3	87,6	25,3	88,8
	2002	53,4	94,6	45,9	94,8	1,5	2,3	0,5	0,2	52,6	92,4	45,7	94,6
Nicaragua	1998	49,1	87,8	35,5	92,3	10,8	8,7	0,0	7,1	43,8	80,2	35,5	85,8
	2001	57,9	96,0	58,0	98,5	9,1	7,6	0,0	6,4	52,6	88,8	58,0	92,3
Panama	2002	58,5	96,3	35,2	97,5	11,0	7,8	0,9	0,6	52,1	88,8	34,9	96,9
Paraguay	1995	71,5	98,2	73,0	97,6	3,9	2,3	1,1	1,5	68,8	96,0	72,2	96,2
	2001	68,2	96,2	58,8	96,3	8,3	5,2	5,3	4,1	62,5	91,2	55,6	92,4
Peru	2001	69,4	91,6	78,8	94,4	5,5	3,8	3,9	3,1	65,6	88,1	75,7	91,5
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on Household Surveys.

Table 1.11
EMPLOYMENT SECTORAL STRUCTURE BY GENDER
(INDIVIDUALS BETWEEN 25 AND 50 YEARS OLD AS A PERCENTAGE OF REFERENCE POPULATION)

COUNTRY	YEAR	WHITE Female				WHITE Male				NON-WHITE Female				NON-WHITE Male			
		Primary	Lab mnf	Cap mnf	Services	Primary	Lab mnf	Cap mnf	Services	Primary	Lab mnf	Cap mnf	Services	Primary	Lab mnf	Cap mnf	Services
Bolivia	1997	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	2002	14,0	12,9	n.a.	73,1	26,3	15,8	n.a.	57,9	41,8	11,4	n.a.	46,8	41,8	13,8	n.a.	44,4
Brazil	1995	14,6	6,2	3,4	75,8	17,7	6,4	12,7	63,3	21,9	4,8	1,9	71,4	28,0	5,0	8,3	58,8
	2002	10,1	9,6	3,9	76,4	14,5	6,2	11,4	68,0	16,4	8,1	2,1	73,5	23,2	4,9	8,5	63,4
Chile	2000	6,0	7,4	3,5	83,1	19,6	6,4	10,0	64,0	10,6	4,5	3,3	81,5	38,1	5,1	5,2	51,6
Colombia	1999	6,2	12,9	3,6	77,3	28,2	5,4	7,5	59,0	9,0	10,1	1,5	79,4	40,8	4,6	5,0	49,6
Costa Rica	1992	3,3	16,6	5,0	75,2	24,9	6,3	10,8	58,0	21,5	8,9	1,4	68,2	52,3	1,1	5,6	41,0
	2001	3,6	13,9	3,9	78,6	16,0	7,6	8,5	67,9	18,2	9,1	1,6	71,1	46,6	2,6	3,8	47,0
Ecuador	1998	16,8	9,0	3,0	71,3	28,7	4,2	7,6	59,5	67,4	9,6	2,4	20,6	50,2	1,4	1,8	46,6
Guatemala	2002	14,8	22,2	2,1	61,0	36,5	7,8	7,1	48,6	27,2	36,7	1,8	34,3	58,2	6,3	2,6	32,9
Haiti	2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	21,7	4,6	0,7	73,1	53,2	5,9	3,6	37,4
Honduras	2003	6,8	23,5	1,9	67,8	40,3	8,9	4,8	46,0	29,1	20,7	4,0	46,3	79,2	0,4	2,4	18,1
Mexico	1992	7,8	10,3	5,2	77,1	19,6	9,1	9,8	61,6	34,2	26,7	0,3	38,9	73,1	5,0	0,6	21,2
	2002	6,6	15,5	2,3	75,7	14,6	15,2	2,8	67,5	35,3	19,1	0,0	45,6	51,2	4,1	1,4	43,4
Nicaragua	1998	7,8	9,7	1,5	81,0	38,7	5,6	4,8	50,9	31,9	5,5	n.a.	62,6	60,9	1,7	n.a.	37,5
	2001	6,8	12,6	0,9	79,7	39,0	5,3	5,9	49,8	59,9	n.a.	n.a.	40,1	64,9	n.a.	3,7	31,4
Panama	2002	2,9	7,9	3,4	85,7	23,6	5,5	7,5	63,4	70,4	14,8	9,3	5,6	91,2	0,7	1,6	6,5
Paraguay	1995	0,5	11,6	2,4	85,5	4,3	6,9	12,9	76,0	6,4	12,3	4,0	77,3	26,0	7,3	14,8	51,9
	2001	6,5	9,5	2,0	82,0	10,5	6,6	11,8	71,1	36,6	8,8	0,6	54,0	51,2	4,4	7,3	37,2
Peru	2001	16,6	8,1	3,2	72,2	29,0	4,6	7,0	59,4	36,6	6,1	2,1	55,3	39,6	3,8	6,0	50,6
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on Household Surveys.

Table 1.12
TYPE OF WORK BY GENDER
(INDIVIDUALS BETWEEN 25 AND 50 YEARS OLD AS A PERCENTAGE OF REFERENCE POPULATION)

COUNTRY	YEAR	WHITE — Female				WHITE — Male				NON-WHITE — Female				NON-WHITE — Male			
		Entrepreneur	Wage earner	Self-employed	Zero income	Entrepreneur	Wage earner	Self-employed	Zero income	Entrepreneur	Wage earner	Self-employed	Zero income	Entrepreneur	Wage earner	Self-employed	Zero income
Bolivia	1997	3,8	45,0	38,2	13,0	12,4	52,1	32,6	2,9	1,4	11,7	38,5	48,4	7,4	29,2	59,9	3,5
Brazil	2002	2,2	42,0	40,7	15,2	8,3	53,3	33,4	5,0	2,2	20,0	40,2	37,7	7,8	34,9	53,9	3,3
	1995	3,6	52,8	27,6	16,0	8,7	61,3	28,3	1,8	1,0	44,9	35,4	18,7	3,7	62,0	31,9	2,5
Chile	2002	4,5	58,9	25,7	10,9	8,3	62,9	27,2	1,6	1,5	49,7	34,4	14,4	3,9	64,0	29,6	2,5
	2000	2,3	79,8	16,1	1,9	4,6	75,8	19,2	0,5	2,2	70,2	18,8	8,8	3,3	60,3	33,0	3,4
Colombia	1999	2,7	59,2	35,1	3,0	4,8	55,7	38,4	1,1	2,0	46,2	48,2	3,6	3,7	50,7	44,6	1,0
Costa Rica	1992	2,0	76,9	17,7	3,4	6,8	70,0	22,2	1,0	3,2	70,4	20,5	6,0	2,7	79,1	17,6	0,6
	2001	5,7	70,8	20,8	2,7	10,7	68,2	20,5	0,6	5,1	62,2	26,8	5,9	9,0	70,5	20,3	0,2
Ecuador	1998	4,1	42,1	33,5	20,3	10,1	56,4	28,9	4,6	1,4	9,1	35,5	54,1	3,3	39,1	53,0	4,6
Guatemala	2002	5,0	59,2	30,2	5,7	9,2	61,4	27,7	1,7	6,1	20,6	52,7	20,5	12,4	39,7	43,1	4,8
Haiti	2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0,3	14,0	83,6	2,1	0,7	24,4	72,7	2,3
Honduras	2003	4,8	45,7	44,0	5,5	15,9	51,7	29,6	2,8	6,3	19,0	64,2	10,5	17,7	33,4	46,5	2,4
Mexico	1992	3,1	64,8	25,6	6,5	7,5	72,8	17,8	2,0	1,2	12,2	74,8	11,8	10,3	41,9	42,9	4,9
	2002	2,2	64,2	25,2	8,5	6,1	72,6	19,4	1,9	1,2	29,9	58,9	10,0	2,5	59,3	34,8	3,4
Nicaragua	1998	1,5	57,1	35,4	6,0	6,4	56,8	31,9	4,9	4,2	49,8	28,7	17,3	2,0	42,2	52,0	3,8
	2001	2,4	51,2	38,8	7,6	9,1	58,4	28,4	4,2	0,0	28,7	30,4	40,9	8,2	42,8	43,0	6,0
Panama	2002	1,8	77,9	17,7	2,6	3,7	64,8	30,1	1,5	0,0	8,5	39,9	51,7	1,0	17,2	75,1	6,7
Paraguay	1995	5,1	45,5	44,4	5,0	10,8	57,3	31,4	0,4	0,7	14,7	81,5	3,2	2,5	33,1	64,0	0,5
	2001	5,3	55,8	33,8	5,1	13,9	59,1	25,5	1,5	1,6	26,4	62,4	9,6	6,4	38,8	48,6	6,2
Peru	2001	2,5	40,9	38,8	17,9	8,2	53,2	35,7	2,9	1,8	25,1	38,3	34,8	7,5	43,2	45,2	4,1
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on Household Surveys.

Table 1.13
FIRM SIZE BY GENDER
(INDIVIDUALS BETWEEN 25 AND 50 YEARS OLD AS A PERCENTAGE OF REFERENCE POPULATION)

| COUNTRY | YEAR | WHITE | | | | | | NON-WHITE | | | | | |
| | | Female | | | Male | | | Female | | | Male | | |
		Large (i)	Small (ii)	Public (iii)	Large (iv)	Small (v)	Public (vi)	Large (vii)	Small (viii)	Public (ix)	Large (x)	Small (xi)	Public (xii)
Bolivia	1997	18,7	62,2	19,2	32,9	55,6	11,5	8,5	86,1	5,5	18,9	72,3	8,9
	2002	18,4	66,3	15,4	36,2	53,3	10,5	16,9	74,6	8,5	26,7	64,0	9,3
Brazil	1995	41,9	19,4	38,7	60,7	20,7	18,6	37,1	20,8	42,1	57,6	21,4	21,0
	2002	46,1	23,4	30,5	61,8	21,6	16,7	40,0	26,6	33,5	59,6	23,2	17,2
Chile	2000	38,9	44,5	16,6	54,7	33,6	11,7	23,6	65,1	11,2	41,9	49,9	8,2
Colombia	1999	n.a.	87,84*	12,2	n.a.	93,11*	6,9	n.a.	85,48*	14,5	n.a.	93,03*	7,0
Costa Rica	1992	28,4	42,4	29,2	37,2	43,2	19,6	29,5	48,3	22,2	54,1	32,6	13,4
	2001	27,9	48,1	24,0	41,4	43,8	14,8	17,1	62,0	20,8	44,8	45,7	9,5
Ecuador	1998	22,5	66,8	10,8	35,8	54,8	9,5	8,1	89,7	2,2	17,8	74,1	8,1
Guatemala	2002	34,7	53,6	11,7	42,5	51,4	6,1	11,9	83,2	4,9	20,3	75,2	4,6
Haiti	2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Honduras	2003	66,6	21,6	11,8	69,5	24,7	5,8	85,4	4,7	9,9	91,5	4,7	3,8
Mexico	1992	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	2002	28,4	54,8	16,9	39,0	48,4	12,7	6,8	82,6	10,6	13,4	74,2	12,4
Nicaragua	1998	33,1	67,0	n.a.	40,3	59,7	n.a.	38,5	61,5	n.a.	26,8	73,2	n.a.
	2001	20,6	66,4	13,1	33,4	59,5	7,1	13,0	78,2	8,8	19,5	70,7	9,9
Panama	2002	32,3	41,2	26,6	37,6	46,5	15,9	1,7	94,9	3,4	7,3	86,9	5,8
Paraguay	1995	40,7	15,3	44,0	50,5	24,5	25,0	32,0	43,8	24,2	39,4	53,8	6,8
	2001	20,3	58,5	21,2	31,6	54,6	13,9	5,4	89,0	5,7	17,4	79,1	3,5
Peru	2001	13,7	73,1	13,2	25,9	61,7	12,4	9,0	83,6	7,4	19,2	71,3	9,4
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on Household Surveys.

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Chapter 2: Poverty Reduction* (MDG 1)

The discussion and approval of the Millennium Development Goals introduced the international development community to new forces that led the community to express a strong determination to tackle the high levels of poverty in Latin America and the Caribbean. About ten years ago Psacharopoulos and Patrinos (1994) drew attention to the issue of indigenous peoples and poverty reduction by showing the strong association between ethnicity and poverty in LAC, with indigenous peoples being over-represented among the poorest groups of the countries under study.

Here we provide more descriptive evidence about the relation between ethnicity and poverty, which complements and expands the findings of Psacharopoulos and Patrinos (1994). We analyze the situation of indigenous and afro-descendant people in terms of poverty and living conditions in fifteen countries that cover most of the indigenous/afro-descendant population of LAC countries. Moreover, in some cases we are able to study the evolution of poverty by groups during the last decade.

In the first section of the chapter, we provide a methodological discussion on poverty indexes, poverty lines and income concepts used in this chapter. We then describe the situation of white and non-white (i.e. indigenous and/or afro-descendant individuals[35]) groups regarding poverty and living conditions (Section 2). Finally, in Section 3 we characterize this situation in terms of differences in mean income and inequality, as well as ethnic discrimination.

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* All the tables included in this chapter can be downloaded from www.depeco.econo.unlp.edu.ar/cedlas

[35] The definition of "non-white" varies from one country to another. In some countries non-white refers to indigenous people, in others to afro-descendant people and in some others to both groups at the same time. Please refer to Chapter 1 for further details with respect to which definition applies to each country.

1.   Measuring Poverty in Household Surveys

The concept of poverty refers to the inability of an individual or household to ensure access to enough resources to satisfy basic needs. Therefore, in practice, measuring poverty requires two elements. First, we need to find what goods compose a basket of basic needs and how much they cost. Second, we need to assess if each individual has the sufficient amount of money to purchase that basket.

Poverty Lines. The first problem boils down to defining the so-called poverty line. There are two *types* of these lines. The "extreme poverty line" that includes basic food in the basic-needs-basket and the "poverty line" that includes some other goods besides food (clothing, housing, basic health, education, transportation, etc.). Moreover, there are three (complementary) *informational sources* of these poverty lines: official poverty lines, international poverty lines and a third type called 50%-of-the-median-income line.

In many countries, each national statistical agency computes an "official" poverty line by defining which goods will be classified as basic-needs-goods and by gathering information about prices for that set of goods. Sometimes, this information on prices contemplates regional differences (either by state/department or using a rural/urban classification). These "official" lines are important to the MDGs. The United Nations suggests using official lines in order to monitor country poverty trends. Unfortunately, some agencies do not publish an official poverty line, although they do publish an official poverty rate. In those cases, we estimate the poverty line that replicates that rate (again, we made use of regional information when it was available). Finally, some statistical agencies compute neither poverty lines nor poverty rates. In those cases, we used the poverty line published by the World Bank in its last Poverty Assessment Report as an "official" poverty line.

One drawback of "official poverty lines" is that they are not comparable among countries. Comparison of poverty among countries is important because, among other things, it might help international organizations allocate resources in different countries. To solve this problem, the World Bank has established a threshold of one dollar per day per person, based on purchasing power parity. This poverty line will be important in our study because the MDGs' targets are defined using this specific line. At the same time, it is usually recognized that this one dollar a day poverty line is, in the case of many countries,

(including many in LAC) a conservative line[36], as people who are considered poor by national standards are not considered so when using this poverty line. Therefore, in addition, we use two dollar a day as the poverty line. Whether this latter line reflects extreme poverty or moderate poverty will depend on the country under analysis.

Finally, we also use a third type of line that is calculated as 50% of the median income. This line is usually located somewhere between the "official poverty line" and the "extreme poverty line" (and also between one and two dollar PPP lines). In some cases, however, it is lower than the official extreme poverty line (Haiti) and in others is greater than the official poverty line (Chile).

Income Definition. Once the relevant poverty lines are selected, we need to define which definition of income is going to be used to determine whether or not the individual is poor. It is worth noting that the MDGs' targets do not specify any income definition and that, as it is expected, poverty rates do vary with the income definition that is used.

It can be argued that among the variables usually included in a household survey, consumption is probably the one that best approximates living standards.[37] Its main advantages over its usual competitor, household income, include: (i) underreporting is usually less severe for consumption data than for income and (ii) it reflects more accurately the current well-being of individuals than income because people can borrow and lend money. Unfortunately, in LAC countries, consumption surveys are very rare. Therefore, the measurement of poverty in LAC has mainly been done using household income. Here, we will follow the same approach.

Note, however, that by using income we are implicitly assuming that household current income is highly correlated with individual living standards. It is difficult to assess how distorted the picture we draw with income data from household surveys is from the reality we would like to assess. If we accept that there exists a high positive correlation between current income and consumption, then using income is an acceptable proxy.

Individuals usually live in households and share a common budget. This implies that an individual's well being depends on the resources available in the household and also on the size and structure of that household. Typically, there are two concepts of income that can be used

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[36] For instance, Besley and Burguess (2003).

[37] See Deaton (1997).

in poverty analysis. The most common one is the *household per capita income* that is constructed as the sum of income earned by each member of a family (i.e. the total family income) divided by the number of members in the family. That per capita household income is then assigned to each member of the family. This definition implicitly assumes that there is an egalitarian distribution of resources and needs within each family. It can be argued, however, that some members of the family actually need more resources than others, as a function of age and gender. To control for these differences, we also construct an income variable adjusted for *adult equivalents.*

Poverty measures. We use a class of poverty measures generalized by Foster, Greer and Thorbecke (1984) of the following form:

$$P_\alpha = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z-y}{z} \right)^\alpha$$

where *n* is the total population, *q* is the number of individuals *i* whose income y_i is lower than the poverty line *z*. In symbols, if we sort incomes from minimum to maximum we will have $y_1 < ... < y_q < z < y_{q+1} < ... < y_n$. Finally, α is a non negative number.

When [$\alpha = 0$] this general measure becomes the *headcount index,* which counts the number of people who are below the poverty line and divides it by the total population. This is the measure used to set the MDGs on poverty, and its two main advantages are that it is easy to construct and straightforward to understand. Its main drawback, however, is that it ignores differences in the well being between different poor households. In other words, it assumes that all poor households are in the same situation. In addition, over time the index does not change if individuals below the poverty line become poorer or wealthier.

This problem is solved when we set [$\alpha = 1$], which transforms the general index into what is called the *poverty gap index* (also included among the MDGs' targets). It is defined as the average, over all individuals, of the relative gaps between poor people's living standards and the poverty line. This index can be interpreted as the average shortfall of poor people. It shows how much would have to be transferred (in terms of the poverty line) to the poor in order to bring their expenditure up to the poverty line. In other words, the index measures the minimum cost of eliminating poverty. Although this index solves the problems present in the headcount ratio, it still has some drawbacks: it does not capture differences in the severity of poverty amongst the poor, it ignores inequality among the poor, and it is insensitive to transfers among the poor.

Setting $[\alpha = 2]$ solves this latter problem and transforms the general index into what is called the *severity of poverty index,* which is a weighted sum of poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves. This index takes inequality among the poor into account: note that a transfer from a poor household to an even poorer family would reduce the index whereas a transfer from a very poor family to a less poor family would increase the index. Unfortunately, the index is usually difficult to interpret (especially when used to make comparisons among groups or countries).

Population Weights. All measures and simulation exercises included in this study will make use of population weights. That is, each observation in the household surveys represents a certain number of individuals in the total population.

In conclusion, the next table sums up the poverty indexes computed in this chapter. Each index is computed for two income definitions: household per capita and adult equivalent. In addition, the table shows which of these indexes are part of the MDGs' targets.

POVERTY INDEXES AND MDGs

	FOSTER, GREER AND THORBECKE (1984) INDEX		
	$\alpha = 0$	$\alpha = 1$	$\alpha = 2$
	Headcount Ratio	Poverty Gap	Severity of Poverty
1 USD PPP	MDG 1	MDG 1	X
2 USD PPP	X	X	X
Official Poverty Line	MDG 1	X	X
Official Extreme Poverty Line	X	X	X
50% of median income	X	X	X

Results are shown in Tables 2.1 to 2.6. In particular, in Tables 2.1-2.3 we use household per capita income whereas in Tables 2.4-2.6 we use adult equivalents income to construct our indexes. For each concept of income, we compute the headcount ratio, the poverty gap, and the severity of poverty index. In each of these tables, indexes are calculated with five different poverty lines: one USD a day PPP, two USD a day PPP, 50% of the median income, official moderate poverty line and the official extreme poverty line. Finally, each of these indexes is computed for the white population (first column), the non-white population (second column) and the complete population (third column).

Table 2.1
POVERTY INCIDENCE (MDG 1)
BY HOUSEHOLD PER CAPITA INCOME

COUNTRY	YEAR	1 USD PER DAY			2 USD PER DAY			50% OF MEDIAN IPCF			OFFICIAL POVERTY LINE			OFFICIAL EXTREME POVERTY LINE		
		White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)
Bolivia	1997	14,8	45,3	28,7	32,5	64,0	46,8	16,7	48,7	31,2	53,7	76,1	63,9	27,8	57,5	41,3
	2002	16,6	37,1	27,7	34,0	57,9	47,0	18,0	39,1	29,5	54,3	72,6	64,3	25,5	45,8	36,6
Brazil	1995	4,7	12,7	8,3	12,8	32,0	21,4	14,8	36,7	24,7	39,9	69,7	53,3	17,7	40,9	28,2
	2002	5,1	10,6	7,6	11,2	25,7	17,9	17,2	36,8	26,2	39,2	66,6	51,8	17,7	38,0	27,0
Chile	2000	3,4	9,4	3,5	7,5	20,5	7,7	12,9	29,0	13,1	20,4	28,5	20,5	4,5	3,1	4,5
Colombia	1999	15,2	24,1	16,2	26,6	38,5	27,9	25,6	37,1	26,9	53,8	66,9	55,3	20,5	31,0	21,7
Costa Rica	1992	8,2	7,8	8,1	21,0	16,8	20,7	21,4	17,2	21,1	48,4	45,9	48,2	17,4	13,3	17,1
	2001	5,0	4,9	5,0	11,6	12,8	11,8	21,2	29,7	22,1	32,3	41,7	33,4	12,0	13,1	12,1
Ecuador	1998	29,0	61,0	30,3	55,7	82,1	56,7	24,8	53,7	25,9	45,4	75,8	46,6	16,0	38,9	16,9
Guatemala	2002	11,4	31,5	20,0	20,9	50,4	33,5	16,4	43,2	27,9	34,6	64,4	47,3	14,3	39,1	24,9
Haiti	2001	51,7	50,9	50,9	64,3	73,7	73,6	40,2	30,5	30,6	60,6	67,0	67,0	53,2	57,9	57,8
Honduras	2003	14,7	26,1	15,8	34,2	60,4	36,6	22,6	41,4	24,4	66,3	81,2	67,7	46,9	69,6	49,0
Mexico	1992	10,7	53,3	12,8	26,7	79,0	29,3	20,9	74,0	23,5						
	2002	12,3	40,9	13,9	24,4	72,2	27,1	22,9	70,2	25,5	20,1	60,4	22,4	14,5	47,9	16,4
Nicaragua	1998	24,5	46,0	24,9	44,3	61,4	44,6	28,2	47,3	28,6	47,6	62,3	48,0	17,0	37,7	17,5
	2001	15,0	35,0	15,8	37,5	68,4	38,6	21,3	51,8	22,5	45,2	74,5	46,3	14,5	33,9	15,2
Panama	2002	9,3	54,7	12,4	23,8	80,9	27,8	23,1	80,7	27,1	37,0	89,2	40,6	19,2	74,4	23,0
Paraguay	1995	2,7	24,3	11,8	7,2	43,3	22,3	11,6	57,6	33,7	17,8	47,9	30,4	4,8	24,5	13,1
	2001	2,2	17,3	9,9	5,4	33,5	19,8	10,7	40,9	27,7	21,3	47,4	34,7	5,0	24,9	15,2
Peru	2001	14,6	26,9	19,5	31,6	46,6	37,5	21,5	34,6	26,7	51,1	64,9	56,6	18,7	33,5	24,6
Suriname	1999	20,9	35,5	21,8	36,8	52,3	37,8	31,3	41,1	31,9	67,6	73,8	68,0	38,4	52,3	39,3

Source: Authors' calculations based on Household Surveys.

Table 2.2
POVERTY GAP (MDG 1)
BY HOUSEHOLD PER CAPITA INCOME

COUNTRY	YEAR	1 USD PER DAY			2 USD PER DAY			50% OF MEDIAN IPCF			OFFICIAL POVERTY LINE			OFFICIAL EXTREME POVERTY LINE		
		White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)
Bolivia	1997	8,1	33,1	19,4	15,7	44,3	28,7	8,7	34,2	20,3	26,3	51,9	37,9	13,4	39,1	25,1
	2002	8,5	23,8	16,8	16,8	35,9	27,2	9,2	25,0	17,8	23,6	37,3	31,0	9,5	18,3	14,3
Brazil	1995	2,5	5,6	3,9	5,5	14,0	9,4	6,8	17,1	11,5	18,1	37,7	26,9	7,2	18,2	12,2
	2002	3,5	6,1	4,7	5,8	12,0	8,6	8,0	17,1	12,2	18,8	36,2	26,8	8,3	17,8	12,7
Chile	2000	2,3	5,2	2,4	3,8	10,0	3,9	5,6	14,1	5,7	7,0	10,6	7,1	1,7	1,0	1,7
Colombia	1999	11,1	16,4	11,7	15,9	23,8	16,8	15,5	23,3	16,4	29,6	40,6	30,8	13,3	20,1	14,0
Costa Rica	1992	4,1	4,5	4,2	9,0	8,1	9,0	9,2	8,2	9,1	22,0	20,4	21,9	7,7	6,9	7,6
	2001	3,0	2,7	2,9	5,5	5,6	5,5	9,5	11,1	9,6	13,9	16,5	14,2	5,6	5,6	5,6
Ecuador	1998	15,4	36,7	16,3	29,3	55,4	30,3	13,4	33,0	14,2	23,2	47,5	24,1	9,1	24,0	9,7
Guatemala	2002	6,0	17,0	10,7	11,2	29,6	19,1	8,7	23,9	15,2	16,0	38,2	25,5	7,7	21,6	13,7
Haiti	2001	34,7	29,7	29,7	46,7	47,0	46,9	22,9	17,4	17,4	41,9	40,9	40,9	37,3	33,6	33,7
Honduras	2003	5,4	9,4	5,7	15,1	27,2	16,2	9,0	16,4	9,7	34,9	47,0	36,0	21,1	35,0	22,4
Mexico	1992	5,1	24,0	6,0	11,6	46,7	13,3	9,3	40,8	10,8						
	2002	8,9	18,8	9,5	13,5	38,7	14,9	12,9	36,8	14,2	11,7	30,4	12,8	9,7	22,0	10,4
Nicaragua	1998	15,0	29,6	15,3	24,7	40,8	25,1	16,6	32,0	17,0	26,9	43,0	27,2	11,5	22,4	11,8
	2001	6,7	16,8	7,0	16,4	36,1	17,1	9,1	22,5	9,6	20,3	43,0	21,2	6,7	15,6	7,0
Panama	2002	3,9	25,2	5,3	10,3	47,7	12,9	10,0	46,8	12,5	17,1	60,4	20,1	8,2	41,7	10,5
Paraguay	1995	1,2	11,3	5,5	3,0	22,3	11,1	7,6	42,0	24,2	6,0	24,3	13,7	1,8	10,9	5,7
	2001	1,3	7,6	4,5	2,6	16,8	9,9	4,9	20,3	13,6	6,2	20,2	13,4	1,6	9,8	5,8
Peru	2001	7,2	12,5	9,3	15,3	24,8	19,1	10,2	17,6	13,2	24,7	34,8	28,7	9,1	17,0	12,2
Suriname	1999	15,3	15,7	15,3	22,7	29,4	23,1	18,7	23,6	19,0	38,2	46,9	38,7	23,3	30,3	23,7

Source: Authors' calculations based on Household Surveys.

Table 2.3
SEVERITY OF POVERTY (MDG 1)
BY HOUSEHOLD PER CAPITA INCOME

COUNTRY	YEAR	1 USD PER DAY			2 USD PER DAY			50% OF MEDIAN IPCF			OFFICIAL POVERTY LINE			OFFICIAL EXTREME POVERTY LINE		
		White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)
Bolivia	1997	6,1	28,1	16,1	10,7	36,7	22,5	6,4	29,0	16,7	17,1	42,0	28,4	9,0	32,3	19,6
Brazil	2002	6,0	18,8	13,0	11,3	27,7	20,2	6,5	19,7	13,7	13,6	23,1	18,8	5,1	10,0	7,8
	1995	2,0	3,8	2,8	3,6	8,5	5,8	4,3	10,5	7,1	11,1	25,2	17,4	4,5	11,1	7,4
Chile	2002	3,1	4,8	3,9	4,3	8,1	6,0	5,5	11,1	8,1	12,1	24,4	17,8	5,6	11,5	8,4
Colombia	2000	2,0	4,0	2,0	2,8	6,8	2,9	3,7	9,4	3,8	3,7	5,6	3,7	1,0	0,5	1,0
Costa Rica	1999	9,8	13,8	10,3	12,7	18,9	13,4	12,5	18,6	13,2	21,4	30,6	22,4	11,2	16,3	11,7
	1992	3,1	3,7	3,1	5,8	5,7	5,8	5,9	5,8	5,9	13,6	12,5	13,6	5,0	5,1	5,0
Ecuador	2001	2,5	2,2	2,4	3,9	3,7	3,8	6,1	6,4	6,1	8,5	9,4	8,6	3,9	3,7	3,9
Guatemala	1998	11,1	28,0	11,8	20,2	42,9	21,1	9,8	25,4	10,4	16,0	36,3	16,8	6,9	18,2	7,4
	2002	4,2	12,1	7,6	7,7	21,3	13,5	6,0	17,0	10,7	10,7	27,9	18,1	5,4	15,3	9,6
Haiti	2001	26,7	21,7	21,7	38,2	35,4	35,4	15,6	12,7	12,7	33,9	30,2	30,2	29,4	24,6	24,6
Honduras	2003	2,8	4,7	3,0	8,8	15,7	9,4	5,0	8,7	5,3	22,2	31,5	23,0	12,6	21,4	13,4
Mexico	1992	3,6	14,0	4,1	7,3	31,8	8,5	6,0	26,7	7,0						
	2002	7,9	12,2	8,1	10,5	25,8	11,3	10,1	24,3	10,9	9,4	19,7	10,0	8,3	14,2	8,6
Nicaragua	1998	12,0	23,0	12,2	18,3	32,8	18,6	13,0	25,1	13,3	19,9	34,8	20,2	9,9	17,2	10,0
	2001	4,3	10,6	4,5	10,0	23,6	10,5	5,7	14,2	6,0	12,5	29,3	13,2	4,3	9,9	4,5
Panama	2002	2,2	14,4	3,1	6,1	32,7	7,9	5,9	31,9	7,7	10,5	45,1	12,9	4,7	27,5	6,3
Paraguay	1995	0,7	6,7	3,3	1,8	14,9	7,3	6,5	36,5	20,9	3,2	15,9	8,5	1,0	6,4	3,3
	2001	1,0	4,5	2,8	1,8	10,8	6,4	3,4	13,2	8,9	3,1	11,6	7,4	0,7	5,1	3,0
Peru	2001	4,8	7,7	6,0	9,9	16,6	12,6	6,7	11,3	8,5	15,8	23,6	18,9	6,0	10,8	7,9
Suriname	1999	13,5	12,2	13,4	17,9	21,2	18,1	15,4	16,6	15,4	28,2	35,1	28,6	18,3	21,8	18,5

Source: Authors' calculations based on Household Surveys.

Table 2.4
POVERTY INCIDENCE (MDG 1)
BY HOUSEHOLD EQUIVALENT INCOME

COUNTRY	YEAR	1 USD PER DAY			2 USD PER DAY			50% OF MEDIAN IPCF		
		White	Non-White	Total	White	Non-White	Total	White	Non-White	Total
		(i)	(ii)	(ii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
Bolivia	1997	10,2	32,4	23,5	21,7	54,7	36,7	15,4	47,1	29,8
	2002	11,0	30,4	21,5	23,6	47,2	36,4	17,1	38,6	28,8
Brazil	1995	2,9	7,1	4,8	8,1	21,0	13,9	15,1	36,2	24,6
	2002	4,3	8,2	6,1	8,6	19,4	13,6	15,7	34,3	24,3
Chile	2000	2,9	6,7	2,9	5,2	15,2	5,3	11,9	29,1	12,2
Colombia	1999	12,8	19,7	13,6	20,3	30,9	21,5	24,9	36,1	26,1
Costa Rica	1992	5,6	5,7	5,6	12,9	10,5	12,7	20,1	15,5	19,7
	2001	3,6	3,5	3,6	8,1	8,1	8,1	20,9	27,5	21,6
Ecuador	1998	21,1	47,1	22,1	42,4	72,8	43,6	24,9	52,0	26,0
Guatemala	2002	9,0	24,4	15,6	17,6	44,8	29,3	16,9	42,4	27,8
Haiti	2001	48,8	41,2	41,3	58,0	65,1	65,1	38,8	30,3	30,4
Honduras	2003	8,0	13,6	8,5	23,4	42,9	25,2	22,3	40,4	24,0
Mexico	1992	6,5	38,2	8,0	16,5	69,6	19,1	20,1	73,6	22,7
	2002	10,3	26,4	11,2	17,6	58,9	19,9	21,9	69,0	24,5
Nicaragua	1998	18,4	37,7	18,8	32,4	49,4	32,8	28,0	47,3	28,5
	2001	8,7	23,6	9,3	24,3	54,0	25,4	21,2	48,3	22,2
Panama	2002	6,0	37,4	8,2	16,4	66,8	19,9	22,3	77,0	26,0
Paraguay	1995	2,0	17,8	8,6	4,0	31,4	15,5	11,6	56,4	33,1
	2001	1,5	10,7	6,2	3,7	24,7	14,5	10,2	39,8	26,9
Peru	2001	10,4	19,8	14,1	23,1	36,6	28,5	21,2	34,3	26,4
Suriname	1999	17,8	21,5	18,1	31,8	41,1	32,4	29,5	41,1	30,2

Source: Authors' calculations based on Household Surveys

Table 2.5
POVERTY GAP (MDG 1)
BY HOUSEHOLD EQUIVALENT INCOME

COUNTRY	YEAR	1 USD PER DAY			2 USD PER DAY			50% OF MEDIAN IPCF		
		White	Non-White	Total	White	Non-White	Total	White	Non-White	Total
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
Bolivia	1997	6,2	29,4	16,8	11,0	38,4	23,4	8,4	34,1	20,1
	2002	6,3	20,0	13,8	12,0	29,5	21,5	9,0	24,8	17,6
Brazil	1995	2,0	3,7	2,8	3,6	8,7	5,9	6,3	15,6	10,5
	2002	3,2	5,2	4,1	4,7	9,2	6,8	7,4	15,6	11,2
Chile	2000	2,1	4,3	2,1	3,0	7,6	3,1	5,2	13,7	5,4
Colombia	1999	10,0	14,2	10,5	13,2	19,8	13,9	15,2	22,7	16,1
Costa Rica	1992	3,2	3,7	3,3	6,0	5,8	6,0	8,7	7,5	8,6
	2001	2,5	2,3	2,5	4,1	3,8	4,1	9,1	10,0	9,2
Ecuador	1998	11,8	29,6	12,5	21,8	45,2	22,7	13,5	32,6	14,2
Guatemala	2002	4,9	13,9	8,8	9,1	24,6	15,8	8,8	23,8	15,2
Haiti	2001	29,6	23,6	23,7	41,2	39,0	39,1	21,9	17,1	17,2
Honduras	2003	2,7	4,4	2,9	9,3	16,4	9,9	8,7	15,4	9,3
Mexico	1992	3,5	14,7	4,1	7,5	35,6	8,8	8,8	40,0	10,3
	2002	8,1	12,5	8,3	10,9	28,1	11,8	12,5	34,7	13,8
Nicaragua	1998	12,2	23,1	12,4	18,8	34,0	19,2	16,6	31,1	16,9
	2001	4,3	10,0	4,5	10,3	23,6	10,8	8,9	20,5	9,3
Panama	2002	2,4	14,2	3,2	6,7	34,3	8,6	9,5	42,7	11,7
Paraguay	1995	0,8	7,2	3,5	1,8	15,9	7,8	7,5	41,6	23,9
	2001	1,1	4,6	2,9	1,8	11,1	6,6	4,8	19,5	13,1
Peru	2001	5,2	8,3	6,4	10,9	18,6	13,9	9,8	17,0	12,7
Suriname	1999	13,9	13,0	13,8	19,0	22,8	19,2	18,2	21,6	18,4

Source: Authors' calculations based on Household Surveys

Table 2.6
SEVERITY OF POVERTY (MDG 1)
BY HOUSEHOLD EQUIVALENT INCOME

COUNTRY	YEAR	1 USD PER DAY			2 USD PER DAY			50% OF MEDIAN IPCF		
		White	Non-White	Total	White	Non-White	Total	White	Non-White	Total
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
Bolivia	1997	4,9	25,2	14,1	7,8	32,2	18,9	6,3	29,0	16,6
	2002	4,7	15,8	10,7	8,2	23,0	16,3	6,3	19,6	13,5
Brazil	1995	1,8	2,8	2,2	2,5	5,4	3,8	3,9	9,3	6,3
	2002	3,0	4,4	3,6	3,7	6,5	5,0	5,1	10,1	7,4
Chile	2000	1,8	3,4	1,8	2,4	5,4	2,4	3,5	9,1	3,6
Colombia	1999	9,2	12,3	9,6	11,1	16,0	11,7	12,3	18,1	13,0
Costa Rica	1992	2,5	3,3	2,6	4,1	4,4	4,2	5,6	5,4	5,6
	2001	2,2	2,0	2,2	3,1	2,8	3,0	5,9	5,9	5,9
Ecuador	1998	8,7	22,8	9,3	15,1	34,7	15,9	9,8	25,1	10,4
Guatemala	2002	3,4	10,0	6,2	6,3	17,5	11,1	6,1	16,9	10,7
Haiti	2001	21,3	17,2	17,2	32,9	28,7	28,8	14,5	12,4	12,5
Honduras	2003	1,5	2,1	1,6	5,0	8,6	5,4	4,7	8,1	5,0
Mexico	1992	2,8	8,1	3,0	4,9	22,2	5,7	5,6	25,8	6,6
	2002	7,4	8,7	7,5	9,0	18,1	9,5	9,9	22,6	10,6
Nicaragua	1998	10,2	17,8	10,4	14,4	26,7	14,7	13,0	24,1	13,2
	2001	3,0	6,6	3,1	6,3	14,7	6,7	5,5	12,8	5,8
Panama	2002	1,4	7,3	1,8	3,8	21,3	5,0	5,5	28,1	7,1
Paraguay	1995	0,4	3,9	1,9	1,1	10,2	4,9	6,5	36,2	20,8
	2001	0,9	2,8	1,9	1,3	6,8	4,1	3,2	12,4	8,4
Peru	2001	3,5	5,0	4,1	7,1	11,9	9,0	6,4	10,8	8,2
Suriname	1999	12,7	10,1	12,5	15,6	16,0	15,6	15,2	15,1	15,1

Source: Authors' calculations based on Household Surveys

2.   MDG 1: Poverty in LAC by Ethnicity

In this section we highlight three types of comparisons: (i) we compare poverty indexes across countries; (ii) we assess differences in poverty by groups, analyzing "approximate" distance from the MDGs and (iii) for those countries for which we have data on two points in time, we analyze the evolution of poverty.

We focus mainly on indexes calculated using the household per capita income. It is important to note that, although the values of these indexes change, when calculated using the adult equivalents income, the main stylized facts remain unchanged.

Poverty Rankings (by country). Poverty varies widely among LAC countries.[38] At one end of the spectrum, Chile, Costa Rica and Mexico have a relatively low proportion of poor people in their populations. According to the one dollar a day PPP poverty line, poverty in these countries is 3.5%, 5% and 13.9%, respectively. On the other side of the spectrum, the poorest countries are Haiti, Ecuador and Bolivia. Their one dollar a day PPP headcount ratios are 50.9%, 30.3%, and 27.7%, respectively (Table 2.7). Note that although the ranking is basically maintained across indexes, the variation of headcount ratios with respect to poverty lines is large. Each poverty line captures, in a sense, different types of poverty (from a very extreme poverty to a "milder" poverty). These rankings also hold when computing the poverty gap index (Table 2.8) and the severity of poverty (Table 2.9).

Poverty by Ethnicity. According to the MDGs, countries should halve poverty by 2015 taking 1990 as baseline year. Therefore, to assess this goal, we need to accurately define what the poverty rate was in 1990. Unfortunately, for some countries, household surveys are not available for that year (e.g. Haiti), and even in many countries where those types of surveys are in fact available, they are not comparable with more recent surveys (due to change in the sample definition, changes in the way the relevant questions were asked, or changes in the survey coverage).

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[38] Note that because we do not have information on ethnicity, we are excluding from the analysis some countries that are typically included in cross-country studies in LAC: Argentina, Uruguay, Venezuela and El Salvador. Therefore, rankings should be interpreted just as rankings within sample.

Table 2.7
POVERTY RANKINGS - HEADCOUNT RATIO

COUNTRY	YEAR	1 USD PER DAY		50% OF MEDIAN IPCF		2 USD PER DAY		OFFICIAL POVERTY LINE		OFFICIAL EXTREME POVERTY LINE	
		Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank
Chile	2000	3,5	(1)	13,1	(1)	7,7	(1)	20,5	(1)	4,5	(1)
Costa Rica	2001	5,0	(2)	22,1	(2)	11,8	(2)	33,4	(3)	12,1	(2)
Brazil	2002	7,6	(3)	26,2	(7)	17,9	(3)	51,8	(9)	27,0	(11)
Paraguay	2001	9,9	(4)	27,8	(11)	19,8	(4)	34,7	(4)	15,2	(3)
Panama	2002	12,4	(5)	27,1	(10)	27,8	(6)	40,6	(5)	23,0	(8)
Mexico	2002	13,9	(6)	25,5	(5)	27,1	(5)	22,4	(2)	16,4	(5)
Honduras	2003	15,8	(7)	24,4	(4)	36,6	(9)	67,7	(14)	49,0	(14)
Nicaragua	2001	15,8	(8)	22,5	(3)	38,6	(12)	46,3	(6)	15,2	(4)
Colombia	1999	16,2	(9)	26,9	(9)	27,9	(7)	55,3	(10)	21,7	(7)
Peru	2001	19,5	(10)	26,7	(8)	37,5	(10)	56,6	(11)	24,6	(9)
Guatemala	2002	20,0	(11)	27,9	(12)	33,5	(8)	47,3	(8)	24,9	(10)
Suriname	1999	21,8	(12)	31,9	(15)	37,8	(11)	68,0	(15)	39,3	(13)
Bolivia	2002	27,7	(13)	29,5	(13)	47,0	(13)	64,3	(12)	36,6	(12)
Ecuador	1998	30,3	(14)	25,9	(6)	56,7	(14)	46,6	(7)	16,9	(6)
Haiti	2001	50,9	(15)	30,6	(14)	73,6	(15)	67,0	(13)	57,8	(15)

Source: Authors' calculations based on Household Surveys.

Table 2.8
POVERTY RANKINGS - POVERTY GAP

COUNTRY	YEAR	1 USD PER DAY		50% OF MEDIAN IPCF		2 USD PER DAY		OFFICIAL POVERTY LINE		OFFICIAL EXTREME POVERTY LINE	
		Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank
Chile	2000	2,4	(1)	5,7	(1)	3,9	(1)	7,1	(1)	1,7	(1)
Costa Rica	2001	2,9	(2)	9,6	(2)	5,5	(2)	14,2	(4)	5,6	(2)
Paraguay	2001	4,5	(3)	13,6	(8)	9,9	(4)	13,4	(3)	5,8	(3)
Brazil	2002	4,7	(4)	12,2	(5)	8,6	(3)	26,8	(9)	12,7	(9)
Panama	2002	5,3	(5)	12,5	(6)	12,9	(5)	20,1	(5)	10,5	(7)
Honduras	2003	5,7	(6)	9,7	(4)	16,2	(7)	36,0	(13)	22,4	(13)
Nicaragua	2001	7,0	(7)	9,6	(3)	17,1	(9)	21,2	(6)	7,0	(4)
Peru	2001	9,3	(8)	13,2	(7)	19,1	(11)	28,7	(10)	12,2	(8)
Mexico	2002	9,5	(9)	14,2	(10)	14,9	(6)	12,8	(2)	10,4	(6)
Guatemala	2002	10,7	(10)	15,2	(11)	19,1	(10)	25,5	(8)	13,7	(10)
Colombia	1999	11,7	(11)	16,4	(12)	16,8	(8)	30,8	(11)	14,0	(11)
Suriname	1999	15,3	(12)	19,0	(15)	23,1	(12)	38,7	(14)	23,7	(14)
Ecuador	1998	16,3	(13)	14,2	(9)	30,3	(14)	24,1	(7)	9,7	(5)
Bolivia	2002	16,8	(14)	17,8	(14)	27,2	(13)	31,0	(12)	14,3	(12)
Haiti	2001	29,7	(15)	17,4	(13)	46,9	(15)	40,9	(15)	33,7	(15)

Source: Authors' calculations based on Household Surveys.

Table 2.9
POVERTY RANKINGS - SEVERITY OF POVERTY

COUNTRY	YEAR	1 USD PER DAY		50% OF MEDIAN IPCF		2 USD PER DAY		OFFICIAL POVERTY LINE		OFFICIAL EXTREME POVERTY LINE	
		Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank	Headcount Ratio	Rank
Chile	2000	2,0	(1)	3,8	(1)	2,9	(1)	3,7	(1)	1,0	(1)
Costa Rica	2001	2,4	(2)	6,1	(4)	3,8	(2)	8,6	(3)	3,9	(3)
Paraguay	2001	2,8	(3)	8,9	(8)	6,4	(4)	7,4	(2)	3,0	(2)
Honduras	2003	3,0	(4)	5,3	(2)	9,4	(6)	23,0	(13)	13,4	(13)
Panama	2002	3,1	(5)	7,7	(5)	7,9	(5)	12,9	(5)	6,3	(5)
Brazil	2002	3,9	(6)	8,1	(6)	6,0	(3)	17,8	(8)	8,4	(9)
Nicaragua	2001	4,5	(7)	6,0	(3)	10,5	(7)	13,2	(6)	4,5	(4)
Peru	2001	6,0	(8)	8,5	(7)	12,6	(9)	18,9	(11)	7,9	(8)
Guatemala	2002	7,6	(9)	10,7	(10)	13,5	(11)	18,1	(9)	9,6	(11)
Mexico	2002	8,1	(10)	10,9	(11)	11,3	(8)	10,0	(4)	8,6	(10)
Colombia	1999	10,3	(11)	13,2	(13)	13,4	(10)	22,4	(12)	11,7	(12)
Ecuador	1998	11,8	(12)	10,4	(9)	21,1	(14)	16,8	(7)	7,4	(6)
Bolivia	2002	13,0	(13)	13,7	(14)	20,2	(13)	18,8	(10)	7,8	(7)
Suriname	1999	13,4	(14)	15,4	(15)	18,1	(12)	28,6	(14)	18,5	(14)
Haiti	2001	21,7	(15)	12,7	(12)	35,4	(15)	30,2	(15)	24,6	(15)

Source: Authors' calculations based on Household Surveys.

An alternative strategy is to rely on poverty indexes computed by other studies. The World Bank has already computed many poverty rates for almost all LAC countries for 1990.[39] However, the same limitations mentioned in the previous paragraph apply to these indexes, too. We therefore proceed in the following way: (i) for those countries in which our poverty rates (for any given year) matches the World Bank's poverty rates (for the same year), we used the World Bank's 1990 poverty rates to define the MDG; (ii) in every other case, we set the MDG to be half of the poverty rate computed in 2000.[40] It should be noted that since we cannot be sure that the methodology applied in the World Bank's study is *exactly* the same as ours, we cannot ensure that both sets of results are strictly comparable.[41] Therefore, a word of caution is needed: comparisons between headcount ratios / poverty gaps with the MDG should be seen as informative of a trend but the actual difference between these two numbers will not accurately reflect the true situation and evolution of poverty in each country. Because of this, at the end of this section we abandon the use of this MDG and work as if the MDG was to halve by 2015 the poverty rates observed in 2000 (instead of halving the poverty rates observed in 1990). On the other hand, note that the comparison of poverty indexes by ethnicity is valid (because it uses the same household survey and the exact same method to compute poverty).

If we accept the MDG based on 1990 data, then only Chile and Costa Rica, the only two countries that have consistently ranked lower in poverty rates within the region, have achieved the MDG related to poverty (Graph 2.1). In the same Graph, we can observe the difference in poverty between white and non-white populations. According to all poverty lines, in almost every country white groups have lower poverty rates than non-white groups. For instance, the median ratio of non-white poverty to white poverty, when using one dollar a day is 2.2- when using two dollars a day, it is 1.8. - (Table 2.10). The only exceptions are

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[39] These indexes can be found in http://www.worldbank.org/research/povmonitor/

[40] Strictly speaking we define the MDG to be half of the poverty computed in the last available year in our study, which varies by country.

[41] Székely et al. (2000) found that poverty indexes are highly sensitive to the assumptions made in its computation. They checked the sensitivity of poverty indexes in LAC household surveys with respect to: (i) several assumptions made while computing these indexes (choice of adult equivalence scales, use of economies of scale in consumption, methods for treating missing and zero incomes, adjustments to handle income misreporting); and (ii) use of different poverty lines and poverty indexes. They basically change these parameters within somewhat reasonable boundaries, and find that the proportion of poor varies between 12.7 percent and 65.8 percent of the total population. The ranking of countries with respect to poverty is also highly sensitive.

Costa Rica and Haiti. These stylized facts are also observed when using
the two dollars a day poverty line (Graph 2.2). With this poverty line,
poverty rates among non-whites exceed 45% in ten out of fifteen
countries, but in only two countries, white populations have poverty
rates above that number. Graphs 2.3 and 2.4 show that poverty gaps are
also higher among non-white individuals when we use either one or
two dollar a day poverty rates (the only exception is Haiti).

Table 2.10
RATIO OF NON-WHITE POVERTY
TO WHITE POVERTY

POVERTY LINES	MEDIAN	AVERAGE	AVERAGE POP. WEIGHTED
1 USD per Day	2,19	2,76	2,46
2 USD per Day	1,80	2,27	2,30
50% of Median IPCF	2,17	2,23	2,28
Official Povery Line	1,52	1,67	1,92
Oficial Extreme Poverty Line	1,97	2,23	2,32

Graph 2.1
POVERTY RANKINGS - HEADCOUNT RATIO
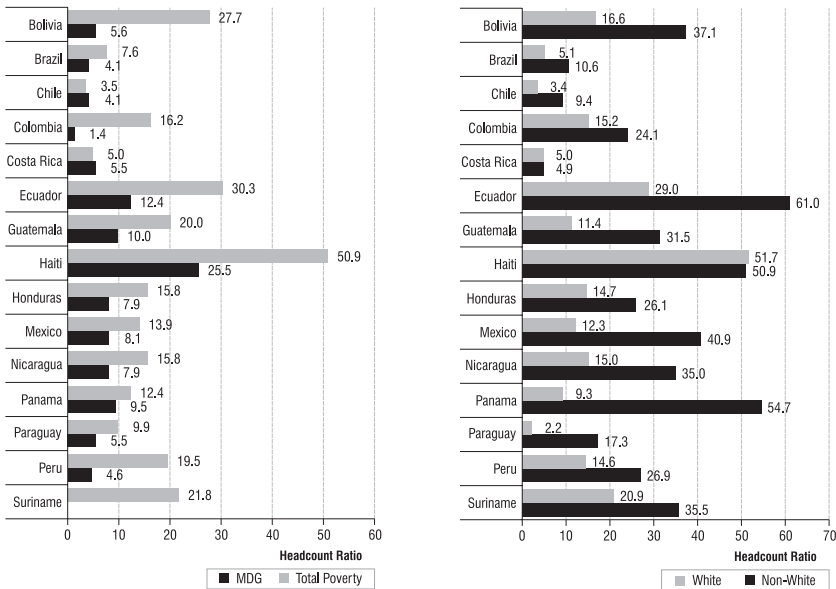
Graph 2.2
POVERTY RANKINGS - POVERTY GAP
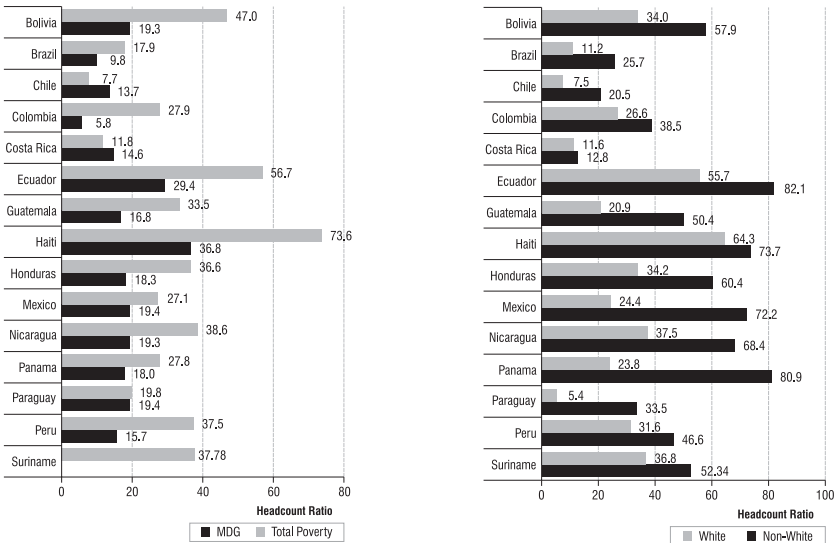
Graph 2.3
POVERTY RANKINGS - SEVERITY OF POVERTY
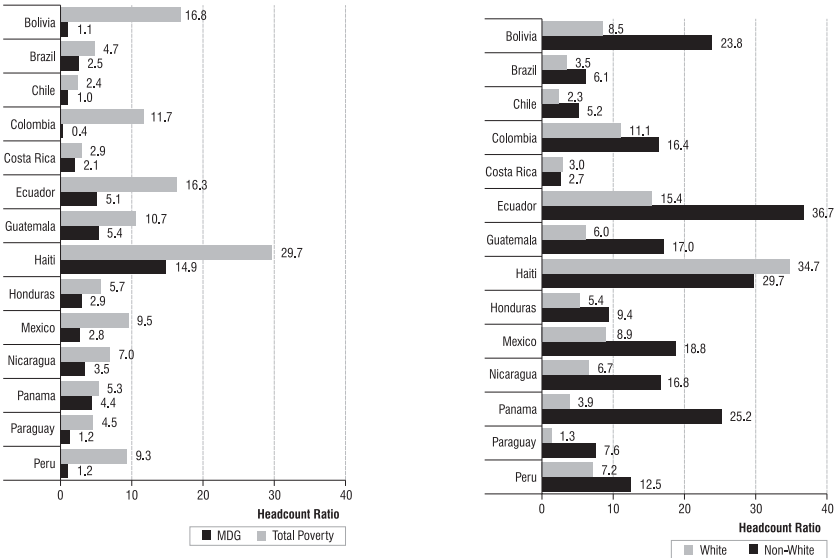
Graph 2.4
HEADCOUNT RATIO - 1 DOLLAR-A-DAY PPP
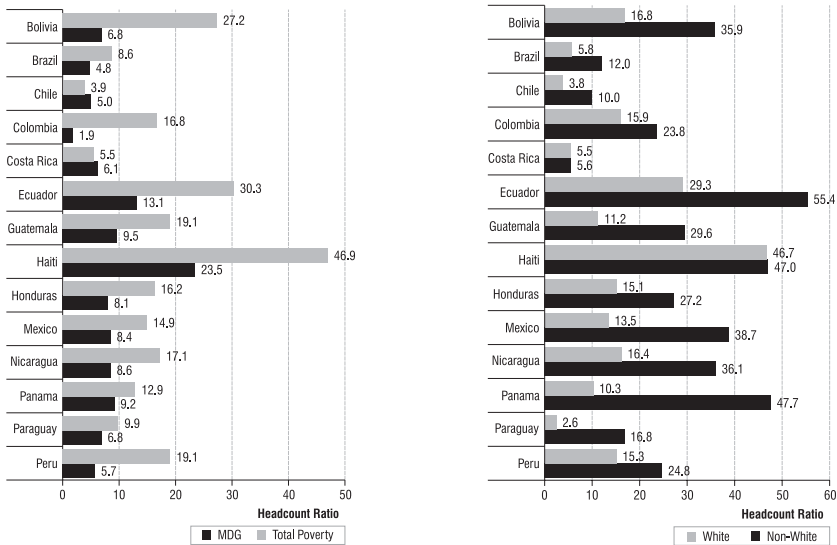
In conclusion, in almost every country included in our sample, poverty among non-white individuals is greater than poverty among white individuals. This conclusion is robust to the poverty line or the poverty index we choose to measure poverty.

Evolution of Poverty (by ethnicity). An important question then, is whether or not the situation of non-white individuals is improving over time. Unfortunately, we have two points in time for only six countries. In Graph 2.5 we observe that official extreme and moderate poverty have decreased for non-white groups in every country (except in Nicaragua) over the past few years. Essentially, the decline happened with an overall decline in poverty that affected the whole population.

Standard Errors. Most of the analysis focuses on comparisons of poverty outcomes between white and non-white groups, within groups across periods of time and between countries. Therefore, we will need a measure of how precise the estimate of poverty outcomes is. To assess this, we compute standard errors of poverty measures using bootstrapping; we do this for a selected number of measures and we find that the standard errors are small for all measures. In Tables 2.11 and 2.12, we present standard errors for headcount ratios and poverty

Graph 2.5
EVOLUTION OF POVERTY

Official Extreme Poverty Line

Official Poverty Line
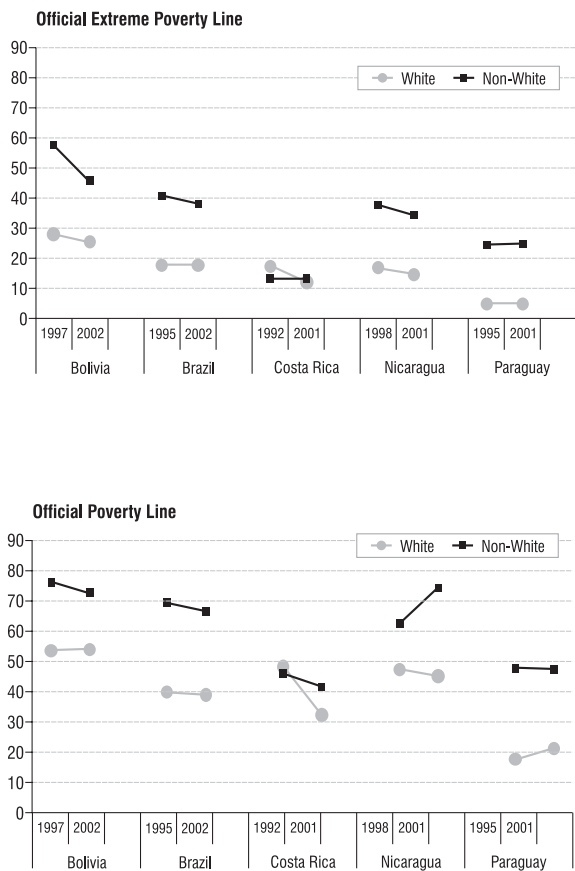
gaps calculated using both two dollars a day and 50% of the median poverty lines. Note that the difference between the lower and upper limits of the confidence intervals is in general less than 2% (except in the cases of white people in Haiti, non-white people in Nicaragua and Ecuador, and white and non-white people in Suriname). Also note that the confidence intervals of poverty rates of whites and non-whites only overlap in the cases of Costa Rica, Haiti and Suriname, which means that, excluding these three cases, whenever we claim that poverty among white and non-white differs, it will be true with a 95% level of confidence.

Table 2.11
BOOTSTRAP POVERTY INCIDENCE 95% CONFIDENCE INTERVALS
BY HOUSEHOLD PER CAPITA INCOME

COUNTRY	YEAR	2 USD PER DAY				50% OF MEDIAN IPCF			
		White	Non-White	White	Non-White	White	Non-White	White	Non-White
		Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Bolivia	1997	31,9	33,3	63,2	64,9	16,1	17,1	47,2	49,3
	2002	32,7	34,9	56,8	58,9	17,3	18,1	38,3	40,1
Brazil	1995	12,7	13,0	31,7	32,2	14,6	15,0	36,5	37,0
	2002	11,0	11,3	25,5	25,9	17,0	17,4	36,6	37,1
Chile	2000	7,4	7,7	19,3	21,7	20,9	21,3	37,9	41,7
Colombia	1999	26,2	27,0	37,9	39,5	25,3	26,0	36,0	37,9
Costa Rica	1992	20,5	21,6	15,7	18,0	20,9	22,1	16,1	18,5
	2001	11,3	12,1	11,8	13,9	20,7	21,7	28,5	31,0
Ecuador	1998	55,0	56,5	79,3	84,4	24,2	25,8	51,2	57,2
Guatemala	2002	19,7	22,4	48,0	52,7	15,3	19,1	41,3	45,5
Haiti	2001	57,3	69,6	73,2	74,2	33,7	45,3	30,0	31,3
Honduras	2003	33,8	34,9	58,7	62,4	22,2	23,0	39,6	43,1
Mexico	1992	26,2	27,3	76,6	80,8	20,4	21,4	71,4	76,2
	2002	23,9	24,9	70,1	73,6	22,4	23,5	68,3	71,9
Nicaragua	1998	41,9	43,9	56,3	64,0	27,4	28,8	42,7	51,8
	2001	35,2	36,8	63,8	70,7	20,8	21,9	48,8	57,1
Panama	2002	23,3	24,1	79,7	82,0	22,4	23,4	79,1	82,1
Paraguay	1995	6,8	7,9	42,2	44,4	10,2	11,3	48,9	51,2
	2001	4,9	5,9	32,5	34,5	7,7	9,9	41,8	44,5
Peru	2001	31,0	32,1	46,1	47,3	21,0	21,9	33,9	35,3
Suriname	1999	34,6	39,6	42,1	60,8	29,1	33,8	34,6	53,3

Source: Authors' calculations based on Household Surveys.

Living Conditions. Although access to sewage, safe water and hygienic restrooms is included as part of MDG 7[42], it also represents another facet of poverty; we thus find it appropriate to include an analysis of these conditions in this chapter.[43]

We compute the proportion of the population that has access to these services disaggregating by rural and urban areas. Graph 2.6 shows

[42] Ensure Environmental Sustainability.
[43] In fact, there are some definitions of poverty that are not related to income but instead to access to some services and to certain types of infrastructures.

Table 2.12
BOOTSTRAP POVERTY GAP 95% CONFIDENCE INTERVALS
BY HOUSEHOLD PER CAPITA INCOME

COUNTRY	YEAR	2 USD PER DAY				50% OF MEDIAN IPCF			
		White	Non-White	White	Non-White	White	Non-White	White	Non-White
		Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Bolivia	1997	15,4	16,1	43,4	44,9	8,4	9,0	33,3	35,1
	2002	16,2	17,3	34,8	36,5	8,7	9,7	24,3	26,1
Brazil	1995	5,5	5,7	13,9	14,2	6,7	6,9	17,0	17,3
	2002	5,7	5,9	11,9	12,1	7,9	8,1	17,0	17,3
Chile	2000	3,7	3,9	9,3	11,0	8,3	8,6	18,5	20,1
Colombia	1999	15,6	16,1	23,0	24,3	15,4	15,8	22,5	24,0
Costa Rica	1992	8,8	9,3	7,5	8,6	9,0	9,4	7,5	8,9
	2001	5,3	5,8	5,1	6,1	9,2	9,7	10,5	11,8
Ecuador	1998	28,8	29,8	53,7	58,3	13,0	13,8	30,5	36,4
Guatemala	2002	9,6	11,9	28,3	30,9	7,8	9,5	22,6	25,8
Haiti	2001	42,5	53,1	46,5	47,5	19,6	26,9	17,1	17,9
Honduras	2003	14,8	15,3	26,4	28,2	8,7	9,2	15,7	17,3
Mexico	1992	11,2	11,8	44,8	47,6	9,0	9,6	39,5	42,1
	2002	13,2	14,0	37,9	39,8	12,6	13,4	35,4	37,8
Nicaragua	1998	23,5	24,8	36,7	44,5	16,1	17,1	28,4	35,9
	2001	15,3	16,1	32,7	37,7	8,8	9,4	20,1	24,6
Panama	2002	10,1	10,6	46,7	49,0	9,7	10,2	45,4	47,8
Paraguay	1995	2,7	3,2	21,6	23,2	3,9	4,5	26,4	28,0
	2001	2,3	2,9	16,2	17,5	3,3	4,1	20,9	22,0
Peru	2001	14,9	15,6	24,4	25,4	9,9	10,5	17,2	18,1
Suriname	1999	20,7	24,8	23,5	35,7	16,8	20,1	18,2	30,1

Source: Authors' calculations based on Household Surveys.

our results and Table 2.13 provides more details. First, it should be noted that living conditions are, as expected, much better in urban than in rural areas both for white and non-white individuals. Take for instance the case of Bolivia: in urban areas, 93% of white individuals have access to safe water, 48% have access to sewage and 91% have access to hygienic restrooms, whereas in rural areas, these numbers are reduced to 56%, 4% and 50%, respectively. These differences are typical in the region (even in more developed countries such as Mexico). On average, people living in urban areas have 30% more access to sewage, 40% more access to safe water, and 50% more access to hygienic restrooms.

Grafp 2.6a
RURAL AREAS
CHARACTERISTICS

% of Households With Hygienic Restroom

■ White ■ Non-White

Country	White	Non-White
Bolivia	0.32	0.50
Brazil	0.09	0.25
Chile	0.08	0.33
Colombia	0.26	0.32
Ecuador	0.12	0.32
Guatemala	0.27	0.33
Honduras	0.02	0.17
Mexico	0.04	0.19
Nicaragua	0.02	
Paraguay	0.14	0.53
Peru	0.15	0.16

% of Households With Access to Sewage

■ White ■ Non-White

Country	White	Non-White
Bolivia	0.05	0.04
Brazil	0.03	0.05
Chile	0.01	0.04
Colombia	0.26	0.32
Ecuador	0.06	0.16
Guatemala		
Honduras	0.00	0.05
Mexico	0.01	0.09
Nicaragua		
Paraguay	0.00	0.00
Peru	0.03	0.06

% of Households With Access to Water

■ White ■ Non-White

Country	White	Non-White
Bolivia	0.52	0.56
Brazil	0.73	0.88
Chile	0.31	0.60
Colombia	0.61	0.62
Ecuador	0.82	0.49
Guatemala	0.72	0.64
Honduras	0.58	0.66
Mexico	0.72	0.69
Nicaragua	0.00	0.27
Paraguay	0.80	0.89
Peru	0.37	0.34

Grafp 2.6b
URBAN AREAS
CHARACTERISTICS

Chart 1 — % of Households With Hygienic Restroom

Country	White	Non-White
Bolivia	0.75	0.91
Brazil	0.65	0.83
Chile	0.91	0.94
Colombia	0.74	0.94
Ecuador	0.84	0.80
Guatemala	0.76	0.91
Honduras	0.36	0.68
Mexico	0.27	0.69
Nicaragua	0.11	0.35
Paraguay	0.58	0.89
Peru	0.72	0.80

Chart 2 — % of Households With Access to Sewage

Country	White	Non-White
Bolivia	0.59	0.48
Brazil	0.42	0.59
Chile	0.87	0.89
Colombia	0.74	0.94
Ecuador	0.82	0.74
Guatemala		
Honduras	0.34	0.57
Mexico	0.16	0.65
Nicaragua	0.03	0.26
Paraguay	0.05	0.22
Peru	0.64	0.75

Chart 3 — % of Households With Access to Water

Country	White	Non-White
Bolivia	0.86	0.93
Brazil	0.97	0.99
Chile	0.98	0.99
Colombia	0.95	0.99
Ecuador	0.90	0.85
Guatemala	0.85	0.94
Honduras	0.92	0.92
Mexico	0.86	0.96
Nicaragua	0.37	0.84
Paraguay	0.97	0.99
Peru	0.74	0.81

Table 2.13
LIVING CONDITIONS (MDG 7)

COUNTRY	YEAR	% OF HOUSEHOLD WITH ACCESS TO WATER				% OF HOUSEHOLD WITH ACCESS TO SEWAGE				% OF HOUSEHOLD WITH HYGIENIC RESTROOM			
		Urban		Rural		Urban		Rural		Urban		Rural	
		White (i)	Non-White (ii)	White (i)	Non-White (ii)	White (i)	Non-White (ii)	White (i)	Non-White (ii)	White (i)	Non-White (ii)	White (i)	Non-White (ii)
Bolivia	1997	0,37	0,26	0,90	0,84	0,05	0,05	0,52	0,68	0,06	0,01	0,46	0,22
	2002	0,56	0,52	0,93	0,86	0,04	0,05	0,48	0,59	0,50	0,32	0,91	0,75
Brazil	1995	0,88	0,69	0,99	0,94	0,04	0,03	0,55	0,33	0,20	0,08	0,79	0,55
	2002	0,88	0,73	0,99	0,97	0,05	0,03	0,59	0,42	0,25	0,09	0,83	0,65
Chile	2000	0,60	0,31	0,99	0,98	0,04	0,01	0,89	0,87	0,33	0,08	0,94	0,91
Colombia	1999	0,62	0,61	0,99	0,95	0,32	0,26	0,94	0,74	0,32	0,26	0,94	0,74
Costa Rica	1992	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Ecuador	1998	0,49	0,82	0,85	0,90	0,16	0,06	0,74	0,82	0,32	0,12	0,80	0,84
Guatemala	2002	0,64	0,72	0,94	0,85	n.a	n.a	n.a	n.a	0,33	0,27	0,91	0,76
Haiti	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Honduras	2003	0,66	0,58	0,92	0,92	0,05	0,00	0,06	0,34	0,17	0,02	0,68	0,36
Mexico	1992	0,68	0,36	0,93	0,80	0,04	0,00	0,71	0,26	0,24	0,10	0,81	0,40
	2002	0,69	0,72	0,96	0,86	0,09	0,01	0,65	0,16	0,19	0,04	0,69	0,27
Nicaragua	1998	0,30	0,03	0,84	0,49	n.a	n.a	n.a	n.a	0,02	n.a	0,37	0,04
	2001	0,27	0,00	0,84	0,37	n.a	n.a	0,26	0,03	0,02	n.a	0,35	0,11
Panama	2002	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Paraguay	1995	0,60	0,63	0,84	0,79	0,00	0,00	0,23	0,02	0,43	0,11	0,85	0,37
	2001	0,89	0,80	0,99	0,97	0,00	0,00	0,22	0,05	0,53	0,14	0,89	0,58
Peru	2001	0,34	0,37	0,81	0,74	0,06	0,03	0,75	0,64	0,16	0,15	0,80	0,72
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Similarly to what was observed when poverty was measured by income, there are also differences in living conditions by ethnicity. Our results show that in urban areas, white people in general are more likely to have access to safe water than non-white individuals. Note, however, that differences are sometimes small (as in Brazil, Chile and Honduras) and in Ecuador, the opposite was found to be true. Differences are much more important regarding access to hygienic restrooms: on average, white individuals in LAC have 20% more access than non-white individuals. In some countries, this difference is extremely high (e.g. Mexico, Honduras and Paraguay), whereas in others, this difference is small (Chile, Peru or Ecuador). A similar pattern is observed with respect to access to sewage.

In rural areas, differences are smaller. Although in Chile, white individuals seem to have more chances of having access to water (30% more), the difference in the rest of the countries is rather small and in some cases, reversed. It is worth noting though, that the definition of "safe water" can affect the response. Essentially, in rural areas, people can provide for their own water without using public infrastructure, still having access to safe water, yet being classified as if they do not. A similar problem occurs with sewage service, which is a rare case in rural areas of LAC. A more reliable indicator, therefore, is the proportion of people with access to hygienic restrooms. In this case, we do observe differences between white and non-white people who average 15% in the region, with some countries having a difference of above 20% (Chile, Paraguay and Ecuador), and others having a difference that is almost irrelevant (Guatemala, Peru, Nicaragua).

3.   Some Explanations for Differences in Poverty among Ethnic Groups

In conclusion, indigenous and afro-descendant people tend to be poorer and have worse living conditions than white individuals. These facts are robust in the sense that they do not depend on which index, poverty line or definition of income we use to compute poverty. Also, differences are, in general, statistically significant. Indeed, there exist several, most likely complementary explanations. In this chapter we will focus on two of them: first we will analyze how income distribution (its inequality and mean) can affect poverty, and then, we will analyze if the existence of discrimination can explain the difference in poverty.

Mean Income and Inequality. There is a somewhat straightforward relation between the poverty, inequality and mean income of an

economy. In general, a lower mean income and more unequal distributions will be associated with higher poverty (holding the income distribution or mean income constant, respectively). In Graph 2.7, we explore this relation in our cross section of countries. We plot the mean household per capita income against the observed headcount ratio. As expected, for both groups, we find a negative relation between mean income and poverty.

Graph 2.7
POVERTY AND MEAN INCOME
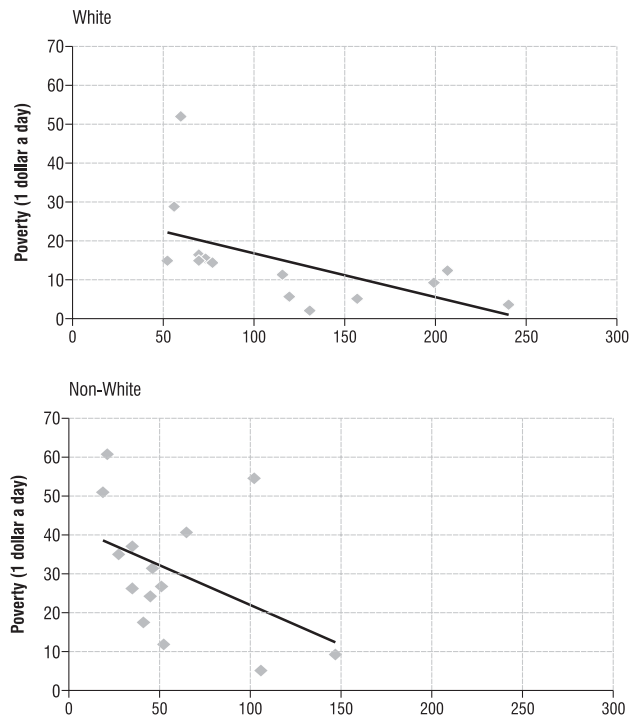
We can also expect differences in poverty rates between whites and non-whites to be associated with differences in mean income between these two groups. Indeed, in every LAC country, white individuals tend to have, on average, a higher mean household per capita income and higher hourly wages than non-white people (Graph 2.8). This graph also shows the important difference in mean income across countries. Note that countries with high mean incomes are ranked lower in terms of poverty.

Graph 2.8
MEAN HOUSEHOLD PER CAPITA INCOME AND MEAN
HOURLY REAL WAGE

Mean Household Per Capita Real Income

Mean Hourly Real Wage
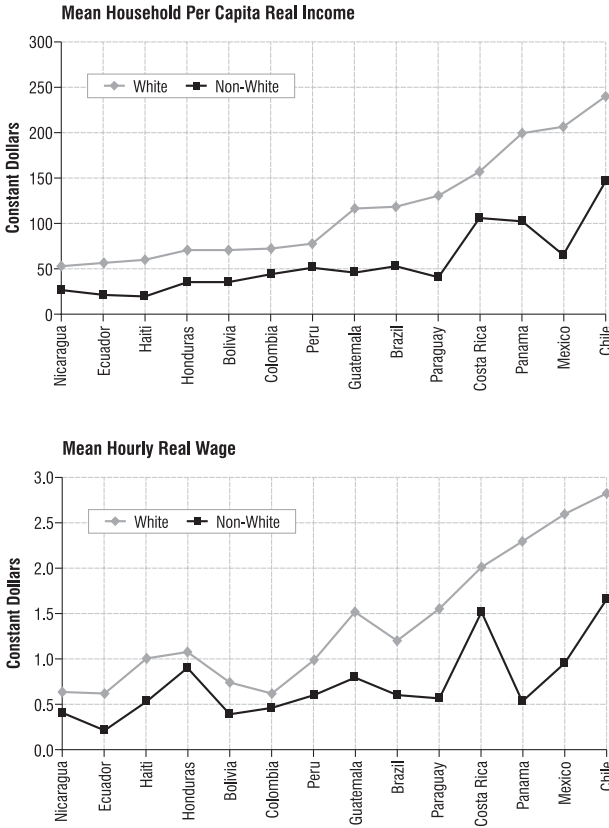
Graph 2.9 shows the relation between mean incomes of whites and non-whites. On average, white individuals in LAC countries tend to earn twice as much as non-white individuals. This might be explained because white individuals have more human capital that allows them to obtain more productive jobs, and therefore, earn higher salaries. Alternatively, this can be the result of some type of discrimination, in the sense that although both whites and non-whites have the same stock of human capital, yet the market pays a higher wage to white individuals. Of course, both explanations can be operating at the same time.

More unequal distributions are also associated with higher levels of poverty. Graph 2.10 plots headcount ratios (for several poverty lines)

Graph 2.9
WHITES' AND NON-WHITES' MEAN INCOMES
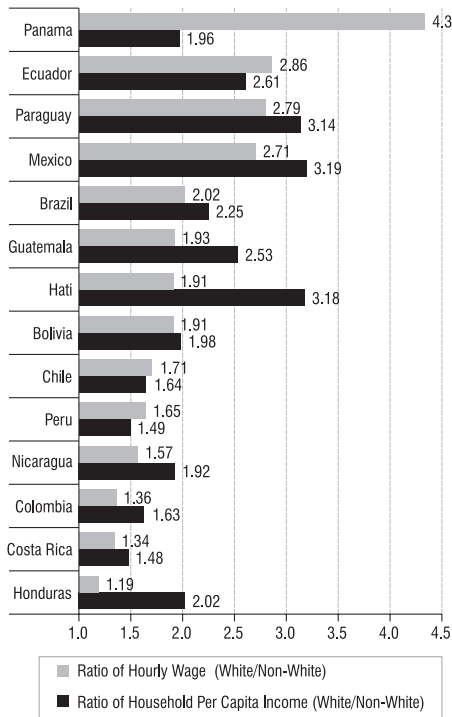
against different standard measures of income inequality: Gini's index, Theil's index, and components of Theil's index that measure inequality within and between white and non-white groups. Although our sample is small, we find that more unequal distributions are associated with higher levels of poverty (and the relation seems to hold independently of which measure of inequality or of poverty we choose).

In conclusion, higher levels of income and lower levels of inequality seem to be associated (in our cross-section of countries) with lower levels of poverty. These findings are consistent with evidence for the rest of the world. Besley and Burguess (2003) find, using a large sample of countries, two similar results: (i) increments in mean income (i.e. growth) can reduce poverty (on average, it would require a 3.8% rate of growth over 25 years to halve global poverty); and (ii) lowering the level of income inequality in each region of the world by one standard deviation would reduce poverty by about 67%. In Chapter 5, we will implement some simulations to further explore these relations.

Graph 2.10
POVERTY AND INEQUALITY
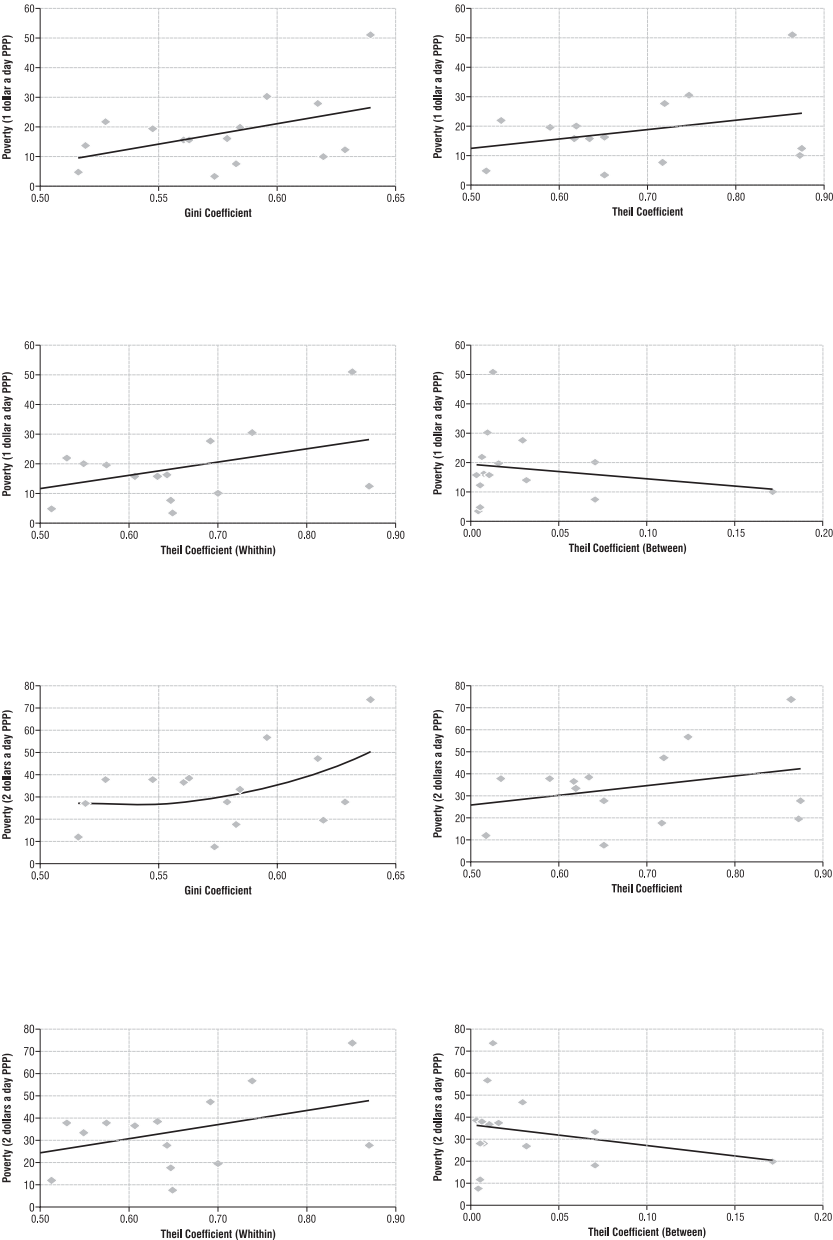
Graph 2.10
POVERTY AND INEQUALITY
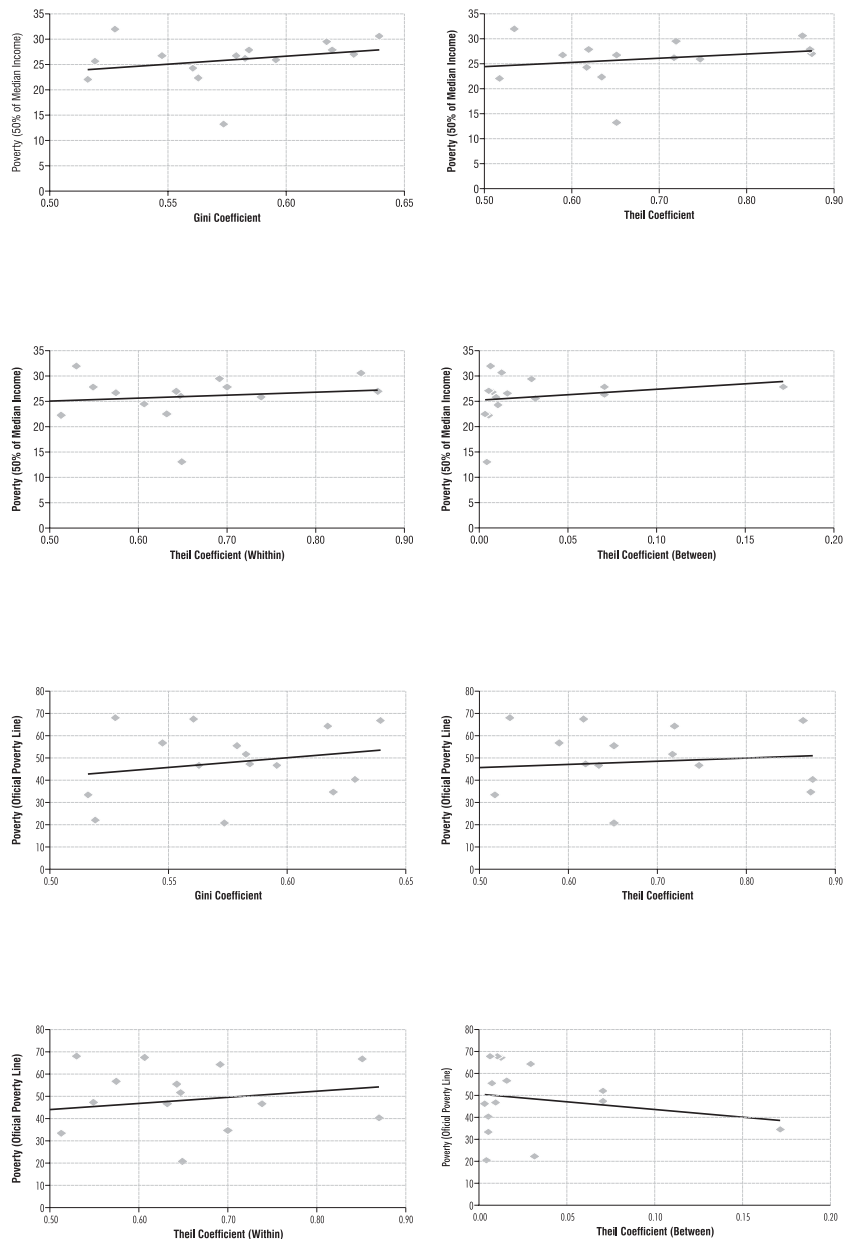
Ethnic Discrimination in the Labor Market. Differences in poverty between indigenous/ afro-descendant and white individuals can also be explained by other factors. Essentially, it can be thought that the wage earned by each worker is a function of his or her stock of human capital and how much the market values those resources. Since in competitive markets labor is paid according to its marginal productivity, differences in wages earned by individuals who are equally productive can be regarded as a form of discrimination. Oaxaca (1973) establishes the basic methodology to measure this type of discrimination by deriving a decomposition technique that simulates a counterfactual distribution by combining data on individual characteristics from one group (e.g. non-white people), with estimated parameters from a wage (i.e. Mincer) equation from another (e.g. white people). We use a generalization of this methodology, known as microeconometric decompositions, in Chapter 6.

In this section, we implement a simpler strategy to assess the existence of ethnic discrimination. We essentially estimate wage equations, where we regress the log of wage on: (i) a dummy that defines ethnicity, taking the value of one if the individual is non-white and zero otherwise and (ii) several control variables: age, education, gender, and place where the individual lives (i.e. urban dummy). The coefficient associated with ethnicity tells us how much more an individual expects to earn if he/she is non-white holding constant the other characteristics (e.g. for a given level of human capital). A negative coefficient means that the expected wage is reduced because of being non-white.

Table 2.14 shows our results. The first three columns report the coefficient associated with ethnicity for different samples and the other columns report the robust t-statistic of those coefficients. In Graph 2.11, we plot them against the headcount ratio. We find that lower coefficients (i.e. more discrimination) are associated with higher poverty among non-white individuals and are also associated with lower poverty among white individuals (although this latter relation is small). This evidence suggests the existence of discrimination. In Chapter 6, we explore it in a more rigorous fashion.

     In the next chapter, we explore a third explanation for differences in poverty between white and non-white individuals: differences in educational achievement.

Table 2.14
ETHNIC DISCRIMINATION
(DIFFERENCE IN THE CONDITIONAL EXPECTATION OF LOG HOURLY WAGES
BETWEEN WHITE AND NON-WHITE INDIVIDUALS)

COUNTRY	YEAR	COEFFICIENTS			ROBUST WHITE T-STATISTICS		
		Household Heads	Household Non-Heads	All	Household Heads	Household Non-Heads	All
Bolivia	1997	-0,408	-0,225	-0,345	[14,93]**	[7,37]**	[16,66]**
	2002	-0,401	-0,229	-0,331	[11,40]**	[6,21]**	[12,86]**
Brazil	1995	-0,283	-0,256	-0,273	[38,32]**	[39,56]**	55,48]**
	2002	-0,256	-0,223	-0,241	[42,75]**	[39,56]**	[58,10]**
Chile	2000	-0,204	-0,145	-0,174	[9,76]**	[5,52]**	[10,58]**
Colombia	1999	0,002	0,024	0,015	[0,09]	[1,02]	[0,96]
Costa Rica	1992	0,274	0,195	0,249	[12,19]**	[7,19]**	[14,39]**
	2001	-0,079	-0,088	-0,078	[3,63]**	[3,19]**	[4,53]**
Ecuador	1998	-0,462	-0,271	-0,391	[5,07]**	[2,62]**	[5,63]**
Guatemala	2002	-0,316	-0,176	-0,239	[6,75]**	[3,92]**	[7,30]**
Haiti	2001	n.a	n.a	n.a	n.a	n.a	n.a
Honduras	2003	0,410	0,493	0,448	[9,11]**	[9,55]**	[13,19]**
Mexico	1992	-0,597	-0,673	-0,614	[11,51]**	[10,20]**	[15,01]**
	2002	-0,649	-0,595	-0,622	[19,23]**	[16,85]**	[25,40]**
Nicaragua	1998	-0,289	0,226	-0,067	[2,82]**	[2,28]*	[0,88]
	2001	-0,240	0,268	-0,028	[2,15]*	[2,36]*	[0,33]
Panama	2002	-0,583	-0,548	-0,566	[9,29]**	[8,16]**	[12,33]**
Paraguay	1995	-0,403	-0,254	-0,333	[10,07]**	[6,70]**	[12,09]**
	2001	-0,480	-0,246	-0,358	[16,50]**	[10,16]**	[19,10]**
Peru	2001	-0,119	-0,091	-0,112	[6,24]**	[4,77]**	[8,30]**
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Graph 2.11
POVERTY AND DISCRIMINATION IN THE LABOR MARKET
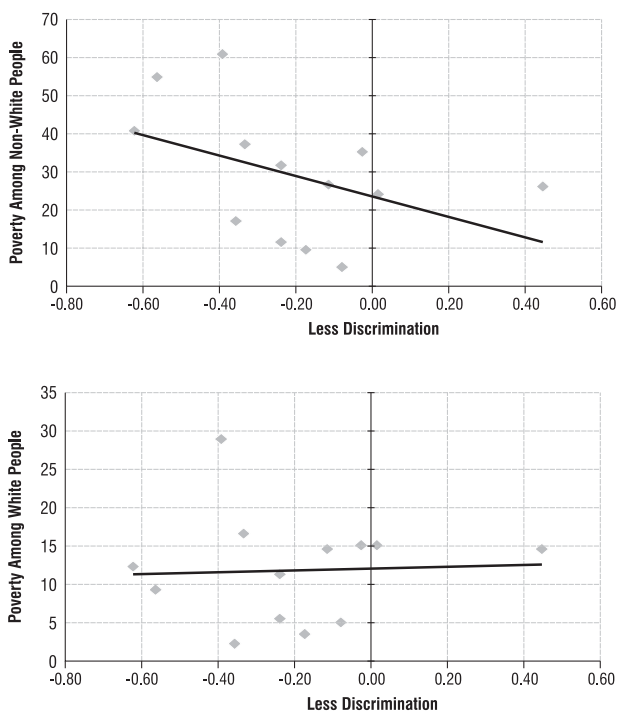
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Chapter 3: Improving Educational Outcomes[*] (MDG 2)

Poverty in Latin America and the Caribbean countries is high. Moreover, almost in all cases, poverty is higher among indigenous and afro-descendant people than among white individuals. Indeed, poverty is related to the ability to generate income and this, in turn, is determined by the human capital of each individual; more educated people will be able to generate more income, and thus, escape poverty.

The Millennium Development Goals focus explicitly on educational outcomes of current students, especially of those children who are (or should be) in primary school. Here, we will not focus on differences between gender (MDG 3); we shall postpone that discussion for the next chapter.

In this chapter, we first analyze educational outcomes from several perspectives, always stressing the analysis of differences by ethnicity. We compute literacy rates, enrollment rates for different age-groups and educational levels and what is known as "school gaps". We come to two important conclusions. First, we find that for children of primary school age, differences by ethnicity in all these outcomes are not quantitatively important. That being said, however, it is also true that in some countries differences do exist and should be addressed. Secondly, we find that differences by ethnicity in educational outcomes do exist for individuals of secondary school and college age.

We then try to assess possible causes for these differences. First, by estimating binary choice models, we compute a set of coefficients associated with discrimination regarding the access to education. We then implement a methodology to study educational mobility that helps us determine whether or not the current educational system allows individuals without monetary resources to access education. Finally,

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[*] All the tables included in this chapter can be downloaded from www.depeco.econo.unlp.edu.ar/cedlas

studying the cases of Brazil and Bolivia, we try to answer if whites have
more incentives to receive education than non-whites, because, when
facing the decision of entering school, white individuals perceive a higher
return to education.

1. Education in LAC

In this section, we compute educational statistics stressing
differences between white and non-white groups. We calculate literacy
rates, enrollment rates, and school gaps, where only the first two are
explicitly considered as indicators in MDG 2.

Literacy Rates

The literacy rate of the 15-24 age-group, or the youth literacy rate,
is defined as the percentage of the population aged 15–24 years, which
can both read and write and understand a short simple statement on
everyday life. This indicator corresponds to the millennium target 3
necessary to reach Goal 2 (achieve universal primary education). The
rationale for including the youth literacy rate is that it reflects the
outcomes of primary education over the previous 10 years or so. As a
measure of the effectiveness of the primary education system, it is often
seen as a proxy measure of social progress and economic achievement.

We compute literacy rates as the proportion of people who read and
write against the total population. We calculate this indicator for two age-
groups: 15-24 and 10-65. Only the former is considered as an indicator
towards achieving MDG 2. The last is broader and, when compared to the
former, allows a raw assessment of the temporal evolution of literacy rates.

Literacy rates do differ among Latin American and Caribbean
countries. We find that Haiti, Peru, Ecuador, Nicaragua, and Guatemala
have relatively lower youth literacy rates (see Table 3.1). The highest youth
literacy rates in the region are those of Chile, Mexico and Costa Rica.

Inside each country, literacy rates are always higher for white
people, both for the 10-65 and 15-24 age-groups (Graph 3.1).[44] Comparing
estimates for the 10-65 and 15-24 age-groups shows that differences
between ethnic groups are narrower in the last case. In Panama, for
example, this difference is 30 percentage points for the former age-group
and 20 percentage points for the last age-group.

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[44] For the 15-24 age-group, the only exception is Ecuador.

Table 3.1
LITERACY RATES (MDG 2)

COUNTRY	YEAR	[10-65]			[15-24]		
		White (i)	Non-White (ii)	Total (iii)	White (iv)	Non-White (v)	Total (vi)
Bolivia	1997	0,96	0,82	0,89	0,99	0,95	0,97
	2002	0,96	0,87	0,92	0,99	0,97	0,98
Brazil	1995	0,93	0,80	0,87	0,96	0,89	0,93
	2002	0,95	0,87	0,91	0,98	0,95	0,96
Chile	2000	0,85	0,83	0,85	0,99	0,99	0,99
Colombia	1999	0,94	0,89	0,94	0,98	0,95	0,97
Costa Rica	1992	0,94	0,90	0,94	0,98	0,97	0,98
	2001	0,95	0,92	0,95	0,98	0,96	0,98
Ecuador	1998	0,76	0,49	0,74	0,71	0,75	0,72
Guatemala	2002	0,85	0,65	0,77	0,92	0,77	0,86
Haiti	2001	0,64	0,56	0,57	n.a	n.a	0,77
Honduras	2003	0,87	0,76	0,86	0,91	0,86	0,91
Mexico	1992	0,93	0,68	0,92	0,97	0,80	0,97
	2002	0,94	0,79	0,93	0,98	0,93	0,98
Nicaragua	1998	0,81	0,84	0,81	0,85	0,91	0,86
	2001	0,82	0,72	0,81	0,87	0,79	0,86
Panama	2002	0,96	0,66	0,94	0,98	0,78	0,97
Paraguay	1995	0,92	0,79	0,86	0,95	0,92	0,94
	2001	0,97	0,89	0,93	0,98	0,93	0,96
Peru	2001	0,73	0,64	0,69	0,72	0,71	0,72
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

In countries where we have information for two years, we see that literacy rates for non-whites have been converging to those of whites. For instance, literacy rates for whites and indigenous people aged 15-24 in Mexico were 97 and 80 percent in 1992, and 98 and 93 percent in 2002, respectively.

Although literacy rates are important indicators of people's human capital, they might not accurately reflect it. In what follows, we compute enrollment rates.

Enrollment Rates

The Millennium Development Goal 2 only refers to primary education, focusing on the net enrollment ration in primary education. This indicator is defined as the ratio of the number of children of school

Graph 3.1
LITERACY RATES
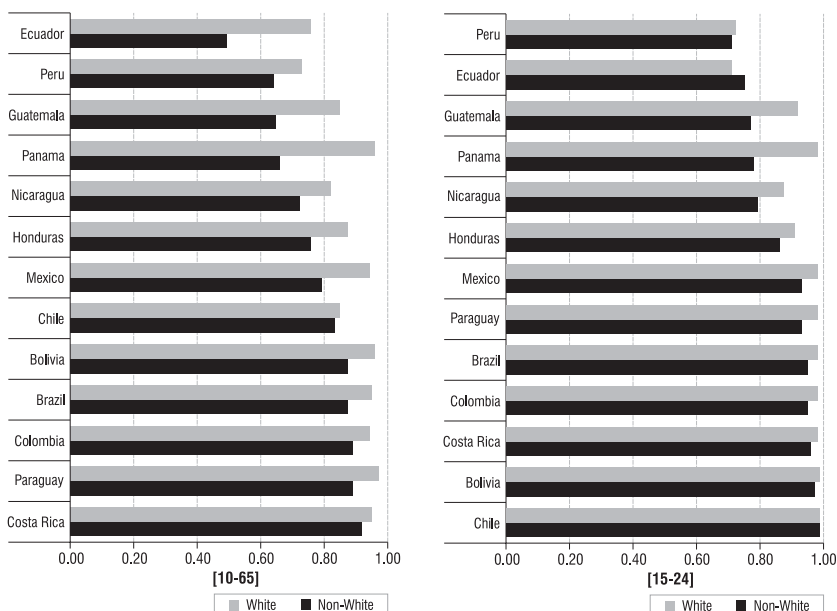
age who are enrolled in primary school to the total population of children of school age. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music.

We computed enrollment rates not only for the primary educational level but also for secondary school and college. In Table 3.2 we compute enrollment rates simply as the number of enrolled students within an age cohort divided by the number of individuals of the same age. In Table 3.3, on the other hand, we present net enrollment rates calculated using the MDG 2 definition. We consider the following age cohorts for each educational level: 6-12 for primary, 13-17 for secondary, and 18-30 for tertiary. In columns (iv)-(vi) and (x)-(xii) we consider only those young people who have finished the previous educational level.[45] Graph 3.2 shows the net enrollment rates by ethnicity for the last available years that correspond to those in Table 3.3.

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[45] Column (vi) indicates, for example, that 87% of the Peruvian teenagers with complete primary education are enrolled in the secondary educational level.

Table 3.2
ENROLLMENT RATES (MDG 2)
BY HOUSEHOLD EQUIVALENT INCOME

| COUNTRY	YEAR	[4-5] White (i)	[4-5] Non-White (ii)	[4-5] Total (iii)	[6-12] White (iv)	[6-12] Non-White (v)	[6-12] Total (vi)	[13-15] White (vii)	[13-15] Non-White (viii)	[13-15] Total (ix)	[16-18] White (x)	[16-18] Non-White (xi)	[16-18] Total (xii)	[19-24] White (xiii)	[19-24] Non-White (xiv)	[19-24] Total (xv)	[25-30] White (xvi)	[25-30] Non-White (xvii)	[25-30] Total (xviii)
Bolivia	1997	0.51	0.34	0.47	0.95	0.90	0.93	0.90	0.77	0.85	0.76	0.50	0.67	0.47	0.18	0.36	0.06	0.02	0.04
	2002	0.59	0.48	0.53	0.95	0.93	0.94	0.90	0.84	0.87	0.73	0.66	0.70	0.44	0.33	0.39	0.09	0.05	0.07
Brazil	1995	0.56	0.50	0.53	0.93	0.86	0.90	0.85	0.79	0.82	0.62	0.53	0.57	0.26	0.21	0.23	0.03	0.03	0.03
	2002	0.70	0.64	0.67	0.97	0.95	0.96	0.94	0.92	0.93	0.74	0.68	0.71	0.33	0.27	0.30	0.06	0.06	0.06
Chile	2000	0.72	0.57	0.72	0.99	0.98	0.99	0.96	0.95	0.96	0.77	0.68	0.77	0.31	0.19	0.31	0.02	0.01	0.02
Colombia	1999	0.68	0.67	0.68	0.91	0.90	0.91	0.80	0.80	0.80	0.56	0.47	0.55	0.24	0.16	0.23	0.03	0.03	0.03
Costa Rica	1992	0.08	0.03	0.08	0.90	0.85	0.89	0.73	0.58	0.71	0.47	0.33	0.46	0.24	0.11	0.23	0.04	0.02	0.04
	2001	0.45	0.31	0.44	0.97	0.97	0.97	0.79	0.70	0.78	0.59	0.51	0.58	0.35	0.18	0.33	0.06	0.03	0.06
Ecuador	1998	0.63	0.39	0.61	0.93	0.87	0.92	0.71	0.53	0.71	0.52	0.19	0.51	0.23	0.10	0.22	0.03	0.02	0.03
Guatemala	2002	n.a.	n.a.	n.a.	0.88	0.77	0.83	0.70	0.55	0.63	0.45	0.24	0.36	0.21	0.12	0.17	0.04	0.02	0.03
Haiti	2001	n.a.	n.a.	0.04	n.a.	0.78	0.78	n.a.	0.79	0.79	n.a.	0.69	0.69	n.a.	0.34	0.34	n.a.	0.02	0.02
Honduras	2003	0.36	0.36	0.36	0.88	0.84	0.88	0.67	0.55	0.66	0.43	0.28	0.41	0.22	0.13	0.21	0.04	0.03	0.04
Mexico	1992	0.63	0.43	0.62	0.94	0.82	0.93	0.73	0.59	0.72	0.42	0.24	0.42	0.19	0.04	0.19	0.02	0.01	0.02
	2002	0.85	0.78	0.84	0.97	0.98	0.97	0.81	0.79	0.81	0.51	0.40	0.50	0.25	0.11	0.24	0.02	0.01	0.02
Nicaragua	1998	0.56	0.31	0.55	0.84	0.82	0.84	0.69	0.73	0.69	0.44	0.42	0.44	0.22	0.23	0.22	0.04	0.03	0.04
	2001	0.60	0.27	0.58	0.87	0.76	0.86	0.77	0.82	0.77	0.48	0.52	0.48	0.25	0.16	0.25	0.03	0.05	0.03
Panama	2002	0.63	0.40	0.61	0.98	0.85	0.96	0.88	0.58	0.86	0.68	0.22	0.65	0.32	0.03	0.30	0.06	0.02	0.06
Paraguay	1995	0.47	0.13	0.29	0.92	0.86	0.89	0.79	0.59	0.69	0.58	0.23	0.42	0.23	0.06	0.16	0.05	0.01	0.03
	2001	0.56	0.50	0.53	0.96	0.92	0.94	0.89	0.71	0.80	0.69	0.41	0.56	0.32	0.15	0.24	0.09	0.02	0.06
Peru	2001	0.79	0.71	0.76	0.96	0.97	0.97	0.87	0.91	0.89	0.58	0.65	0.61	0.25	0.25	0.25	0.02	0.02	0.02
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on Household Surveys.

Table 3.3
NET ENROLLMENT RATES (MDG2)
IN EACH EDUCATIONAL LEVEL

COUNTRY	YEAR	PRIMARY			SECONDARY*			SECONDARY			TERTIARY*			TERTIARY		
		White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)
Bolivia	1997	0,95	0,90	0,93	0,94	0,89	0,93	0,48	0,26	0,40	0,53	0,39	0,50	0,23	0,07	0,17
Brazil	2002	0,95	0,93	0,94	0,94	0,94	0,94	0,49	0,41	0,46	0,54	0,51	0,53	0,24	0,14	0,19
	1995	0,93	0,87	0,90	0,92	0,88	0,91	0,20	0,07	0,14	0,29	0,14	0,25	0,06	0,02	0,04
Chile	2002	0,97	0,95	0,96	0,94	0,92	0,93	0,33	0,18	0,26	0,33	0,17	0,27	0,12	0,04	0,08
	2000	0,99	0,98	0,99	0,93	0,89	0,93	0,53	0,44	0,53	0,30	0,20	0,30	0,14	0,07	0,14
Colombia	1999	0,90	0,89	0,90	0,80	0,77	0,80	0,66	0,55	0,65	0,30	0,20	0,30	0,11	0,05	0,11
Costa Rica	1992	0,90	0,85	0,89	0,67	0,52	0,66	0,52	0,33	0,51	0,43	0,26	0,42	0,12	0,04	0,11
	2001	0,96	0,96	0,96	0,76	0,67	0,76	0,61	0,47	0,60	0,54	0,41	0,53	0,14	0,05	0,13
Ecuador	1998	0,92	0,87	0,92	0,69	0,39	0,68	0,58	0,28	0,57	0,33	0,42	0,33	0,09	0,02	0,09
Guatemala	2002	0,88	0,77	0,83	0,73	0,66	0,71	0,43	0,18	0,32	0,41	0,53	0,44	0,10	0,05	0,08
Haiti	2001	n.a.	0,74	0,74	n.a.	0,89	0,89	n.a.	0,22	0,22	n.a.	0,21	0,20	n.a.	0,01	0,01
Honduras	2003	0,88	0,84	0,87	0,61	0,41	0,60	0,37	0,17	0,35	0,50	0,31	0,49	0,07	0,01	0,06
Mexico	1992	0,94	0,81	0,93	0,67	0,47	0,66	0,54	0,22	0,53	0,48	0,10	0,47	0,07	0,00	0,07
	2002	0,97	0,98	0,97	0,74	0,73	0,74	0,68	0,62	0,67	0,69	0,62	0,69	0,08	0,01	0,08
Nicaragua	1998	0,84	0,82	0,84	0,78	0,65	0,78	0,39	0,24	0,38	0,48	0,61	0,48	0,07	0,06	0,07
	2001	0,89	0,81	0,89	0,79	0,82	0,79	0,44	0,21	0,43	0,54	0,54	0,54	0,01	0,03	0,1
Panama	2002	0,98	0,85	0,96	0,85	0,44	0,83	0,76	0,21	0,72	0,43	0,26	0,43	0,18	0,01	0,17
Paraguay	1995	0,92	0,86	0,89	0,78	0,49	0,66	0,57	0,25	0,41	0,32	0,17	0,30	0,09	0,01	0,06
	2001	0,95	0,91	0,93	0,89	0,70	0,81	0,74	0,45	0,59	0,41	0,34	0,40	0,16	0,04	0,11
Peru	2001	0,96	0,97	0,97	0,85	0,91	0,87	0,66	0,69	0,67	0,28	0,29	0,28	0,13	0,12	0,12
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on Household Surveys
* Conditional on having finished the previous level.

Graph 3.2
NET ENROLLMENT RATES IN EACH EDUCATION LEVEL

Primary

White ▪ Non-White

Secondary

White ▪ Non-White

Tertiary

White ▪ Non-White
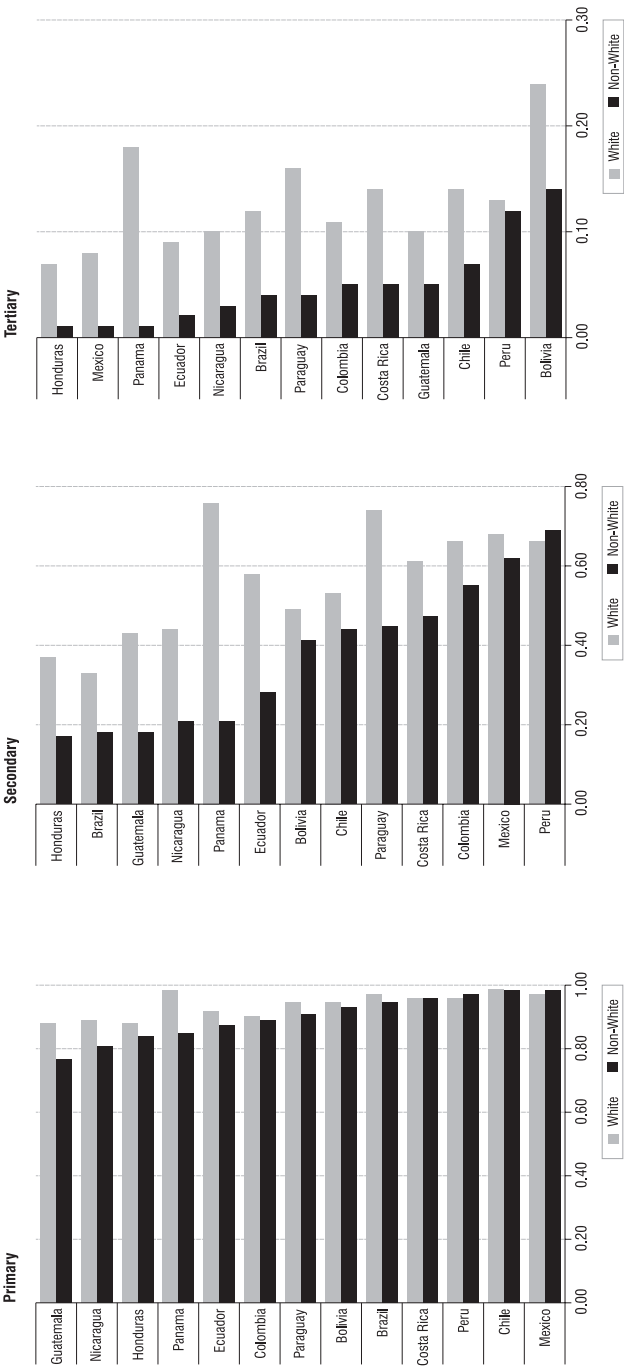
Primary. The MDG 2 refers to this school level. The graph indicates, for example, that among whites and indigenous children in Guatemala aged 6-12, 88 and 77 percent attended school in 2002, respectively. The gap in primary school attendance rate for whites and non-whites is relatively important only in Panama and Guatemala, with 13 and 11 percentage points, respectively.

Table 3.3 shows that primary school enrollment rates have been increasing during the past decade in LAC countries for which we have information. At the same time, the gap between whites and non-whites has narrowed.[46] The figures show that most LAC countries are doing well to accomplish the MDG 2. In fact, some of them (e.g. Chile, Costa Rica and Mexico) have nearly achieved full enrollment.

Secondary. The current situation for this educational level is quite different from that of the previous level. Secondary school attendance rates vary widely among LAC countries. Whereas Haiti, Brazil, Guatemala and Nicaragua show relatively low net enrollment rates, we found Panama, Mexico, Peru, Colombia and Costa Rica to have relatively high (national) net enrollment rates.

Differences in secondary school attendance between whites and non-whites are considerably high in some cases. In nine out of thirteen countries, the enrollment rates for non-whites is more that 10 percentage points lower than the one for whites. For Panama, Ecuador, Paraguay, Guatemala, Nicaragua and Honduras, the difference is more than 20 percentage points against the non-white youth.

Tertiary. The (national) enrollment rates for college range from a relatively low 1% in Haiti to a relatively high 19% in Bolivia. We see that 69% of the Mexican young adults with complete secondary school are enrolled in college.[47]

Differences by ethnicity in the enrollment rates for tertiary education are strikingly high in some countries including Panama, Mexico, and Honduras. In these countries, the tertiary enrollment rates for non-whites are only 6, 13 and 14 percent of that of the whites, respectively.

The MDG 2 indicator of universal primary education in 2015 seems to be attainable, both for whites and non-whites, in most countries in our sample. Only Haiti, Guatemala, Honduras, and Nicaragua show

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[46] The only exception is Nicaragua.
[47] See column (xii) of Table 3.3.

Table 3.4
MEAN OF SCHOOL GAP

| COUNTRY	YEAR	MEAN OF SCHOOL GAP FOR							
		[13-19]		[20-25]		[13-19]		[20-25]	
		White (i)	Non-White (ii)	White (iii)	Non-White (iv)	Females (v)	Males (vi)	Females (vii)	Males (viii)
Bolivia	1997	2,00	3,17	5,25	7,59	2,33	2,38	5,93	5,96
	2002	1,82	2,10	5,23	6,09	1,96	1,92	5,33	5,35
Brazil	1995	3,60	5,17	7,71	9,70	3,89	4,87	7,87	9,29
	2002	2,62	3,78	6,00	8,07	2,77	3,66	5,84	7,78
Chile	2000	1,52	2,18	5,40	7,04	1,39	1,69	5,02	5,80
Colombia	1999	2,56	3,62	7,00	8,46	2,32	2,96	6,58	7,56
Costa Rica	1992	3,10	3,57	8,03	8,84	2,90	3,41	7,70	8,40
	2001	2,97	3,26	7,13	8,25	2,73	3,24	6,65	7,68
Ecuador	1998	2,26	3,23	6,19	7,62	1,96	2,59	5,79	6,55
Guatemala	2002	2,97	5,05	6,12	9,63	3,64	3,75	7,06	7,41
Haiti	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Honduras	2003	3,72	4,77	8,60	10,91	3,52	4,29	8,14	9,65
Mexico	1992	2,57	4,93	7,24	10,89	2,50	2,85	7,25	7,48
	2002	1,76	2,60	6,03	8,60	1,69	1,99	5,96	6,44
Nicaragua	1998	4,72	4,69	8,30	6,89	4,22	5,18	7,68	8,72
	2001	4,44	5,15	9,12	9,12	3,72	5,06	8,23	9,80
Panama	2002	1,83	4,95	5,81	11,65	1,64	2,24	5,28	6,60
Paraguay	1995	2,12	3,82	6,12	9,66	2,65	3,06	6,80	7,92
	2001	1,79	3,05	4,75	8,45	2,18	2,74	5,89	7,25
Peru	2001	2,03	2,14	5,72	5,63	2,03	2,13	5,60	5,76
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

primary school enrollment rates below 90%.[48] On the other hand, significant differences in enrollment rates between whites and non-whites do exist for secondary and tertiary educational levels.

In Graph 3.3, we plot non-whites' enrollment rates against their headcount ratio for the one-dollar a day poverty line. We find, for all educational levels, a negative relation between them.

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[48] A similar result is presented in UNESCO (2004).

Graph 3.3
POVERTY AND ENROLLMENT RATES

Primary


Secondary

Tertiary
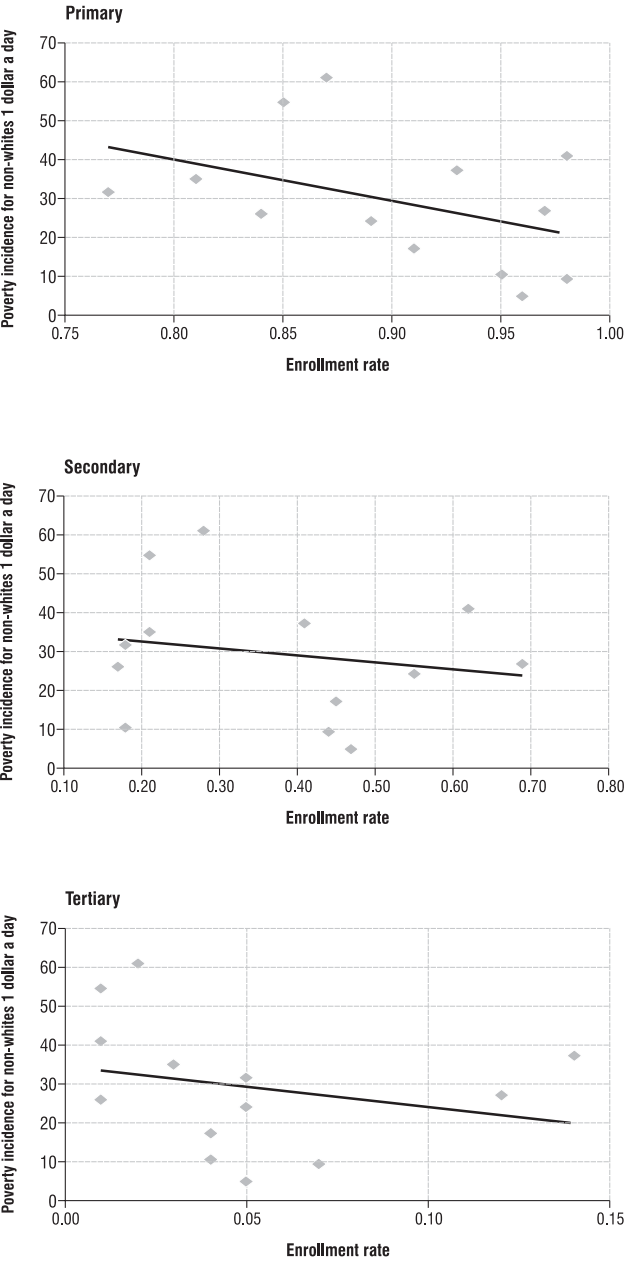
School Gaps

The schooling gap is defined as the difference between: (1) the years of education that a child would have completed had he entered school at normal school age and advanced one grade each year and (2) the actual years of education. In other words, the schooling gap measures years of missing education. Note, however, that this is not part of the MDGs' targets. Graph 3.4 shows the school gaps by ethnicity for teenagers (13-19) and young adults (20-25).[49]

The school gap for white people aged 13-19 across countries from 1.52 in Chile to 4.44 in Nicaragua. The corresponding figures for non-whites are 2.10 in Bolivia and 5.15 in Nicaragua.

The school gap is higher for non-whites than for whites in all countries for the 13-19 age-group, and in 11 out 13 countries for the 20-25 age-group. This means, for example, that a young Guatemalan

Graph 3.4
MEAN OF SCHOOL GAP

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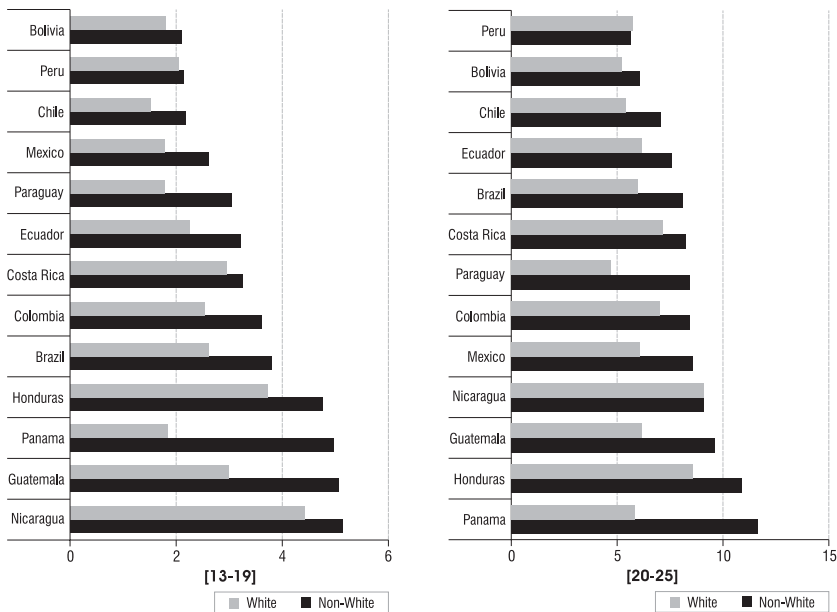
[49] See Table 3.4 for details.

indigenous person has, on average, 5.05 years of missing education, while his white counterpart has only 2.97.

2.   Measuring Statistical Discrimination in the Access to Education

Differences in ethnicity are explicitly considered to be unacceptable sources of differences in access to education in the United Nations Millennium Declaration. In this section, we use econometric tools to assess how being indigenous/afro-descendant affects the probability of school attendance.

Methodology

We estimate the conditional probabilities of attending school in order to capture differences between groups. We estimate these conditional probabilities from binary choice models of the attendance decision, using household per capita income, age, gender, location (urban/rural), parental education, and a dummy indicating if the individual is indigenous or afro-descendant as an independent variable. The coefficients associated with ethnicity are interpreted as the difference in the enrollment rates when we compare two people who have the same (average) characteristics with the only exception of ethnicity. A negative value is a first signal of ethnic discrimination. If, after controlling for individual and family characteristics, we still find differences in school enrollment rates between whites and non-whites, they could be attributed to ethnic discrimination.

Results

Table 3.5 in the appendix reports our results. Columns (i), (iii) and (v) show the coefficients associated with ethnicity for each educational level. The other columns report the z-statistics associated with those coefficients. In Graph 3.5 we plot the regression coefficients against the headcount ratio for non-whites. We find that lower coefficients for secondary and tertiary educational levels (i.e. more discrimination) are associated with higher poverty rates for indigenous and afro-descendant peoples.

The results reported in Table 3.5 indicate that, for primary education, only in Brazil, Guatemala and Panama, ethnic discrimination exists. It is interesting to note that ethnic discrimination has decreased

in Brazil (from 1995 to 2002), and disappeared in Mexico (from 1992 to 2002) and Costa Rica (from 1992 to 2001). The results also suggest statistically significant differences in secondary enrollment rates due to ethnicity in Paraguay and Honduras. We find ethnic discrimination in college for all countries except for Bolivia, Chile and Peru.

The regression results, not reported here, show that a higher household per capita income, living in a city, and a higher educational level of the household head have a positive effect on the probability of school attendance. Thus, if non-white people are poorer than white people, they will have a lower conditional probability of school attendance even if the coefficients in Table 3.5 do not show any ethnic discrimination.

Table 3.5
ETHNIC DISCRIMINATION
(DIFFERENCE IN THE CONDITIONAL PROBABILITY OF ENROLLMENT
BETWEEN WHITE AND NON-WHITE AVERAGE INDIVIDUAL)

COUNTRY	YEAR	PRIMARY		SECONDARY		TERTIARY	
		Coefficients (i)	z-statistics (ii)	Coefficients (iii)	z-statistics (iv)	Coefficients (v)	z-statistics (vi)
Bolivia	1997	0,007	1,40	0,000	0,00	-0,009	-0,88
	2002	0,019	3,14	0,052	2,48	0,005	0,42
Brazil	1995	-0,012	-5,45	-0,025	-15,78	-0,008	-10,25
	2002	-0,004	-2,98	-0,052	-15,78	-0,019	-13,72
Chile	2000	0,002	1,19	-0,006	-0,25	0,002	0,22
Colombia	1999	0,008	1,44	-0,042	-3,08	-0,012	-1,91
Costa Rica	1992	-0,031	-3,50	-0,084	-3,17	-0,015	-1,76
	2001	0,008	1,63	-0,030	-1,22	-0,035	-3,34
Ecuador	1998	0,021	1,43	-0,056	-1,05	-0,038	-1,65
Guatemala	2002	-0,053	-3,00	-0,109	-3,36	-0,012	-0,75
Haiti	2001	n.a	n.a	n.a	n.a	n.a	n.a
Honduras	2003	0,033	4,77	-0,115	-5,62	-0,013	-3,26
Mexico	1992	-0,049	-5,24	-0,141	-4,03	-0,015	-1,04
	2002	0,006	1,83	0,060	3,40	-0,005	-0,76
Nicaragua	1998	0,059	1,94	0,002	0,03	0,000	0,03
	2001	0,032	1,73	-0,093	-1,78	-0,032	-2,05
Panama	2002	-0,023	-4,44	-0,226	-6,53	-0,065	-2,06
Paraguay	1995	-0,001	-0,12	-0,128	-4,25	-0,021	-2,72
	2001	-0,003	-0,36	-0,111	-3,89	-0,032	-2,33
Peru	2001	0,009	3,70	0,059	5,48	0,021	3,51
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Graph 3.5
ETHNIC DISCRIMINATION

Primary

Secondary

Tertiary
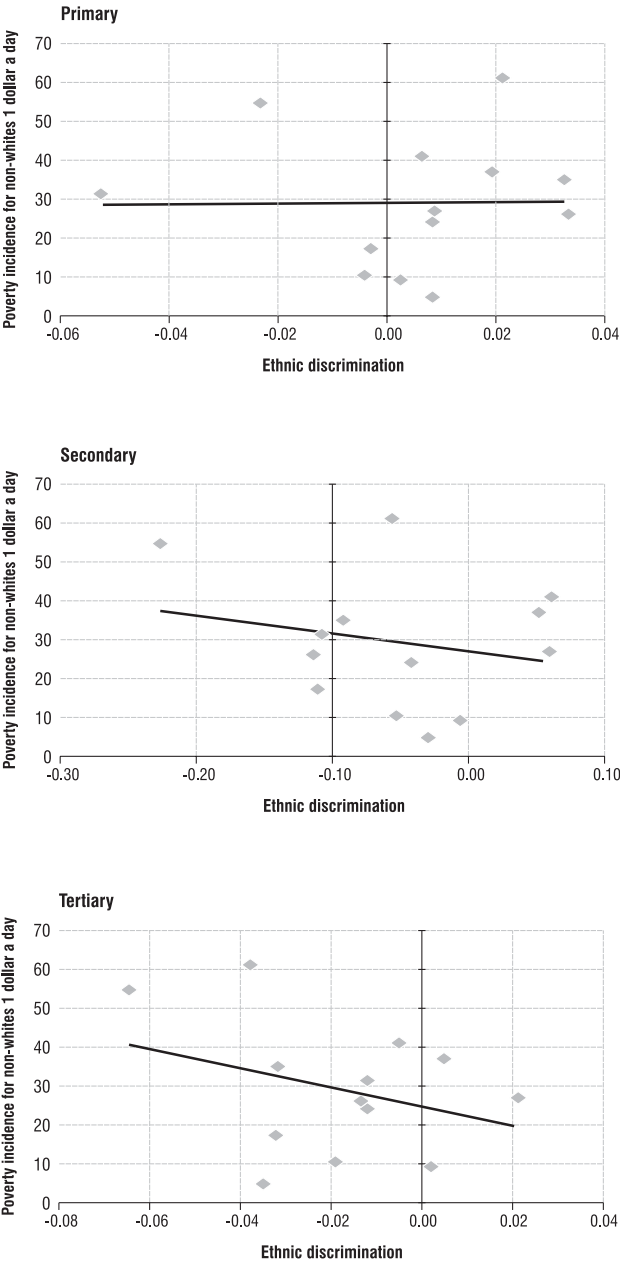
3. Educational Mobility

It is a well-known fact that Latin American countries have very unequal income distributions compared to most other countries in the world (World Bank, 2004). This, combined with low mean income, is undesirable as it implies that many people live in poverty. However, high inequality in a context of high social mobility, is not as bad as high inequality combined with low social mobility. Poverty differences may be seen as less worrisome when they are combined with high social mobility. Social mobility basically measures the importance of family background in determining the education of teenagers. If family background is very important, we will say that social mobility is low.

Methodology

The main idea behind the proposed methodology can be summarized as follows: if family background explains children's opportunities, then social mobility is low- if it does not, then social mobility is high. The methodology, first developed by Andersen (2001), can be explained in two steps.[50]

In the first step, we identify all teenagers who live with at least one parent, and regress their schooling gaps on two sets of regressors: (i) "family background variables" that include household income per capita and the maximum of father's and mother's education and (ii) other "explanatory variables" such as age, age of head parent at birth of the child, dummies for the presence of older sisters, older brothers, younger sisters, or younger brothers, a dummy for female-headed households, a dummy for single parent households, a self-employment dummy for the family head, average regional income, and average regional education.

In the second step, we apply the Fields Decomposition (Fields, 1996) on the regression results. This tells us what percentage of the schooling gap total variance can be explained by the "family background variables". The Social Mobility Index (SMI) is defined as 1 minus the variance of the school gap that is explained by family background. In an economy with very low mobility, family background would be important and thus SMI would be near zero. If family background does not matter, the SMI would be equal to one. The two basic assumptions underlying this methodology are as follows: 1) a smaller schooling gap should imply

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[50] For technical details see Andersen (2001).

better future opportunities for young people and 2) equality of opportunity is a good indicator of social mobility.

Results

Graph 3.6 shows the SMI for teenagers (aged 13-19) and young adults (aged 20-25) by ethnicity for all LAC countries in the sample.[51] In only three out of thirteen countries the SMI is lower for non-whites than for whites. The fact that the SMI is higher for non-whites than for whites may indicate that the younger generations of non-whites may not be trapped by their family background. The SMI for non-whites teenagers ranges from 0.75 in Colombia to 0.95 in Chile. The corresponding figures for young adults are 0.61 in Ecuador and 0.96 in Honduras. The temporal evolution of SMI shows higher social mobility for non-whites in Brazil both for teenagers and young adults.

Graph 3.6
SOCIAL MOBILITY INDEX
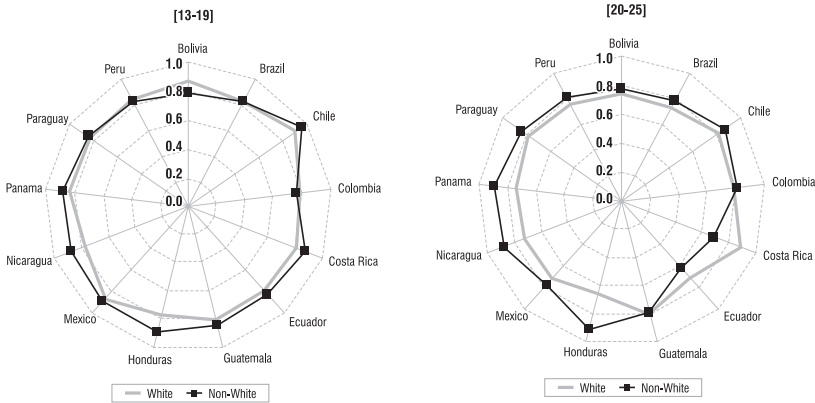
4.   Returns and Incentives to get Education

In this section, we try to assess if whites are more educated than non-whites because they have higher returns to education. We follow the methodology of Di Gresia (2004) to estimate the determinants of the decision to attend university, taking into account the expected return to education.

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[51] Detailed results are reported in Table 3.6.

Table 3.6
SOCIAL MOBILITY

COUNTRY	YEAR	SOCIAL MOBILITY INDEX							
		[13-19]		[20-25]		[13-19]		[20-25]	
		White (i)	Non-White (ii)	White (iii)	Non-White (iv)	Females (v)	Males (vi)	Females (vii)	Males (viii)
Bolivia	1997	0,827	0,836	0,733	0,777	0,776	0,835	0,710	0,739
	2002	0,864	0,790	0,741	0,771	0,803	0,860	0,709	0,789
Brazil	1995	0,757	0,785	0,680	0,768	0,742	0,733	0,680	0,687
	2002	0,824	0,824	0,730	0,790	0,818	0,785	0,749	0,709
Chile	2000	0,911	0,958	0,815	0,875	0,922	0,897	0,812	0,813
Colombia	1999	0,777	0,751	0,779	0,808	0,776	0,761	0,784	0,771
Costa Rica	1992	0,813	0,824	0,815	0,727	0,824	0,803	0,712	0,748
	2001	0,792	0,874	0,885	0,684	0,803	0,800	0,730	0,671
Ecuador	1998	0,787	0,805	0,701	0,615	0,803	0,771	0,661	0,737
Guatemala	2002	0,806	0,841	0,802	0,785	0,776	0,763	0,741	0,750
Haiti	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Honduras	2003	0,779	0,897	0,662	0,906	0,813	0,780	0,699	0,676
Mexico	1992	0,858	0,871	0,762	0,909	0,851	0,849	0,763	0,757
	2002	0,859	0,886	0,723	0,778	0,861	0,845	0,721	0,703
Nicaragua	1998	0,788	0,931	0,712	0,955	0,786	0,791	0,708	0,710
	2001	0,768	0,865	0,720	0,872	0,752	0,778	0,688	0,750
Panama	2002	0,833	0,876	0,730	0,890	0,822	0,813	0,707	0,720
Paraguay	1995	0,780	0,899	0,712	0,849	0,796	0,759	0,713	0,658
	2001	0,834	0,849	0,784	0,847	0,800	0,796	0,744	0,723
Peru	2001	0,835	0,816	0,749	0,815	0,819	0,839	0,757	0,804
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Methodology

We conduct estimates only for Bolivia and Brazil because we need regional variability in order to estimate the effect that the expected return to education has on the decision to attend college.

As a first step, we estimate two standard Mincerian wage equations for each region in Bolivia and Brazil to get regional returns to education both for whites and non-whites. The specification of this equation is similar to that described in the last section of Chapter 2. As a second step, we estimate a binary choice model for the college enrollment

decision, similar to that described in Section 2 above, adding (regional) returns to education and some other regional controls as explanatory variables.[52] The estimates were conducted separately for whites and non-whites.

Results

Table 3.7 reports the results of the last step. We find that the returns to education have a positive effect over the probability of college attendance both for whites and non-whites. The coefficients associated with the returns to education suggest that white individuals have more incentives to get education than non-white individuals, because when facing the decision of entering college, they perceive a higher return to education.

Table 3.7
INCENTIVES TO EDUCATE BY ETHNICITY

| | BRAZIL | | | | | |
	dF/dx	Z	P > [z]	dF/dx	Z	P >
Income	0,075	21,33	0,000	0,020	21,99	0,000
edu_head	0,015	27,29	0,000	0,004	25,83	0,000
age_head	0,004	19,01	0,000	0,001	19,37	0,000
male*	-0,037	-7,46	0,000	-0,011	-9,39	0,000
age	0,358	22,36	0,000	0,060	21,28	0,000
age_sq	-0,008	-22,35	0,000	-0,001	-20,11	0,000
family_size	-0,001	-0,33	0,738	0,001	1,38	0,167
urban*	0,050	3,98	0,000	0,007	2,15	0,032
ret_edu	0,979	2,18	0,029	0,205	1,85	0,064
reg_unemp	-0,527	-2,57	0,010	-0,041	-1,28	0,201
obs. P	0,165			0,052		
pred. P	0,086	(at x-avg)		0,015	(at x-avg)	

(*) dF/dx is for discrete change of dummy variable from 0 to 1
z and P > [z] are the test of underlying coefficient being 0

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[52] See Di Gresia (2004) for technical details.

Table 3.7
INCENTIVES TO EDUCATE BY ETHNICITY

	BOLIVIA					
	dF/dx	Z	P > [z]	dF/dx	Z	P >
Income	0,037	3,17	0,002	0,024	3,10	0,002
edu_head	0,019	8,66	0,000	0,014	9,05	0,000
age_head	0,004	4,64	0,000	0,002	2,49	0,013
male*	-0,036	-1,83	0,067	0,017	2,26	0,024
age	0,062	6,54	0,000	0,303	4,03	0,000
age_sq	-0,014	-6,45	0,000	-0,007	-3,94	0,000
family_size	-0,010	-2,40	0,017	-0,006	-1,49	0,137
married*	-0,214	-6,52	0,000	-0,118	-4,70	0,000
urban*	0,142	3,13	0,002	0,130	7,43	0,000
ret_edu	2,984	4,67	0,000	1,411	2,14	0,033
reg_unemp	0,859	1,63	0,104	-1,843	-2,58	0,010
obs. P	0,251			0,178		
pred. P	0,169	(at x-avg)		0,102	(at x-avg)	

(*) dF/dx is for discrete change of dummy variable from 0 to 1
z and P > [z] are the test of underlying coefficient being 0

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Di Gresia, L. (2004). Acceso a la Educación Universitaria: Evolución y Determinantes para el Caso Argentino. *Tesis Doctoral Universidad Nacional de La Plata.*

UNESCO (2004). La Conclusión Universal de la Educación Primaria en América Latina: ¿Estamos Realmente Cerca? Informe Regional Sobre los Objetivos de Desarrollo del Milenio Vinculados a la Educación. *Oficina Regional de Educación de la UNESCO para América Latina y el Caribe,* Santiago, Chile, 2004*.*

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Chapter 4: Increasing Gender Equity* (MDG 3)

The Millennium Development Goal 3 refers to the elimination of gender disparity at all levels of education no later than the year 2015. Latin America and the Caribbean is one of the regions in the world where the usual indicators of education show a relatively high gender equity, which holds when analyzing the sample by ethnicity. However, there are some exceptions worth stressing. Some countries do not exhibit this equality (e.g. Guatemala) and in some others, gender equality holds only in the primary education, that is typically mandatory, whereas in secondary education, males tend to have higher enrollment rates.

In this chapter, we focus our attention on gender equity by ethnicity. We first analyze literacy rates, enrollment rates and skill composition by gender, both for whites and non-whites. Then, in Section 2, we estimate binary choice models in order to compute a set of coefficients associated with gender discrimination in the access to education. In the last two sections, we tackle the question of gender discrimination in the labor market both in terms of work type (Section 3) and wage gap (Section 4).

1. Assessing Gender Differences in Educational Outcomes

In this section, we report some educational statistics related to MDG 3 (promote gender equality and empower women) stressing differences by gender and ethnicity. All the indices used here were defined in the previous chapter. The reader is referred there for their definitions.

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* All the tables included in this chapter can be downloaded from www.depeco.econo.unlp.edu.ar/cedlas

Literacy Rates

As one of the measures for gender discrimination in educational outcomes, the MDGs propose the ratio of literate women to men aged 15-24 years old (Literacy Gender Parity Index).[53] This indicator measures progress towards gender equity in literacy and learning opportunities for women in relation to those for men. It also measures a presumed outcome of attending school and a key indicator of empowerment of women in society. Graph 4.1 reports our estimates for this indicator and Table 4.1 provides more details. The graph indicates that the literacy gender parity index is considerably lower than 1 (less than 0.9) only for indigenous peoples and afro-descendants living in Peru (0.77), Panama (0.78) and Guatemala (0.85). The corresponding figures for whites are 0.92, 1.00 and 0.94, respectively. The other countries do not show any major differences by ethnicity in the ratio of literate women to men aged 15-24. Thus, most LAC countries in our sample seem to be doing well with regards to the MDG literacy gender parity index.

Graph 4.1
RATIO OF LITERATE WOMEN TO MEN AGED 15-24

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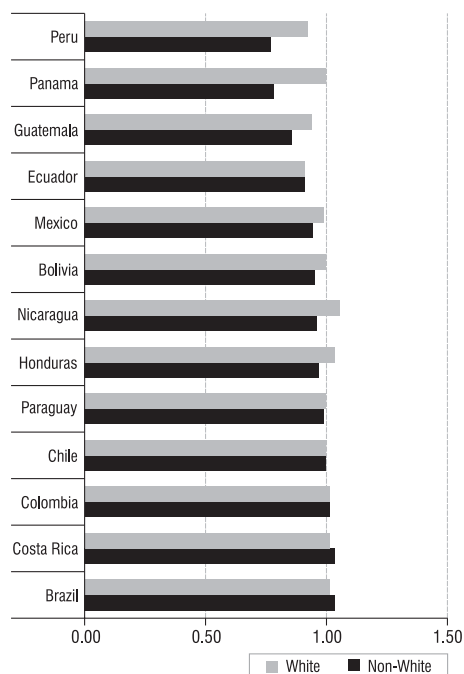
[53] See www.developmentgoals.org.

Table 4.1
LITERACY RATES BY GENDER (MDG 3)
(INDIVIDUALS BETWEEN 15 AND 24 YEARS OLD)

COUNTRY	YEAR	WHITE		NON-WHITE	
		Female (i)	Male (ii)	Female (iii)	Male (iv)
Bolivia	1997	0,98	0,99	0,92	0,98
	2002	0,99	0,99	0,95	1,00
Brazil	1995	0,97	0,95	0,93	0,85
	2002	0,99	0,98	0,96	0,93
Chile	2000	0,99	0,99	0,99	0,99
Colombia	1999	0,98	0,97	0,95	0,94
Costa Rica	1992	0,98	0,98	0,97	0,97
	2001	0,98	0,97	0,97	0,94
Ecuador	1998	0,68	0,75	0,69	0,76
Guatemala	2002	0,89	0,95	0,70	0,82
Haiti	2001	n.a	n.a	0,75	0,80
Honduras	2003	0,92	0,89	0,84	0,87
Mexico	1992	0,97	0,97	0,69	0,90
	2002	0,97	0,98	0,91	0,96
Nicaragua	1998	0,87	0,83	0,92	0,94
	2001	0,89	0,84	0,78	0,81
Panama	2002	0,98	0,98	0,68	0,87
Paraguay	1995	0,95	0,95	0,91	0,94
	2001	0,98	0,95	0,92	0,93
Peru	2001	0,70	0,76	0,64	0,83
Suriname	1999	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Enrollment Rates

The indicator used to monitor progress towards Goal 3 regarding gender equity in school enrollment is the ratio of girls to boys in primary, secondary and tertiary education. This indicator is defined as the ratio of the number of female students enrolled at primary, secondary and tertiary levels in public and private schools to the number of male students. The indicator of equality of educational opportunity, measured in terms of school enrollment, is a measure of both fairness and efficiency. Education is one of the most important aspects of human development. Eliminating gender disparity at all levels of education would help to

increase the status and capabilities of women.[54] This indicator is computed in Graph 4.2 as the ratio of the number of enrolled girls to enrolled boys in five different age-groups.

Men and women show increasingly similar levels of education in Latin America particularly in urban areas (World Bank, 2004). However, when examining our country sample by ethnicity, gender equality in school access is not the same across countries. For the 6-12 age-group, we find gender equality in enrollment rates both for whites and non-whites in all countries with the exception of Honduras and Panama for non-whites only, and Guatemala both for whites and non-whites. The 13-15 age cohort shows the smallest differences by gender in school enrollment rates. Only non-white girls living in Ecuador, Guatemala and Mexico lag behind boys in the same group. Table 4.2 allows a comparison of school enrollment rates both by ethnicity and by gender. The single most ignored group is that of non-white women aged 13-24 in Bolivia, Ecuador, Guatemala, and Panama. This group lags behind white women due to ethnic gaps and behind non-white men due to a gender factor that does not appear to be as strong among white people.[55]

We have information for two points in time only for a few countries. We can observe an increase in enrollment rates for non-white women and men in every country during the last years.

Skill

Here, we compute the skill composition of individuals aged 25-65 both by gender and ethnicity. An individual is considered skilled if he/she has some tertiary studies (complete or incomplete). We find that the proportion of skilled women among non-white individuals is lower than that for whites for all countries in our sample (see Table 4.3). Gender equality is lower for non-whites than for whites in seven countries (Guatemala, Ecuador, Mexico, Chile, Bolivia, Peru, and Nicaragua).

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[54] See MDGs definitions.
[55] A similar result for Bolivia is obtained by the World Bank (2004).

Table 4.2
ENROLLMENT RATES BY GENDER (MDG 3)

| COUNTRY	YEAR	[4-5]				[6-12]				[13-15]				[16-18]				[19-24]				[25-30]			
		White		Non-White		White		Non-White		White		Non-White		White		Non-White		White		Non-White		White		Non-White	
		Female (i)	Male (ii)	Female (iii)	Male (iv)	Female (v)	Male (vi)	Female (vii)	Male (viii)	Female (ix)	Male (x)	Female (xi)	Male (xii)	Female (xiii)	Male (xiv)	Female (xv)	Male (xvi)	Female (xvii)	Male (xviii)	Female (xix)	Male (xx)	Female (xxi)	Male (xxii)	Female (xxiii)	Male (xxiv)
Bolivia	1997	0.53	0.49	0.35	0.34	0.95	0.95	0.88	0.91	0.91	0.89	0.70	0.84	0.75	0.77	0.46	0.55	0.46	0.47	0.15	0.21	0.06	0.06	0.02	0.02
	2002	0.58	0.60	0.49	0.47	0.94	0.95	0.93	0.94	0.88	0.91	0.82	0.86	0.73	0.73	0.62	0.68	0.43	0.46	0.31	0.34	0.09	0.09	0.05	0.05
Brazil	1995	0.55	0.56	0.51	0.48	0.94	0.92	0.87	0.85	0.86	0.84	0.81	0.77	0.64	0.60	0.56	0.49	0.27	0.25	0.22	0.19	0.03	0.03	0.03	0.02
	2002	0.72	0.69	0.66	0.63	0.97	0.97	0.96	0.95	0.94	0.94	0.92	0.92	0.74	0.73	0.69	0.68	0.33	0.32	0.28	0.26	0.06	0.05	0.07	0.05
Chile	2000	0.71	0.73	0.31	0.67	0.99	0.99	0.98	0.97	0.96	0.96	0.92	0.97	0.77	0.77	0.66	0.70	0.29	0.33	0.17	0.21	0.02	0.03	0.01	0.01
Colombia	1999	0.67	0.69	0.68	0.66	0.92	0.90	0.90	0.91	0.82	0.79	0.81	0.79	0.57	0.54	0.47	0.46	0.24	0.24	0.14	0.19	0.03	0.03	0.04	0.03
Costa Rica	1992	0.07	0.10	0.02	0.04	0.90	0.90	0.85	0.85	0.72	0.74	0.61	0.56	0.47	0.47	0.35	0.31	0.23	0.24	0.10	0.13	0.04	0.04	0.02	0.02
	2001	0.45	0.45	0.30	0.32	0.97	0.97	0.97	0.96	0.78	0.80	0.73	0.67	0.61	0.57	0.56	0.47	0.37	0.33	0.18	0.18	0.06	0.06	0.03	0.03
Ecuador	1998	0.67	0.59	0.47	0.31	0.95	0.91	0.88	0.87	0.70	0.73	0.46	0.59	0.53	0.51	0.10	0.28	0.23	0.22	0.11	0.07	0.03	0.03	0.01	0.02
Guatemala	2002	n.a	n.a	0.04	0.05	0.86	0.90	0.72	0.81	0.67	0.73	0.50	0.61	0.43	0.48	0.19	0.30	0.21	0.22	0.08	0.15	0.03	0.05	0.01	0.04
Haiti	2001	n.a	n.a	n.a	0.05	n.a	n.a	0.79	0.77	n.a	n.a	0.79	0.80	n.a	n.a	0.66	0.71	n.a	n.a	0.28	0.40	n.a	n.a	0.02	0.03
Honduras	2003	0.38	0.33	0.41	0.32	0.89	0.87	0.81	0.86	0.68	0.67	0.57	0.53	0.46	0.39	0.30	0.25	0.24	0.20	0.10	0.16	0.03	0.05	0.01	0.02
Mexico	1992	0.63	0.64	0.50	0.37	0.94	0.94	0.75	0.86	0.71	0.75	0.47	0.73	0.43	0.42	0.22	0.26	0.17	0.22	0.04	0.03	0.02	0.02	0.01	0.00
	2002	0.86	0.84	0.77	0.80	0.97	0.97	0.98	0.97	0.81	0.81	0.72	0.86	0.49	0.52	0.41	0.39	0.24	0.26	0.06	0.17	0.03	0.03	0.01	0.01
Nicaragua	1998	0.58	0.54	0.37	0.25	0.87	0.81	0.82	0.82	0.73	0.64	0.76	0.70	0.45	0.44	0.31	0.50	0.25	0.19	0.17	0.31	0.04	0.04	0.05	0.00
	2001	0.61	0.59	0.47	0.20	0.87	0.86	0.76	0.75	0.81	0.74	0.87	0.77	0.55	0.41	0.39	0.66	0.26	0.24	0.11	0.23	0.03	0.04	0.07	0.03
Panama	2002	0.63	0.63	0.56	0.26	0.98	0.98	0.81	0.88	0.91	0.86	0.55	0.61	0.70	0.67	0.11	0.33	0.36	0.28	0.02	0.05	0.07	0.04	0.01	0.02
Paraguay	1995	0.46	0.47	0.12	0.14	0.92	0.92	0.86	0.85	0.77	0.81	0.54	0.64	0.57	0.59	0.21	0.26	0.23	0.23	0.07	0.05	0.05	0.05	0.01	0.01
	2001	0.61	0.52	0.51	0.48	0.97	0.94	0.92	0.93	0.88	0.90	0.74	0.69	0.70	0.69	0.42	0.41	0.32	0.31	0.16	0.13	0.10	0.09	0.03	0.02
Peru	2001	0.78	0.80	0.75	0.68	0.96	0.96	0.97	0.98	0.85	0.89	0.90	0.93	0.56	0.60	0.59	0.70	0.25	0.26	0.24	0.26	0.02	0.02	0.01	0.03
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Table 4.3
EDUCATION LEVELS BY GENDER (MDG 3)
(INDIVIDUALS BETWEEN 25 AND 65 YEARS OLD)

COUNTRY	YEAR	SKILLED			
		White		Non-White	
		Female (i)	Male (ii)	Female (iii)	Male (iv)
Bolivia	1997	0,27	0,32	0,06	0,10
	2002	0,23	0,26	0,09	0,13
Brazil	1995	0,16	0,17	0,04	0,04
	2002	0,20	0,19	0,06	0,05
Chile	2000	0,18	0,21	0,07	0,13
Colombia	1999	0,13	0,16	0,08	0,09
Costa Rica	1992	0,12	0,13	0,05	0,04
	2001	0,19	0,20	0,09	0,05
Ecuador	1998	0,16	0,19	0,02	0,05
Guatemala	2002	0,06	0,10	0,01	0,03
Haiti	2001	n.a	n.a	0,03	0,06
Honduras	2003	0,06	0,07	0,02	0,01
Mexico	1992	0,07	0,14	0,00	0,01
	2002	0,11	0,17	0,02	0,04
Nicaragua	1998	0,06	0,09	0,02	0,06
	2001	0,07	0,09	0,03	0,04
Panama	2002	0,24	0,18	0,01	0,01
Paraguay	1995	0,13	0,15	0,01	0,01
	2001	0,18	0,20	0,02	0,02
Peru	2001	0,23	0,28	0,12	0,18
Suriname	1999	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Graph 4.2
RATIO OF ENROLLED GIRLS TO ENROLLED BOYS

[6-12]

[13-15]

[16-18]
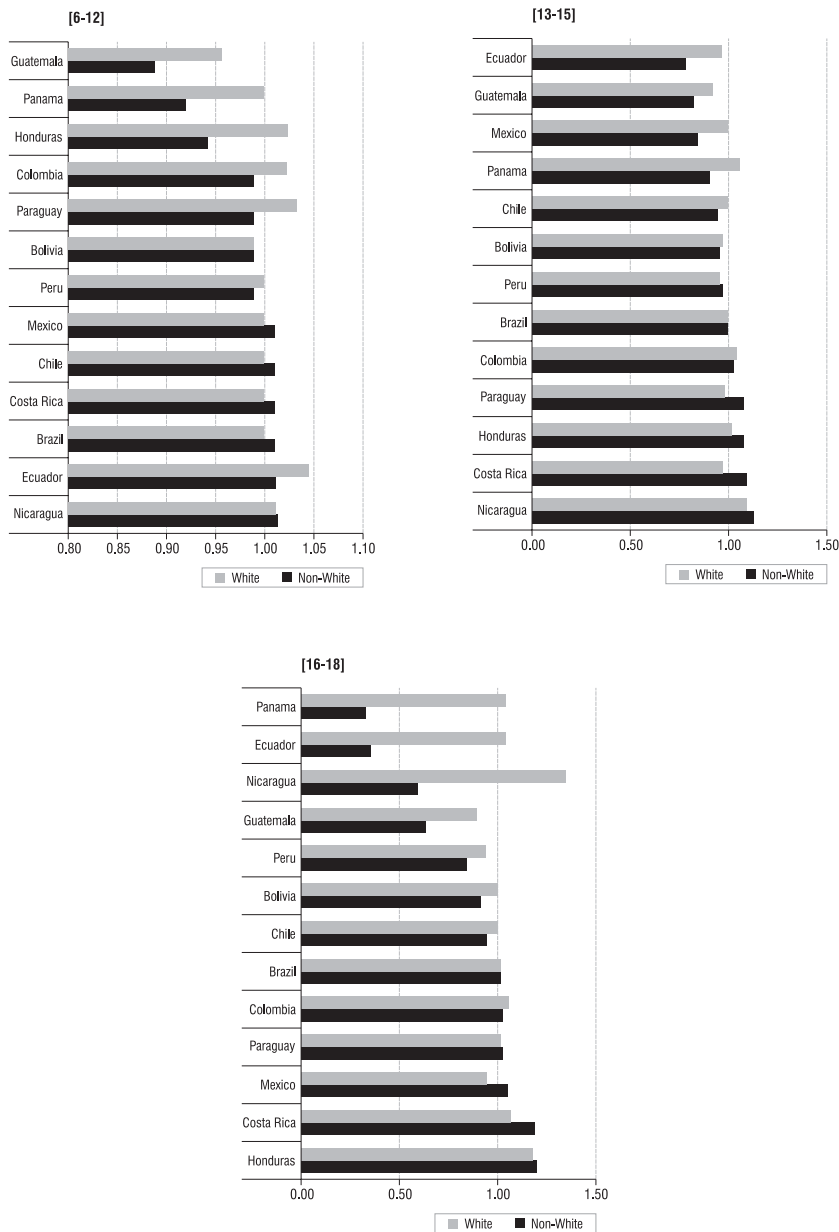
Graph 4.2
RATIO OF ENROLLED GIRLS TO ENROLLED BOYS
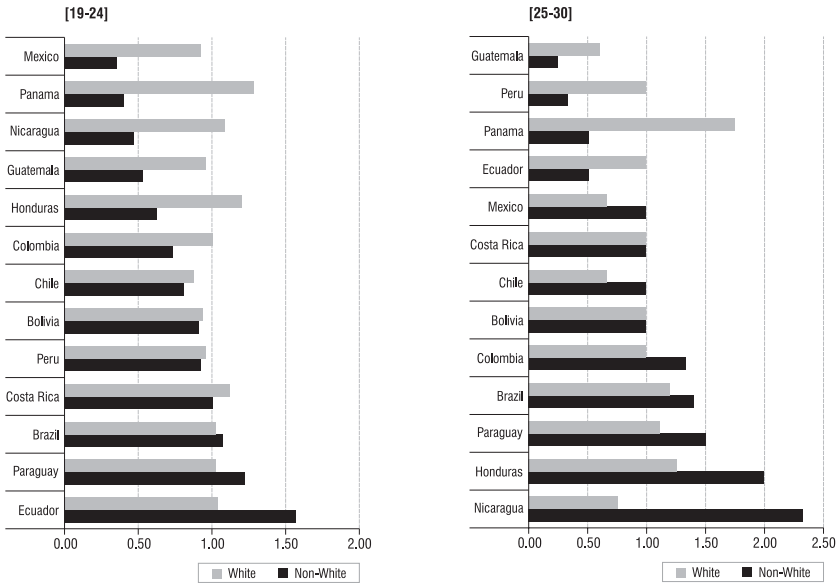
2.   Statistical Gender Discrimination in Education

In this section, we make a conditional analysis of differences in educational outcomes by gender. We want to know if, after controlling for a standard set of variables (age, place where the individual lives - city or rural areas-, household income, maximum education of the head of household or of the spouse, household head's age, and number of persons who live in the household) women have lower probabilities of going to school than men. These differences in probabilities can be interpreted as a measure of discrimination. The methodology is similar to the one applied in the previous chapter to asses the existence of ethnic discrimination. The only difference is that, here, we run separate regressions for whites and non-whites in order to measure gender discrimination by ethnicity. In Table 4.4, we report the coefficients associated with the male dummy for each educational level. A positive value indicates gender discrimination.

Table 4.4
GENDER DISCRIMINATION BY ETHNICITY
(DIFFERENCE IN THE CONDITIONAL PROBABILITY OF ENROLLMENT BETWEEN MALE AND FEMALE AVERAGE INDIVIDUAL)

COUNTRY	YEAR	PRIMARY				SECONDARY				TERTIARY			
		White		Non-White		White		Non-White		White		Non-White	
		Coef. (i)	z-statistics (ii)	Coef. (iii)	z-statistics (iv)	Coef. (v)	z-statistics (vi)	Coef. (vii)	z-statistics (viii)	Coef. (ix)	z-statistics (x)	Coef. (xi)	z-statistics (xii)
Bolivia	1997	0,001	0,26	0,008	0,71	0,032	1,54	0,078	2,80	0,002	0,19	0,004	0,56
	2002	0,007	0,75	0,005	0,72	-0,049	-1,86	0,088	2,89	-0,032	-1,89	0,016	1,09
Brazil	1995	-0,008	-3,73	-0,015	-4,23	-0,035	-9,81	-0,011	-8,19	-0,007	-4,01	-0,002	-4,03
	2002	-0,003	-2,27	-0,011	-5,34	-0,077	-11,95	-0,043	-13,43	-0,036	-11,53	-0,011	-10,31
Chile	2000	-0,001	-1,16	-0,005	-0,99	-0,059	-7,26	0,012	0,33	-0,015	-7,04	-0,004	-0,95
Colombia	1999	-0,016	-3,92	-0,010	-0,84	-0,042	-4,89	-0,037	-1,35	-0,026	-7,47	-0,005	-1,22
Costa Rica	1992	0,001	0,15	-0,007	-0,41	-0,012	-0,61	-0,084	-1,89	-0,023	-3,54	-0,022	-2,81
	2001	0,000	0,06	-0,005	-0,62	-0,037	-2,17	-0,102	-2,21	-0,029	-3,99	-0,014	-2,12
Ecuador	1998	-0,024	-3,14	0,000	0,01	-0,029	-1,48	0,155	1,44	-0,021	-2,87	0,000	
Guatemala	2002	0,011	0,60	0,100	3,36	-0,001	-0,02	0,021	0,53	-0,011	-0,64	0,033	2,59
Haiti	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Honduras	2003	-0,020	-3,00	0,013	1,07	-0,071	-4,33	-0,055	-2,47	-0,002	-0,52	0,000	-0,57
Mexico	1992	0,002	0,38	0,054	1,78	0,010	0,67	0,025	0,56	0,017	4,31	0,001	0,54
	2002	0,000	-0,01	-0,013	-1,56	-0,009	-0,74	-0,009	-0,26	-0,001	-0,16	0,003	1,41
Nicaragua	1998	-0,043	-3,67	-0,026	-0,42	-0,112	-5,76	0,070	0,60	-0,015	-2,86	-0,007	-0,29
	2001	-0,011	-1,29	-0,021	-0,50	-0,089	-4,38	-0,105	-1,31	-0,024	-3,79	0,005	0,59
Panama	2002	0,001	0,48	0,088	3,00	-0,070	-5,59	0,079	1,64	-0,099	-13,03	0,000	0,22
Paraguay	1995	0,001	0,32	0,009	1,12	0,004	0,14	0,014	0,44	0,007	0,67	-0,014	-2,87
	2001	-0,014	-2,66	0,005	0,53	0,019	0,62	-0,039	-1,35	-0,008	-0,34	-0,034	-3,12
Peru	2001	-0,001	-0,38	0,003	0,81	0,029	2,01	0,060	3,83	-0,040	-5,07	-0,013	-1,49
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

We find statistical gender discrimination in access to primary education only for non-whites living in Guatemala and Panama. Bolivia and Peru show gender discrimination at the secondary school level for non-whites. Only among non-whites in Guatemala do we find gender discrimination in the access to tertiary education. If we combine these results with those of Chapter 3, we can conclude that in Guatemala and Panama, non-white women are the most disadvantaged group in that they have the lowest (conditional) probability of going to school.

Summarizing, our results suggest that in most LAC countries there is no evidence of gender discrimination in the access to education both for whites and non-whites. On the other hand, in Chapter 3, we found ethnic discrimination in the access to education in some countries.

3.   Gender Gross Gaps in the Labor Market

Absence of differences in educational outcomes might exist in the presence of differences in wages earned and in the types of jobs women do. In this section, we investigate both of these issues stressing differences by ethnicity.

Work Type

The share of women in wage employment in the non-agricultural sector is also part of MDG 3. This indicator, computed as the share of female workers in the non-agricultural sector expressed as a percentage of total employment in the sector, measures the degree to which labor markets are open to women in industry and service sectors. In Graph 4.3, it is shown that the proportion of women living in rural areas who work in agriculture is higher for non-whites than for whites (except in Colombia).[56] This proportion for indigenous and afro-descendant women ranges from 0.21 in Colombia to 0.86 in Bolivia. The corresponding figures for white women are 0.23 and 0.77, respectively. The comparison by gender shows a higher participation of agricultural employment for women than for men only for non-whites living in rural Ecuador and Nicaragua.

[56] See Table 4.5 for detailed results at the end of the chapter.

Graph 4.3
RATIO OF WOMEN TO MEN WITH HIGH SKILL LEVEL
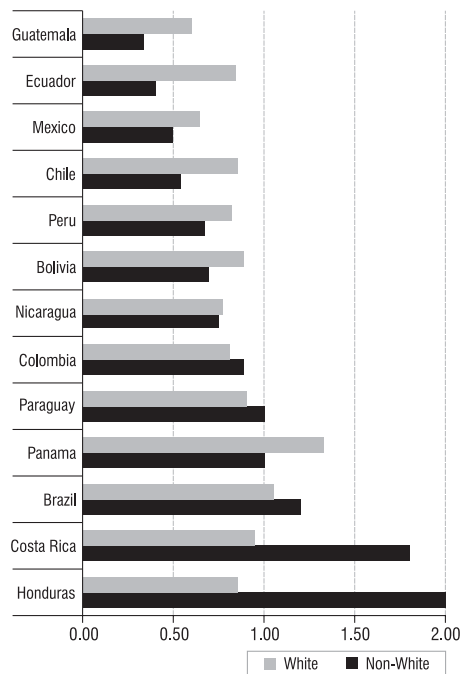
Wage Gaps

The MDGs do not refer to gender wage gaps although they can be a signal of gender discrimination in the labor market. Here we compute gross gender wage gaps by ethnicity simply as the ratio of average hourly wages for men and for women both for rural and urban workers. Graph 4.4 shows our results. The average gross wage gap across countries is higher in rural than in urban areas. We also see that the difference in the gender wage gap by ethnicity is lower for urban workers than for their rural counterparts. However, six countries (Mexico, Colombia, Chile, Paraguay, Guatemala, and Honduras) show somewhat higher average wages for non-white women living in rural areas than for men in the same group. For white individuals, this happens in Guatemala, Honduras, Panama, and Nicaragua. In urban areas, we find a negative wage gap for non-whites only in Honduras.

Graph 4.4
PERCENTAGE OF PEOPLE WORKING IN AGRICULTURAL
JOBS BY GENDER
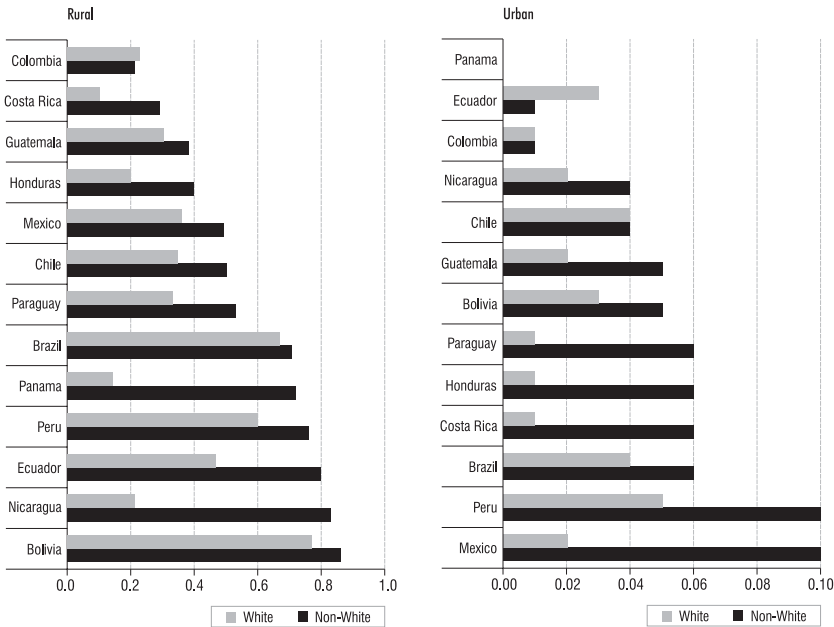
4.   Gender Wage Discrimination

The seminal work by Becker "The Economics of Discrimination" was the first literature that tried to detect, explain, and quantify the existence of "unjustifiable" differences in the treatment received by male and female workers in the labor market. Oaxaca (1973) and Blinder (1973) made important contributions to the measurement of discrimination. Many authors have found the existence of wage discrimination in LAC countries. Contreras and Galván (2003) found gender and ethnic discrimination during the nineties in the case of Bolivia. They also found that the discrimination was lower amongst younger workers. Loureiro (2001) found race discrimination in Brazil.

In this section, we use the same methodology described in the last section of Chapter 2 to measure the conditional gender wage gap both for whites and non-whites. Instead of applying the standard Oaxaca-Blinder decomposition, in Table 4.6, we report gender coefficients of

standard Mincer equations estimated by ethnicity. The coefficient associated with gender tells us how much more a male worker expects to earn holding constant the other characteristics. We find evidence of the existence of gender wage discrimination both for whites (in all countries) and non-whites (in all countries except Honduras and Paraguay).

Summarizing, we found that gender equality does not hold when analyzing gross gender wage gaps, especially in rural areas of some countries (e.g. Ecuador, Bolivia and Peru). We also found evidence that the gender wage gap persists when undertaking the analysis conditioned on human capital.

Table 4.5
PERCENTAGE OF PEOPLE WORKING IN AGRICULTURAL JOBS BY GENDER (MDG 3)

COUNTRY	YEAR	RURAL				URBAN			
		White		Non-White		White		Non-White	
		Female (i)	Male (ii)	Female (iii)	Male (iv)	Female (v)	Male (vi)	Female (vii)	Male (viii)
Bolivia	1997	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
	2002	0,77	0,85	0,86	0,86	0,03	0,09	0,05	0,10
Brazil	1995	0,71	0,75	0,71	0,79	0,05	0,08	0,08	0,14
	2002	0,67	0,74	0,71	0,80	0,04	0,07	0,06	0,12
Chile	2000	0,35	0,72	0,50	0,81	0,04	0,12	0,04	0,09
Colombia	1999	0,23	0,69	0,21	0,64	0,01	0,05	0,01	0,13
Costa Rica	1992	0,08	0,46	0,37	0,68	0,00	0,05	0,03	0,18
	2001	0,10	0,39	0,29	0,64	0,01	0,04	0,06	0,20
Ecuador	1998	0,47	0,65	0,80	0,62	0,03	0,10	0,01	0,01
Guatemala	2002	0,30	0,63	0,38	0,76	0,02	0,08	0,05	0,25
Haiti	2001	n.a	n.a	0,38	0,79	n.a	n.a	0,02	0,14
Honduras	2003	0,20	0,73	0,40	0,89	0,01	0,12	0,06	0,40
Mexico	1992	0,38	0,66	0,38	0,82	0,02	0,09	0,22	0,61
	2002	0,36	0,58	0,49	0,70	0,02	0,06	0,10	0,33
Nicaragua	1998	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
	2001	0,21	0,75	0,83	0,80	0,02	0,18	0,04	0,32
Panama	2002	0,14	0,62	0,72	0,93	0,00	0,05		
Paraguay	1995	0,02	0,19	0,08	0,43	0,00	0,02	0,02	0,06
	2001	0,33	0,42	0,53	0,76	0,01	0,03	0,06	0,10
Peru	2001	0,60	0,80	0,76	0,80	0,05	0,12	0,10	0,14
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Table 4.6
GENDER DISCRIMINATION BY ETHNICITY
(DIFFERENCE IN THE CONDITIONAL EXPECTATION
OF LOG HOURLY WAGES BETWEEN MEN AND WOMEN)

COUNTRY	YEAR	WHITE		NON-WHITE	
		Coefficient	t-statistics (*)	Coefficient	t-statistics (*)
		(i)	(ii)	(iii)	(iv)
Bolivia	1997	0,237	9,68	0,219	6,56
	2002	0,185	5,18	0,206	5,15
Brazil	1995	0,338	47,74	0,288	36,68
	2002	0,321	56,77	0,293	49,78
Chile	2000	0,208	36,38	0,131	3,53
Colombia	1999	0,149	18,10	0,230	6,84
Costa Rica	1992	0,165	9,87	0,335	8,86
	2001	0,135	9,76	0,116	2,65
Ecuador	1998	0,366	16,97	0,512	3,25
Guatemala	2002	0,067	2,05	0,266	3,99
Haiti	2001	n.a	n.a	n.a	n.a
Honduras	2003	0,070	3,44	-0,346	-4,88
Mexico	1992	0,218	13,37	0,606	6,84
	2002	0,191	17,43	0,177	3,66
Nicaragua	1998	0,150	6,01	0,255	1,10
	2001	0,065	2,75	0,039	0,23
Panama	2002	0,200	14,85	0,174	1,38
Paraguay	1995	0,199	7,63	0,183	3,99
	2001	0,237	6,78	-0,095	-2,54
Peru	2001	0,261	15,41	0,249	10,81
Suriname	1999	n.a	n.a	n.a	n.a

(*) Robust White t-statistics
Source: Authors' calculations based on Household Surveys

Graph 4.5
GROSS GENDER WAGE GAP
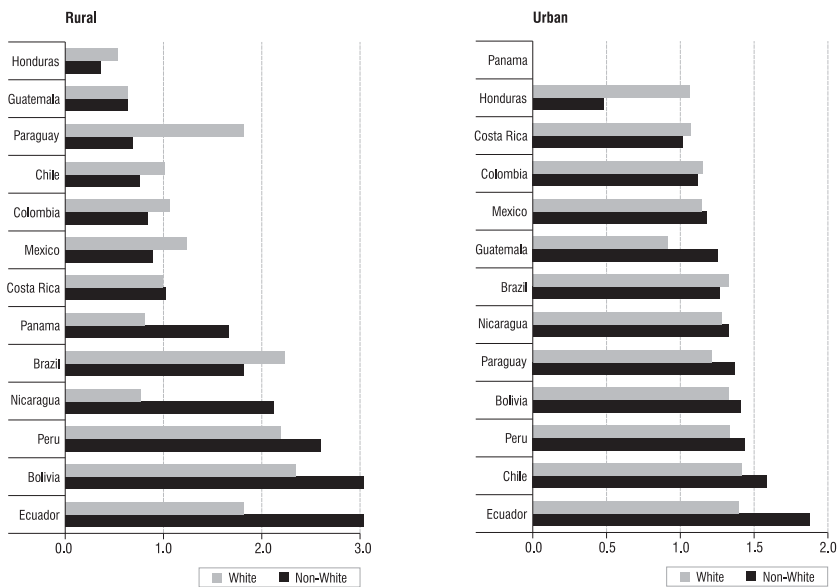
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Chapter 5: Achieving MDG 1 for Non-Whites

The first target associated with the MDG 1 is that countries should halve, between 1990 and 2015, the proportion of poor people. In the first section of this chapter, we use a simple microsimulation technique to estimate the effect, at the national level, of achieving the MDGs for the indigenous and afro-descendant populations in the Latin American and Caribbean countries in our sample. In Section 2, we use isopoverty curves to explore the implications of achieving the MDG 1 for indigenous and afro-descendant people by means of different combinations of economic growth and income redistribution.

1. A Simple Exercise

In this section, we calculate the effect at the national level of achieving the first MDG for indigenous and afro-descendant people. To that end, we simulate the implementation of a transfer program that allows the indigenous and afro-descendant people to leave poverty behind. In this and the following sections, we set the millennium target for non-whites to be half of the poverty computed in the last available year.[57] We present results for three poverty indicators –poverty incidence, poverty gap, and severity of poverty- and two poverty lines –one USD a day at PPP at purchasing power parity, and half the median income- using the household per capita income as our income measure. Graphs 5.1 to 5.3 show the results for the one USD a day poverty line.

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* All the tables included in this chapter can be downloaded from www.depeco.econo.unlp.edu.ar/cedlas

[57] For a discussion of the available alternatives see Chapter 2.

Graph 5.1
NATIONAL EFFECTS OF HALVING POVERTY FOR NON-WHITES -
POVERTY INCIDENCE
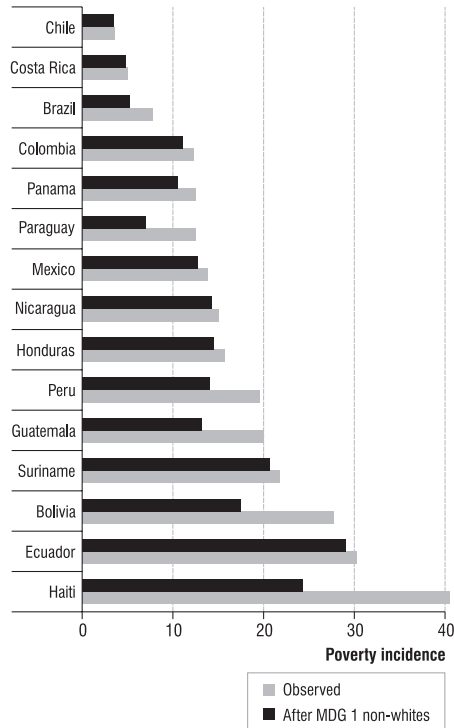
The reduction in the poverty incidence at the national level varies widely between countries, ranging from 27 percentage points in the case of Haiti (from 51% to 24%) to 0.07 percentage points for Chile (from 3.53% to 3.46%). These figures reflect that, trivially, (national) poverty reduction is higher for those countries with a larger non-white population (i.e. Haiti, Bolivia, Guatemala, Paraguay, and Brazil). Table 5.1 indicates that, for example, Bolivian poverty incidence decreases from 28 to 18 when the indigenous population is taken out of poverty using one USD a day at PPP as the poverty line. The corresponding figures for the poverty gap and the severity of poverty are 17 to 10 and 13 to 8, respectively.

Table 5.1
NATIONAL EFFECTS OF HALVING POVERTY FOR NON-WHITES
POVERTY INCIDENCE

| COUNTRY	YEAR	POVERTY LINE 1USD PPP						POVERTY LINE 50% MEDIAN INCOME					
		Observed			After achieving MDG for non-whites			Observed			After achieving MDG for non-whites		
		Whites	Non-whites	National	Whites	Non-whites	National	Whites	Non-whites	National	Whites	Non-whites	National
Bolivia	2002	16,6	37,1	27,7	16,6	18,5	17,6	18,0	39,1	28,5	18,0	19,4	18,8
Brazil	2002	5,1	10,6	7,6	5,1	5,2	5,1	17,2	36,8	26,2	17,2	18,2	17,7
Chile	2000	3,4	9,4	3,5	3,4	4,5	3,5	21,1	39,6	21,4	21,1	19,3	21,1
Colombia	1999	11,3	19,6	12,3	11,3	9,7	11,2	23,7	36,1	25,0	23,7	17,5	23,0
Costa Rica	2001	5,0	4,9	5,0	5,0	2,4	4,7	21,2	29,7	22,1	21,2	14,6	20,5
Ecuador	1998	29,0	61,0	30,3	29,0	30,5	29,1	24,8	53,7	25,9	24,8	26,8	24,8
Guatemala	2002	11,4	31,5	20,0	11,4	15,7	13,2	16,4	43,2	27,9	16,4	21,4	18,6
Haiti	2001	51,7	50,9	50,9	51,7	24,0	24,3	40,2	30,5	30,6	40,2	14,3	14,6
Honduras	2003	14,7	26,1	15,8	14,7	13,0	14,6	22,6	41,4	24,4	22,6	20,6	22,5
Mexico	2002	12,3	40,9	13,9	12,3	20,3	12,8	22,9	70,2	25,5	22,9	34,9	23,5
Nicaragua	2001	14,3	32,1	15,0	14,3	16,2	14,4	21,3	51,8	22,5	21,3	25,7	21,5
Panama	2002	9,3	54,7	12,4	9,3	27,2	10,5	23,1	80,7	27,1	23,1	40,1	24,2
Paraguay	2001	4,2	18,9	12,5	4,2	9,4	7,1	10,7	40,9	27,8	10,7	20,4	16,2
Peru	2001	14,6	26,9	19,5	14,6	13,4	14,1	21,5	34,6	26,7	21,5	17,2	19,8
Suriname	1999	20,9	35,5	21,8	20,9	17,8	20,7	31,3	41,1	31,9	31,3	20,6	30,6

Source: Authors' calculations based on Household Surveys.

Table 5.2
NATIONAL EFFECTS OF HALVING POVERTY FOR NON-WHITES
POVERTY GAP

COUNTRY	YEAR	POVERTY LINE 1USD PPP						POVERTY LINE 50% MEDIAN INCOME					
		Observed			After achieving MDG for non-whites			Observed			After achieving MDG for non-whites		
		Whites	Non-whites	National	Whites	Non-whites	National	Whites	Non-whites	National	Whites	Non-whites	National
Bolivia	2002	8,5	23,8	16,8	8,5	11,8	10,3	9,2	25,0	17,8	9,2	12,4	11,0
Brazil	2002	3,5	6,1	4,7	3,5	2,9	3,3	8,0	17,1	12,2	8,0	8,4	8,2
Chile	2000	2,3	5,2	2,4	2,3	2,4	2,3	8,5	19,2	8,6	8,5	9,3	8,5
Colombia	1999	7,2	12,0	7,8	7,2	5,8	7,1	12,5	20,1	13,3	12,5	9,7	12,2
Costa Rica	2001	3,0	2,7	2,9	3,0	1,2	2,8	9,5	11,1	9,6	9,5	5,4	9,0
Ecuador	1998	15,4	36,7	16,3	15,4	18,3	15,6	13,4	33,0	14,2	13,4	16,5	13,5
Guatemala	2002	6,0	17,0	10,7	6,0	8,4	7,0	8,7	23,9	15,2	8,7	11,9	10,0
Haiti	2001	34,7	29,7	29,7	34,7	14,0	14,1	22,9	17,4	17,4	22,9	8,1	8,3
Honduras	2003	5,4	9,3	5,7	5,4	4,6	5,3	9,0	16,4	9,7	9,0	8,1	8,9
Mexico	2002	8,9	18,8	9,5	8,9	9,3	9,0	12,9	36,8	14,2	12,9	18,2	13,2
Nicaragua	2001	6,4	16,2	6,8	6,4	7,9	6,5	9,1	22,5	9,6	9,1	11,2	9,2
Panama	2002	3,9	25,2	5,3	3,9	12,5	4,4	10,0	46,8	12,5	10,0	23,3	10,9
Paraguay	2001	2,4	8,3	5,7	2,4	4,0	3,3	4,9	20,3	13,6	4,9	10,1	7,8
Peru	2001	7,2	12,5	9,3	7,2	6,2	6,8	10,2	17,6	13,1	10,2	8,7	9,6
Suriname	1999	15,3	15,6	15,3	15,3	7,9	14,8	18,7	23,6	19,0	18,7	12,1	18,3

Source: Authors' calculations based on Household Surveys.

Table 5.3
NATIONAL EFFECTS OF HALVING POVERTY FOR NON-WHITES
SEVERITY OF POVERTY

COUNTRY	YEAR	POVERTY LINE 1USD PPP						POVERTY LINE 50% MEDIAN INCOME					
		Observed			After achieving MDG for non-whites			Observed			After achieving MDG for non-whites		
		Whites	Non-whites	National	Whites	Non-whites	National	Whites	Non-whites	National	Whites	Non-whites	National
Bolivia	2002	6,0	18,8	13,0	6,0	9,3	7,8	6,5	19,7	13,7	6,5	9,8	8,3
Brazil	2002	3,1	4,8	3,9	3,1	2,3	2,8	5,5	11,1	8,1	5,5	5,4	5,4
Chile	2000	2,0	4,0	2,0	2,0	1,9	2,0	5,2	12,7	5,3	5,2	6,1	5,2
Colombia	1999	6,0	9,4	6,4	6,0	4,5	5,8	9,1	14,8	9,7	9,1	7,1	8,9
Costa Rica	2001	2,5	2,2	2,4	2,5	1,0	2,3	6,1	6,4	6,1	6,1	3,1	5,7
Ecuador	1998	11,1	28,0	11,8	11,1	13,9	11,2	9,8	25,4	10,4	9,8	12,6	9,9
Guatemala	2002	4,2	12,1	7,6	4,2	6,0	4,9	6,0	17,0	10,7	6,0	8,4	7,0
Haiti	2001	26,7	21,7	21,7	26,7	10,2	10,3	15,6	12,7	12,7	15,6	5,9	6,0
Honduras	2003	2,8	4,7	3,0	2,8	2,2	2,8	5,0	8,7	5,3	5,0	4,2	4,9
Mexico	2002	7,9	12,2	8,1	7,9	6,0	7,8	10,1	24,3	10,9	10,1	12,0	10,2
Nicaragua	2001	4,2	10,3	4,4	4,2	5,0	4,2	5,7	14,2	6,0	5,7	6,9	5,7
Panama	2002	2,2	14,4	3,1	2,2	7,1	2,6	5,9	31,9	7,7	5,9	15,8	6,6
Paraguay	2001	1,9	5,2	3,8	1,9	2,5	2,2	3,4	13,2	8,9	3,4	6,5	5,1
Peru	2001	4,8	7,7	6,0	4,8	3,7	4,4	6,7	11,3	8,5	6,7	5,5	6,2
Suriname	1999	13,5	12,2	13,4	13,5	6,2	13,1	15,4	16,5	15,4	15,4	8,4	14,9

Source: Authors' calculations based on Household Surveys.

Graph 5.2
NATIONAL EFFECTS OF HALVING POVERTY FOR NON-WHITES
POVERTY GAP
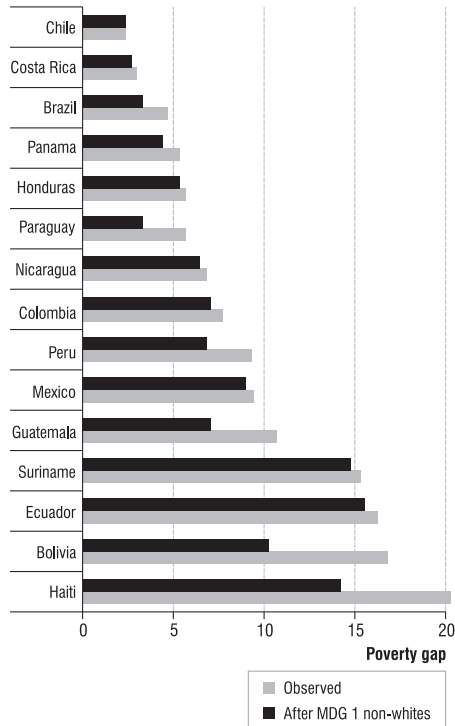
2.   Isopoverty Curves

Since the first target associated with the MDG 1 is a poverty reduction target, it is useful to think about it in terms of two basic ways in which the extent of poverty for any given income distribution can be reduced: growth in the mean and/or reduction in inequality (Ferreira and Leite, 2003). In this section, we present isopoverty curves that allow us to have an idea of the effort, in terms of income redistribution as well as economic growth, that would allow the indigenous and afro-descendant people to halve their poverty incidence. We first discuss the methodology and then show the results.

Graph 5.3
NATIONAL EFFECTS OF HALVING POVERTY FOR NON-WHITES
SEVERITY OF POVERTY
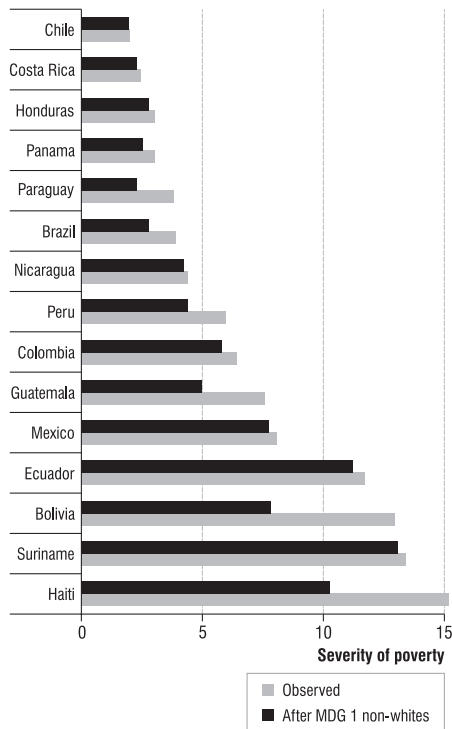
Methodology

The isopoverty curves are used in ECLAC/IPEA/UNDP (2003) to show the combinations of inequality reduction (as measured by changes in the Gini coefficient) and growth in the mean income that would allow each of the LAC countries to halve their (national) poverty incidence. These isopoverty curves have negative slope, and are convex to the origin showing that, when the mean income is higher, the reduction in inequality that is needed to meet a certain poverty incidence objective is relatively less.

In this paper, on the other hand, we estimate isopoverty curves that show the combinations of income transfer from non-poor people to

poor indigenous and afro-descendant people and growth in the mean income that would allow non-whites to halve their poverty incidence. Starting from the observed income distribution, we simulate a counterfactual in which the mean income for the whole population is β% higher and there is an income redistribution of α% of non-poor individuals' total income to indigenous peoples and afro-descendants.

We analyze two types of income transfers: (i) *targeted*, in which some non-white poor individuals receive a transfer equal to the difference between their income and the poverty line; and (ii) *egalitarian*, in which all non-white individuals receive the same amount of money independent of their income. In both cases, we choose the indigenous and afro-descendant people who receive the income transfer in a way that minimizes the amount of money that is redistributed.

Targeted transfer. In the case of the targeted transfer, the first step is to identify the poor indigenous/afro-descendant individuals that should leave poverty to meet the millennium target for this group. We assume that the non-whites who receive the transfer are those with higher incomes among the poor. If P^* is the millennium target in terms of poverty incidence for indigenous/afro-descendant people, the income transfer is received only by (*100-P**), the richer among non-whites. The individual transfer is calculated as the difference between the poverty line and the observed income. In this way, we minimize the amount of money to be transferred from rich people to non-whites in poverty.

Egalitarian transfer. The transfer that each indigenous/afro-descendant individual receives is calculated as the difference between the poverty line and the income of the poorest person in this group who should reach the poverty line to meet the millennium target for non-whites. In this case, the whole non-white poor population receives the same amount of money as a transfer from the rich population.[58]

It should be clear that only the election of the transfer beneficiaries is based on ethnicity. On the other hand, all the rich persons pay the tax to finance the income transfer. The exercises that we present in this section should be interpreted in a broad sense, meaning that the transfer from non-poor individuals to indigenous and afro-descendant peoples may not necessarily be a cash transfer.

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[58] The mathematical formulas for calculating the simulated income for each group are presented in the technical appendix to this chapter, and is available from the authors upon request.

Results

We present four isopoverty curves for each country corresponding to a combination of a transfer type and a poverty line. We consider two alternative poverty lines: (i) one USD a day at PPP; and (ii) half the median income. For the simulations, we use the household per capita income as the income measure. As the initial poverty incidence (P_0) for non-whites, we take the one observed in the latest available household survey so that the millennium target for this group is $P^* = P_0 / 2$.

As an example, the estimated isopoverty curves for Guatemala and Panama are shown in Graph 5.4 below. The vertical axis measures the income tax rate that is paid by the non-poor individuals (α). Although the previous discussion was made in terms of growth in the mean income, to ease the presentation, the horizontal axis measures the rate of annual growth between the year in which the household survey was conducted and 2015 (γ).

Each point in the isopoverty curve corresponds to a (national) income distribution in which the poverty incidence for indigenous and afro-descendant peoples is exactly equal to half the observed value in the base year with respect to the relevant poverty line. Clearly, given such disparate "initial" conditions, the various countries under study will require different combinations of economic growth and income transfer to meet their respective millennium poverty reduction target for their non-white population.

The position of an isopoverty curve shows how easy or difficult it is for a given country to meet the millennium target for its non-white population: the closer to the origin an isopoverty curve lies, the less growth and income transfer are required to reach it. In all cases, the slope of the isopoverty curves is negative (indicating that it is possible to substitute economic growth by income redistribution), and convex (indicating that the marginal rate of substitution between economic growth and income redistribution is decreasing). Their horizontal intercepts tell us how much economic growth each country would need in order to meet its own millennium poverty reduction target for non-whites if there where no income redistribution. Their vertical intercepts tell us how much income redistribution (as a share of the rich individuals' total income) each country would need in order to meet its own millennium poverty reduction target for non-whites, if its mean income remained constant (i.e. with zero growth).

Graph 5.4
ISOPOVERTY CURVES
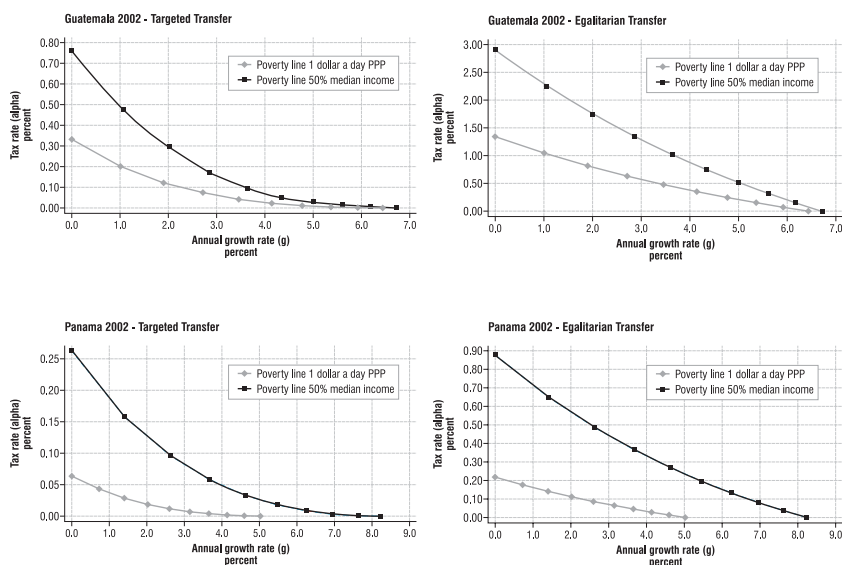
Isopoverty curves for all countries are shown in Graph 5.5. The isopoverty curves shown are relatively "flat" implying that the poverty reduction impact of even a small transfer program is equivalent to that of many percentage points in accumulated economic growth. For example, in the case of Ecuador, an annual growth rate of 6% between 1998 and 2015 is equal, in terms of poverty reduction, to an income transfer of 0.48% of the wealthy individuals' income to non-whites in poverty.

Table 5.4 (Targeted Transfer) and 5.5 (Egalitarian transfer) show in columns (i) and (ii) the intercepts of the isopoverty curves with the X-axis and Y-axis, respectively. Column (iii) shows the amount of income transferred from non-poor individuals to non-whites as a percentage of the country's total income[59] when there is no economic growth (g=0) (see also Graph 5.6). Columns (iv) and (v) present the Gini coefficient of the distribution of household per capita income before and after the transfer scheme, also computed assuming no economic growth (see also Graph 5.7).

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[59] Calculated as the sum of the household per capita income across the whole population.

Graph 5.5
ISOPOVERTY CURVES

Graph 5.5
ISOPOVERTY CURVES

Graph 5.5
ISOPOVERTY CURVES

Panama 2002 - Targeted Transfer

Tax rate (alpha) percent — Annual growth rate (g) percent

Poverty line 1 dollar a day PPP
Poverty line 50% median income

Panama 2002 - Egalitarian Transfer

Tax rate (alpha) percent — Annual growth rate (g) percent

Poverty line 1 dollar a day PPP
Poverty line 50% median income

Paraguay 2001 - Targeted Transfer

Tax rate (alpha) percent — Annual growth rate (g) percent

Poverty line 1 dollar a day PPP
Poverty line 50% median income

Paraguay 2001 - Egalitarian Transfer

Tax rate (alpha) percent — Annual growth rate (g) percent

Poverty line 1 dollar a day PPP
Poverty line 50% median income

Peru 2002 - Targeted Transfer

Tax rate (alpha) percent — Annual growth rate (g) percent

Poverty line 1 dollar a day PPP
Poverty line 50% median income

Peru 2002 - Egalitarian Transfer

Tax rate (alpha) percent — Annual growth rate (g) percent

Poverty line 1 dollar a day PPP
Poverty line 50% median income

Table 5.4
ISOPOVERY CURVES: AXIS INTERCEPTS, TRANSFER COST AND GINI COEFFICIENTS
TARGETED TRANSFER

COUNTRY	YEAR	POVERTY LINE 1 USD PPP A DAY					POVERTY LINE 50% MEDIAN INCOME				
		X axis (alpha=0)	Y axis (g=0)	Cost (*) (% national income)	Observed Gini (*)	Simulated Gini (*)	X axis (alpha=0)	Y axis (g=0)	Cost (*) (% national income)	Observed Gini (*)	Simulated Gini (*)
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
Bolivia	2002	10,76	0,92	0,90	0,624	0,613	10,13	1,07	1,04	0,624	0,611
Brazil	2002	7,18	0,07	0,07	0,595	0,594	4,38	0,52	0,50	0,595	0,589
Chile	2000	11,86	0,00	0,00	0,579	0,579	4,70	0,02	0,02	0,579	0,578
Colombia	1999	6,42	0,05	0,05	0,595	0,594	5,47	0,15	0,15	0,595	0,593
Costa Rica	2001	n.a.	n.a.	0,01	0,517	0,517	3,01	0,09	0,08	0,517	0,516
Ecuador	1998	6,01	0,13	0,12	0,606	0,604	7,45	0,10	0,10	0,606	0,604
Guatemala	2002	6,68	0,34	0,34	0,592	0,588	6,76	0,77	0,75	0,592	0,583
Haiti	2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Honduras	2003	3,56	0,04	0,04	0,563	0,563	4,13	0,11	0,10	0,563	0,562
Mexico	2002	4,29	0,04	0,04	0,548	0,547	6,15	0,19	0,19	0,548	0,546
Nicaragua	2001	4,49	0,04	0,04	0,568	0,567	4,46	0,06	0,05	0,568	0,567
Panama	2002	5,07	0,06	0,06	0,624	0,623	8,24	0,26	0,26	0,624	0,621
Paraguay	2001	3,28	0,11	0,11	0,621	0,620	5,32	0,75	0,73	0,621	0,612
Peru	2001	4,56	0,29	0,28	0,552	0,548	5,50	0,63	0,60	0,552	0,545
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

(*) The cost is calculated assuming no economic growth (g=0)
Source: Authors' calculations based on Household Surveys.

Graph 5.6
INCOME TRANSFER AS A PERCENTAGE OF THE COUNTRY'S TOTAL INCOME
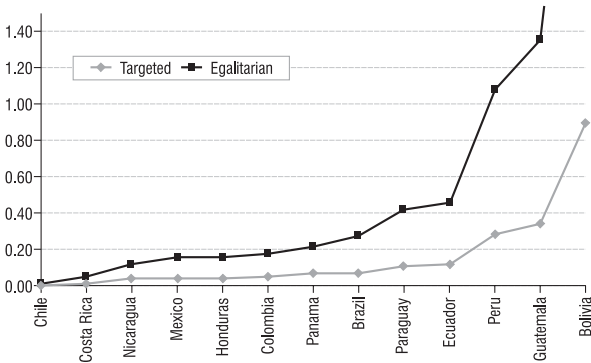
Graph 5.7
GINI COEFFICIENT BEFORE AND AFTER THE TRANSFER
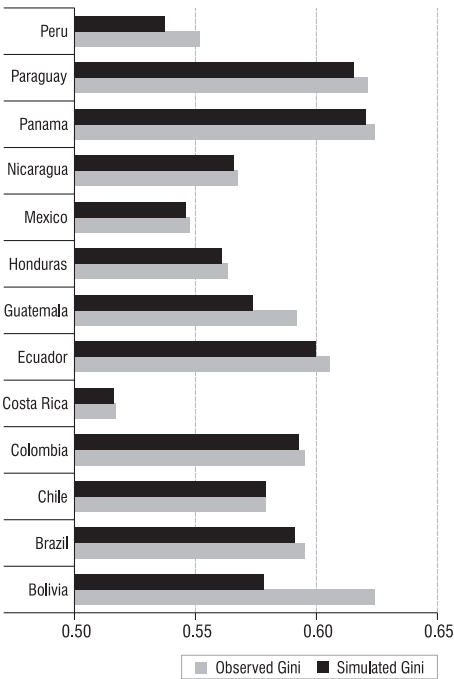
The figure in column (ii) of Table 5.4 for Peru means that for this country to meet its millennium target by means of the targeted transfer scheme described above if the poverty line is one USD a day at PPP, it would be necessary to transfer 0.29% of non-poor individuals' total income to the indigenous population if the economy were not to grow between 2002 and 2015. The similarity between columns (ii) and (iii) reflects that the share in total national income of non-whites in poverty is small.

In the case of Bolivia, for instance, the MDG 1 poverty reduction target for indigenous people would be reached, with no economic growth, with a redistribution of 3.6% of the non-poor individuals' total income in favor of indigenous people in poverty. This income transfer would reduce the Gini coefficient from 0.624 to 0.578. Alternatively, the same poverty incidence would be reached, with no income redistribution, by an average annual growth rate of 11% over the 2002-2015 period.

The most costly transfer is, by assumption, the egalitarian one where all non-whites in poverty receive the same amount of money. In this case, the income tax rate that should pay the non-poor population, if the average income remains constant and the poverty line is one USD a day at PPP, goes from 0.01% in the case of Chile to 3.6% for Bolivia. This tax rate is higher, ceteris paribus, for those countries with a larger indigenous and afro-descendant population.

The isopoverty curves for the two different poverty lines in the same country often cross (e.g. Brazil, Chile, Colombia), indicating that more growth is required to halve a lower poverty rate (with respect to a lower poverty line) than to halve a higher poverty rate (with respect to a higher poverty line). This is explained by the bell shape of the density functions for the distributions of (log) income.[60] The closer a poverty line is to the mean of a distribution, the more mass (from below) lies close to it; hence, the larger the returnof economic growth, in terms of poverty reduction, of "sliding" the density function to the right. When the remaining poverty incidence is very small (e.g. Chile), one needs a great deal of rightward movement in the mean (growth) to slide half the mass below the very flat tail, past the poverty line. This same argument explains why Chile needs a higher income growth rate (without income redistribution) than Paraguay to halve a poverty incidence for non-whites that is much lower (11.9% and 3.3%, respectively).

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[60] See ECLAC/IPEA/UNDP (2003).

Table 5.5
ISOPOVERTY CURVES: AXIS INTERCEPTS, TRANSFER COST AND GINI COEFFICIENTS
EGALITARIAN TRANSFER

COUNTRY	YEAR	POVERTY LINE 1 USD PPP A DAY					POVERTY LINE 50% MEDIAN INCOME				
		X axis (alpha=0)	Y axis (g=0)	Cost (*) (% national income)	Observed Gini (*)	Simulated Gini (*)	X axis (alpha=0)	Y axis (g=0)	Cost (*) (% national income)	Observed Gini (*)	Simulated Gini (*)
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
Bolivia	2002	10,76	3,58	3,49	0,624	0,578	10,13	4,02	3,90	0,624	0,573
Brazil	2002	7,18	0,28	0,28	0,595	0,591	4,38	1,93	1,86	0,595	0,570
Chile	2000	11,86	0,01	0,01	0,579	0,579	4,70	0,08	0,08	0,579	0,578
Colombia	1999	6,42	0,18	0,17	0,595	0,592	5,47	0,63	0,61	0,595	0,587
Costa Rica	2001	n.a.	n.a.	0,05	0,517	0,517	3,01	0,35	0,34	0,517	0,513
Ecuador	1998	6,01	0,48	0,46	0,606	0,600	7,45	0,39	0,38	0,606	0,601
Guatemala	2002	6,68	1,37	1,35	0,592	0,573	6,76	2,91	2,82	0,592	0,555
Haiti	2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Honduras	2003	3,56	0,16	0,16	0,563	0,561	4,13	0,41	0,39	0,563	0,558
Mexico	2002	4,29	0,16	0,16	0,548	0,546	6,15	0,68	0,66	0,548	0,540
Nicaragua	2001	4,49	0,12	0,12	0,568	0,566	4,46	0,25	0,25	0,568	0,565
Panama	2002	5,07	0,22	0,22	0,624	0,621	8,24	0,88	0,85	0,624	0,613
Paraguay	2001	3,28	0,42	0,42	0,621	0,615	5,32	2,92	2,83	0,621	0,583
Peru	2001	4,56	1,11	1,08	0,552	0,537	5,50	2,27	2,18	0,552	0,524
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

(*) Calculated assuming no economic growth (g=0)
Source: Authors' calculations based on Household Surveys.

Summarizing, the isopoverty curves show that the impact of an even small income redistribution from non-poor individuals to non-whites is equivalent to that of a relatively large annual growth rate until 2015. However, the simulation of a counterfactual income distribution through the mechanisms described above is a simple arithmetic exercise. There is no guarantee that it would be consistent either with (i) household behavior, and (ii) a general equilibrium of the markets in the economy (Ferreira and Leite, 2003).

References

Ferreira, Francisco H. G. and Phillippe G. Leite (2002). Policy Options for Meeting the Millennium Development Goals in Brazil: Can Micro-Simulations Help? *World Bank Policy Research Working Paper* 2975.

ECLAC/IPEA/UNDP (2003). Meeting the Millennium Poverty Reduction Targets in Latin America and the Caribbean. *Libros de la CEPAL* 70.

Chapter 6: Explaining Differences Between Whites and Non-Whites:

Microeconometric Decompositions*

In this chapter, we try to explain why indigenous and afro-descendant people in Latin American and Caribbean countries tend to be poorer and less educated than whites.[61] To this aim, we use the microeconometric decomposition technique. This technique allows us to answer several questions such as, what would the poverty incidence be if the educational levels of indigenous and afro-descendant people were those of the whites? In the first section, we apply the microeconometric decomposition technique to explain differences in poverty, while in section 2 we use this methodology to explain differences in school enrollment rates. Our results suggest that a large portion of the differences in poverty incidence between whites and non-whites is explained by education-related factors.

1.   Explaining Differences in Poverty

A countless number of factors may explain the differences in poverty rates between whites and non-whites in Latin American and Caribbean countries. In what follows, we will concentrate on six of them: i) returns to education; ii) the gender wage gap; iii) returns to experience; iv) the dispersion in the endowment of unobservable factors; v) hours of work; and vi) the education of the active population. The objective of this section is to estimate the sign and the relative magnitude of the effects of these factors for explaining differences in poverty incidence between whites and non-whites. To that aim, we adapt the microeconometric decomposition methodology first proposed by Bourguignon, Ferreira and Lustig (1998) to our case.

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 * All the tables included in this chapter can be downloaded from
    www.depeco.econo.unlp.edu.ar/cedlas
[61] For the definition of white and non-white in each country please refer to Chapter 1.

Methodology

Decompositions provide counterfactual income distributions that can be helpful to characterize differences in poverty incidence by ethnicity.[62] Microeconometric decomposition techniques have been initially applied to the study of discrimination (Blinder, 1973; Oaxaca, 1973; Oaxaca and Ramson, 1994), and more recently in the inequality literature (Juhn et al., 1993; Bourguignon et al., 2001). In the last few years, this methodology has become a usual tool for the analysis of distributional changes (Bourguignon et al., 2004). We first provide a brief explanation of this methodology and then show the results for LAC countries with regard to the differences in poverty incidence between whites and non-whites.

The basic idea of the decompositions is to simulate the income distribution of group g (non-whites) if some of its determinants were those of group g' (whites), and compare that counterfactual income distribution to the real one for group g. The difference between the two distributions can be attributed to differences between g and g' in the selected determinants. The observed and simulated income distributions can be compared in terms of some poverty index. The methodological Appendix A to this chapter provides more details on this approach.

Results

In the empirical implementation of the microeconometric decomposition, we use the household per capita income and the two USD a day at PPP poverty line for calculating the rate of poverty incidence.[63] Tables 6.1 and 6.2 show the results of the microeconometric decomposition of all countries for which we have enough information.[64] In Table 6.1, poverty incidence calculated from observed household per capita income is shown in columns (i) and (ii), while poverty from simulated household per capita income for non-whites is shown in columns (iii) to (viii).

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[62] The same methodology can also be used to make predictions on the poverty impact of future changes in economic factors and public policies.

[63] The results do not change much, as regards the relative importance of each factor in explaining poverty differences, if we use the other poverty lines and income measures considered in Chapter 2.

[64] We are not considering Nicaragua, Haiti and Suriname because there are not enough observations for both groups.

Table 6.1
**DECOMPOSITION OF THE DIFFERENCE IN POVERTY INCIDENCE
BETWEEN ETHNIC GROUPS**
HOUSEHOLD PER CAPITA INCOME - POVERTY LINE = 2 USD PPP
EFFECTS AS LEVELS

COUNTRY	YEAR	Whites observed	Non-whites observed	NON-WHITES SIMULATED-EFFECTS (LEVELS)					
				Returns to education	Gender wage gap	Returns to experience	Unobser-vables	Hours of work	Education
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Bolivia	2002	34,0	57,9	39,4	59,3	59,6	59,2	59,3	54,8
Brazil	2002	11,2	25,6	24,8	25,5	22,1	25,7	25,0	22,2
Chile	2000	7,5	20,3	24,5	19,7	17,9	20,6	19,8	19,2
Colombia	1999	22,7	34,7	32,7	36,2	32,4	35,4	33,3	31,1
Costa Rica	2001	11,6	12,8	14,3	12,3	11,6	13,4	14,6	11,5
Ecuador	1998	55,7	82,1	38,6	84,1	73,1	84,6	83,3	75,3
Guatemala	2002	20,7	5,0	47,1	54,8	50,7	50,3	56,4	48,1
Haiti	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Honduras	2003	34,2	60,4	60,3	50,5	72,7	61,3	57,1	51,3
Mexico	2002	24,4	72,0	50,6	72,6	70,7	74,8	70,7	57,5
Nicaragua	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Panama	2002	23,6	80,8	87,5	77,5	57,3	85,4	82,2	68,1
Paraguay	2001	8,8	36,7	39,1	31,2	30,7	38,1	38,2	28,8
Peru	2001	31,1	46,6	43,4	47,0	46,0	46,5	49,0	44,7
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

According to Table 6.2, for example, the observed poverty incidence for white people in Guatemala is almost 30 percentage points lower than that of the indigenous people. The returns-to-education effect in column (ii) is -3.2. This is the difference between the poverty incidence that results from applying whites' vector of educational dummies to the indigenous distribution and the actual poverty incidence for indigenous people. A negative number in columns (ii) to (viii) indicates a poverty reducing effect. A large number compared to the other figures in the column suggests a significant effect. For instance, the returns-to-education effect in Mexico is -21.4. This roughly means that the poverty incidence would decrease by 21.4 percentage points if the returns to education (i.e. the coefficients of the educational dummies in the wage equation) of the indigenous group were those of the white group. The -21.4 gives us two pieces of information: i) since it is a negative number, it implies that the returns to education effect is poverty-decreasing for the non-whites; and

ii) since it is large compared to the other number in the same row, it indicates that the difference in the returns to education is a very significant factor explaining differences in the poverty incidence between whites and indigenous peoples in Mexico.

Table 6.2
DECOMPOSITION OF THE DIFFERENCE IN POVERTY INCIDENCE BETWEEN ETHNIC GROUPS
HOUSEHOLD PER CAPITA INCOME - POVERTY LINE = 2 USD PPP
EFFECTS AS DIFFERENCES

COUNTRY	YEAR	Actual difference	NON-WHITES SIMULATED-EFFECTS (LEVELS)						
			Returns to education	Gender wage gap	Returns to experience	Unobser-vables	Hours of work	Education	Rest
		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Bolivia	2002	-23,9	-18,4	1,4	1,7	1,4	1,4	-3,1	-8,2
Brazil	2002	-14,4	-0,8	-0,1	-3,5	0,1	-0,6	-3,4	-6,2
Chile	2000	-12,8	4,2	-0,6	-2,4	0,3	-0,4	-1,0	-12,8
Colombia	1999	-12,0	-2,0	1,5	-2,4	0,7	-1,4	-3,6	-4,7
Costa Rica	2001	-1,2	1,5	-0,5	-1,2	0,6	1,8	-1,3	-2,1
Ecuador	1998	-26,5	-43,6	2,0	-9,1	2,5	1,1	-6,8	27,4
Guatemala	2002	-29,6	-3,2	4,5	0,4	0,0	6,1	-2,0	-35,1
Haiti	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Honduras	2003	-26,3	-0,2	-9,9	12,3	0,9	-3,3	-9,1	-17,0
Mexico	2002	-47,5	-21,4	0,7	-1,2	2,9	-1,2	-15	-12,7
Nicaragua	2001	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Panama	2002	-57,2	6,6	-3,3	-23,5	4,6	1,4	-13	-30,2
Paraguay	2001	-27,8	2,4	-5,4	-6,0	1,4	1,5	-7,9	-13,8
Peru	2001	-15,5	-3,2	0,4	-0,5	0,0	2,4	-1,8	-12,7
Suriname	1999	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

The rest of this section is devoted to study the effects on poverty incidence of several potential income determinants.

Returns to education. Differences in the returns to education imply a wage gap between whites and non-whites, which, in turn, would imply differences in poverty. In fact, the differences in the returns to education seem to have been one of the most important factors in explaining differences in poverty incidence by ethnicity. In eight out of twelve countries, the returns-to-education effect is poverty-decreasing. In countries like Bolivia, Mexico, and Ecuador, if the returns to education

of indigenous people were equal to those of whites, the poverty incidence for indigenous peoples would be more than 10 percentage points lower. In Brazil, Colombia, Peru, Guatemala, and Honduras, the difference in the returns to education also has a negative impact of about 5 percentage points in the indigenous and afro-descendant poverty incidence. For the remaining countries, on the other hand, the sign of the returns-to-education effect is positive, meaning that non-white workers show higher returns to education than their white counterparts.[65]

Gender wage gap. If the gender wage gap is higher for whites than for non-whites[66], we expect a poverty decreasing effect, as the simulated income for male indigenous and afro-descendant people will be higher while everything else will be kept constant at the observed values. This is the case in countries such as Costa Rica, Honduras, Paraguay and Panama. On the other hand, in Bolivia, Colombia, Ecuador and Guatemala, the male dummy in the wage equations is higher for non-whites than for whites, meaning that the gender wage gap has a poverty-increasing effect.

Experience (age). Age is used as a proxy for experience in the labor market. The coefficient of age and age squared in the log hourly equations show an inverted U shaped wage-age profile both for whites and non-whites. If the returns to experience are higher for white workers than for the indigenous and afro-descendant population, we expect a poverty-reducing effect of importing whites' coefficients into non-whites' hourly earnings. The comparison of the regression coefficients for age and age squared show the largest difference by ethnicity (in favor of white workers) in Panama, Ecuador, Paraguay, Brazil, Chile and Colombia. It is for these same countries that the returns-to-experience effect is poverty-reducing. On the other hand, the returns-to-experience effect is poverty-increasing in Honduras and Bolivia.

Unobservables. The error term in the earnings equations is usually interpreted as capturing the joint effect of the endowment of non-observable factors (like natural school quality, ability and labor market connections) and its market value on earnings. In general terms, we assume that the variance of this error term captures the contribution of dispersion in unobservable factors to poverty incidence. Importing whites' variance of residuals from the wage equation into that of non-whites translates into a poverty-increasing effect in all countries. This

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[65] At least for some relevant educational levels.

[66] As shown in Chapter 4, the coefficients of the male dummy in the wage equations are positive for whites and non-whites in all countries except Honduras.

may indicate that there is greater heterogeneity amongst white workers along unobserved dimensions such as ability, than among their indigenous and afro-descendant counterparts.

Hours of work. In those countries where whites tend to work more hours than non-whites, the hours of work effect will be poverty-decreasing. Importing whites' coefficients for the hours of work equation lowers poverty incidence for non-whites in Colombia, Honduras and Mexico. On the other hand, the hours of work effect is poverty increasing for Bolivia, Costa Rica, Ecuador, Guatemala and Peru.[67]

Education. The differences in the education structure of the active population are important factors in the twelve countries of our sample. The indigenous and afro-descendant active populations tend to be less educated than their white counterparts. These differences have a negative effect on non-whites' poverty incidence in eleven countries. The largest effects are observed in Mexico and Panama, where the education effect explains 15 and 13 percentage points of the difference in poverty incidence between whites and non-whites. In Honduras, Paraguay and Ecuador, the education effect explains more than 5 percentage points of the difference in poverty incidence by ethnicity.

Other factors and interactions. Differences in the factors considered explain some, but not all of the differences in poverty incidence by ethnicity. The last column in Table 6.2 is calculated as a residual- it encompasses the effects of interactions terms and of many factors not considered in the analysis. According to Table 6.2, these terms are large for some countries, implying that those other factors are important. This question deserves further investigation.

Summarizing, the two most important factors that seem to be poverty-increasing for non-whites are related to education: the returns-to-education effect, and the education effect. However, in some countries, we were able to identify some other relevant factors (e.g. returns to experience in Panama and Ecuador). In Graph 6.1, we compare the observed and simulated distributions of (log) household per capita income for these two effects in Bolivia and Mexico.

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[67] To assess the relevance of differences in hours of work on poverty, the distribution of the base group is simulated using the parameters of the hours of work equations. Some people do not work with the base group parameters but do work in the simulation. For those individuals, we simulate the base group hours of work and wages using the base year parameters and adding an error term obtained, following the procedure described in Gasparini et al. (2004). This error term is used to simulate hours of work.

The graph clearly shows the poverty-reducing impact of both the returns-to-education and education effects. We see that the four simulated income distributions are everywhere at the right of the observed income distributions. In Graph 6.2, we replicate the analysis for the rest of the countries in our sample.

Graph 6.1
DISTRIBUTION OF LOG HOUSEHOLD PER CAPITA INCOME
OBSERVED AND SIMULATED
KERNEL ESTIMATES OF THE DENSITY FUNCTIONS
NOTE: THE VERTICAL LINE REPRESENTS THE POVERTY LINE

Bolivia 2002

Observed
Returns to education effect
Education effect

Log household per capita income

Mexico 2002

Observed
Returns to education effect
Education effect

Log household per capita income

Graph 6.2
DISTRIBUTION OF LOG HOUSEHOLD PER CAPITA INCOME
OBSERVED AND SIMULATED
KERNEL ESTIMATES OF THE DENSITY FUNCTIONS
NOTE: THE VERTICAL LINE REPRESENTS THE POVERTY LINE

Brazil 2002

Chile 2001

Colombia 1999

Costa Rica 2001

Ecuador 1998

Guatemala 2002
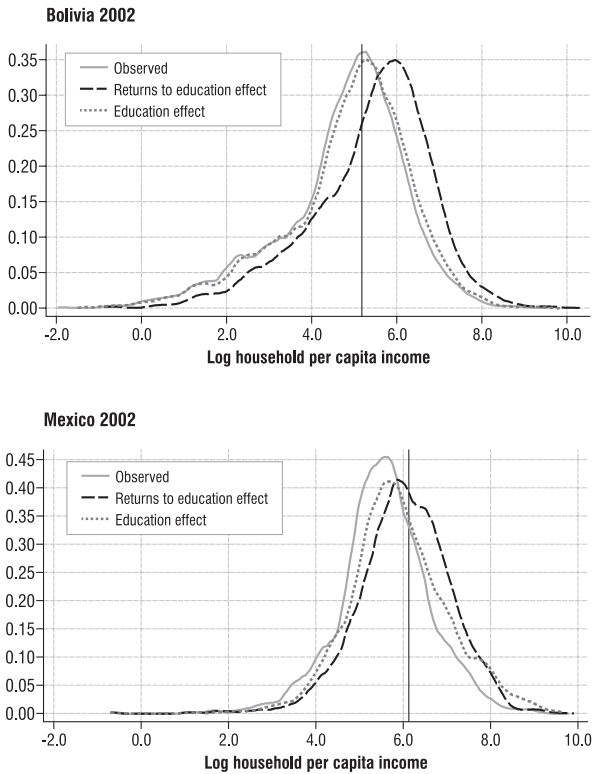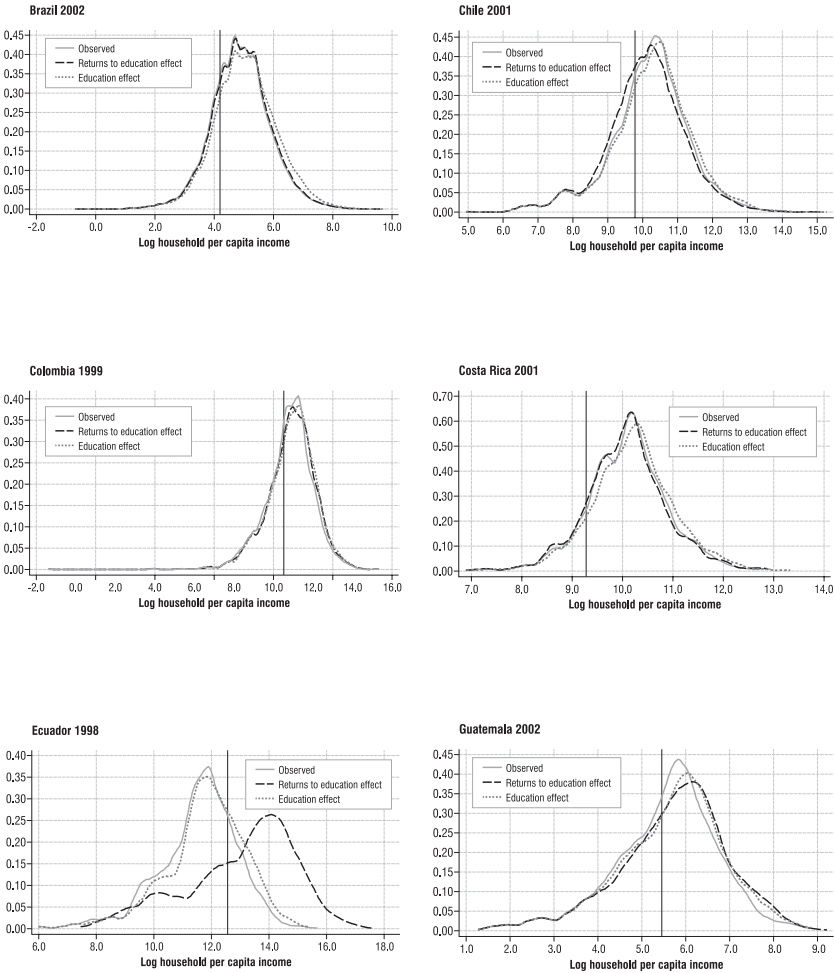
Graph 6.2
DISTRIBUTION OF LOG HOUSEHOLD PER CAPITA INCOME
OBSERVED AND SIMULATED
KERNEL ESTIMATES OF THE DENSITY FUNCTIONS
NOTE: THE VERTICAL LINE REPRESENTS THE POVERTY LINE
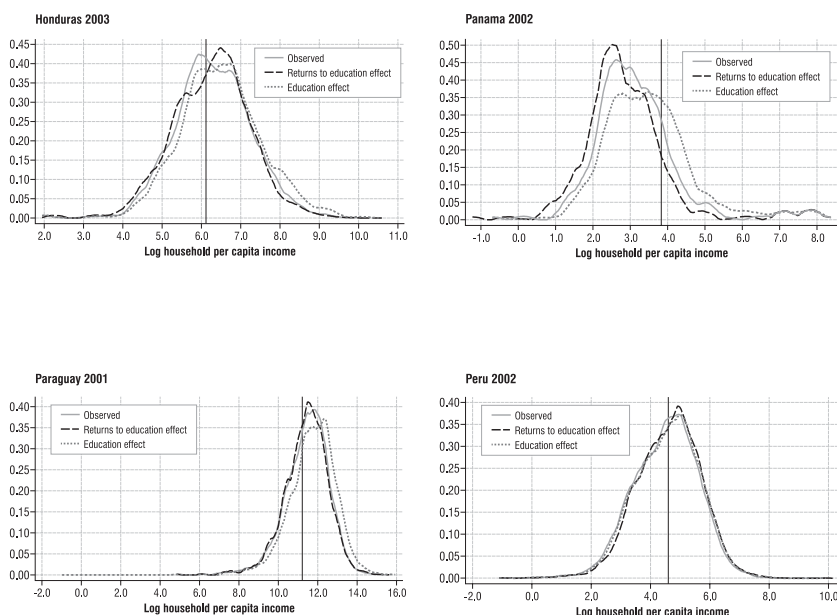
2. Explaining Differences in School Attendance

In this section, we implement the methodology proposed in Gasparini (2000) for the microeconometric decomposition of differences in the rates of school attendance by ethnicity for three education levels: primary; secondary; and tertiary. The method quantifies the fraction of the school attendance differential that can be attributed to a difference in characteristics between two groups, and the proportion that is due to differences in the way those characteristics are linked to the schooling decision (*i.e.* the difference in coefficients associated with those characteristics in a regression framework).

Methodology

We combine micro data from the last available household surveys with an econometric modeling of the probability of being at school. As the first step, we estimate a probit model for each ethnic group within each education level. This is a binary choice model where the dependent variable equals 1 if the individual attends school and 0 otherwise. We consider the following age-groups in each education level: (i) *primary*, between 6 and 12; (ii) *secondary*, between 13 and 17; and (iii) *tertiary*, between 18 and 30. The independent variables are: household per capita income, household head's educational level and age, gender, age and age squared, household size, and a urban/rural dummy. For the tertiary educational level we add a marital status dummy.

The differences in school attendance rates by ethnicity can be explained due to differences in the observable characteristics of the groups and to differences in their parameters: (i) the characteristics effect answers the question regarding what the school attendance rate for indigenous and afro-descendant individuals would be if their characteristics were those of the white individuals; and (ii) the parameters effect captures differences in enrollment rates as a consequence of differences in parameters keeping everything else fixed.

The characteristic effect would be larger if the difference in school enrollment between white and non-white children is mainly driven by differences in some of the "characteristics" of these groups, including household income, parental education, household size, and location. Instead, differences might mainly be driven by other factors (e.g. preferences) that imply different schooling decisions by ethnicity, even in the case of similar "characteristics". In this case, the parameter effect would be larger in our decomposition.

Alternatively, both of the effects can be captured using each of the groups as the base group. It can be shown that the observed differences in school attendance equal the sum of the averages (changing the base group) of the characteristics and parameters effect plus a residual that is likely to be insignificant. See Appendix B for a more formal explanation.

Results

To implement the decomposition, we need observed and simulated rates of school attendance for each group. These are shown in Table 6.3, 6.4, and 6.5 for primary, secondary, and superior education levels, respectively.

Table 6.3
OBSERVED AND SIMULATED RATES OF SCHOOL ATTENDANCE
PRIMARY

COUNTRY	YEAR	PRIMARY			
		Whites		Non-Whites	
		Observed	Using non-whites coef.	Observed	Using whites coef.
		(i)	(ii)	(iii)	(iv)
Bolivia	2002	0,938	0,958	0,936	0,917
Brazil	2002	0,970	0,965	0,953	0,957
Chile	2000	0,988	0,979	0,975	0,973
Colombia	1999	0,903	0,906	0,892	0,883
Costa Rica	2001	0,962	0,963	0,958	0,947
Ecuador	1998	0,917	0,909	0,890	0,840
Guatemala	2002	0,873	0,828	0,775	0,835
Haiti	2001	n.a	n.a	n.a	n.a
Honduras	2003	0,878	0,913	0,895	0,842
Mexico	2002	0,973	0,971	0,965	0,954
Nicaragua	2001	0,884	0,878	0,897	0,835
Panama	2002	0,974	0,898	0,847	0,910
Paraguay	2001	0,973	0,960	0,946	0,902
Peru	2001	0,967	0,977	0,969	0,956
Suriname	1999	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Table 6.4
OBSERVED AND SIMULATED RATES OF SCHOOL ATTENDANCE
SECONDARY

COUNTRY	YEAR	SECONDARY			
		Whites		Non-Whites	
		Observed	Using non-whites coef.	Observed	Using whites coef.
		(i)	(ii)	(iii)	(iv)
Bolivia	2002	0,482	0,516	0,451	0,402
Brazil	2002	0,327	0,268	0,181	0,245
Chile	2000	0,481	0,480	0,379	0,385
Colombia	1999	0,664	0,617	0,524	0,558
Costa Rica	2001	0,560	0,530	0,467	0,493
Ecuador	1998	0,580	0,433	0,362	0,392
Guatemala	2002	0,513	0,385	0,250	0,339
Haiti	2001	n.a	n.a	n.a	n.a
Honduras	2003	0,396	0,323	0,162	0,247
Mexico	2002	0,670	0,728	0,582	0,525
Nicaragua	2001	0,395	0,249	0,233	0,301
Panama	2002	0,730	0,310	0,209	0,399
Paraguay	2001	0,775	0,649	0,517	0,574
Peru	2001	0,675	0,724	0,680	0,625
Suriname	1999	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

Table 6.5
OBSERVED AND SIMULATED RATES OF SCHOOL ATTENDANCE
TERTIARY

COUNTRY	YEAR	TERTIARY			
		Whites		Non-Whites	
		Observed	Using non-whites coef.	Observed	Using whites coef.
		(i)	(ii)	(iii)	(iv)
Bolivia	2002	0,202	0,214	0,142	0,140
Brazil	2002	0,136	0,108	0,046	0,065
Chile	2000	0,082	0,092	0,034	0,033
Colombia	1999	0,114	0,104	0,057	0,058
Costa Rica	2001	0,110	0,077	0,041	0,062
Ecuador	1998	0,092	0,037	0,024	0,026
Guatemala	2002	0,141	0,151	0,071	0,067
Haiti	2001	n.a	n.a	n.a	n.a
Honduras	2003	0,078	0,043	0,007	0,019
Mexico	2002	0,066	0,066	0,018	0,022
Nicaragua	2001	0,093	0,180	0,115	0,150
Panama	2002	0,156	0,029	0,012	0,014
Paraguay	2001	0,208	0,143	0,059	0,082
Peru	2001	0,132	0,155	0,122	0,104
Suriname	1999	n.a	n.a	n.a	n.a

Source: Authors' calculations based on Household Surveys.

The rate of school attendance in the primary level for afro-descendants in Panama was 85% in 2002. That rate would have been 91% if the parameters that link individual characteristics to the school attendance decision had been equal to those of whites. With fixed parameters at afro-descendants' values and the whites' characteristics, that rate would have been 90%.

Comparing columns (ii) and (iii) allows a first evaluation of the characteristics effect, keeping the parameters fixed in a given group. The differences in the individual characteristics of children who are of age for attending primary school explains a large part of the difference

between rates of school attendance for whites and non-whites in all
countries. This conclusion applies to the three educational levels.
Comparing columns (iii) and (iv) gives an idea of the parameters effect.
The simulated rates of primary school attendance for non-whites are
higher in only three (i.e. Brazil, Guatemala and Panama) out of thirteen
countries. The results of the decompositions are shown in Table 6.6, 6.7,
and 6.8 for primary, secondary, and tertiary levels, respectively.

Table 6.6
DECOMPOSITION OF THE RATE OF SCHOOL ATTENDANCE
PRIMARY

COUNTRY	YEAR	PRIMARY						
		Base group non-whites		Base group whites		Average		Actual
		Parameters (i)	Characteristics (ii)	Parameters (iii)	Characteristics (iv)	Parameters (v)	Characteristics (vi)	difference (*) (vii)
Bolivia	2002	0,019	-0,022	0,019	-0,021	0,019	-0,022	-0,002
Brazil	2002	-0,004	-0,012	-0,005	-0,013	-0,005	-0,012	-0,017
Chile	2000	0,002	-0,004	-0,009	-0,014	-0,003	-0,009	-0,012
Colombia	1999	0,009	-0,014	0,002	-0,020	0,006	-0,017	-0,011
Costa Rica	2001	0,011	-0,005	0,001	-0,015	0,006	-0,010	-0,004
Ecuador	1998	0,050	-0,018	-0,009	-0,077	0,021	-0,048	-0,027
Guatemala	2002	-0,060	-0,053	-0,045	-0,038	-0,052	-0,046	-0,098
Haiti	2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Honduras	2003	0,053	-0,018	0,034	-0,036	0,044	-0,027	0,017
Mexico	2002	0,011	-0,006	-0,002	-0,019	0,004	-0,013	-0,008
Nicaragua	2001	0,061	0,019	-0,006	-0,048	0,028	-0,015	0,013
Panama	2002	-0,063	-0,051	-0,076	-0,065	-0,070	-0,058	-0,128
Paraguay	2001	0,044	-0,013	-0,013	-0,070	0,015	-0,042	-0,027
Peru	2001	0,013	-0,008	0,010	-0,011	0,011	-0,009	0,002
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on household surveys.

Table 6.7
DECOMPOSITION OF THE RATE OF SCHOOL ATTENDANCE
SECONDARY

COUNTRY	YEAR	SECONDARY						Actual difference (*)
		Base group non-whites		Base group whites		Average		
		Parameters (i)	Characteristics (ii)	Parameters (iii)	Characteristics (iv)	Parameters (v)	Characteristics (vi)	(vii)
Bolivia	2002	0,049	-0,065	0,034	-0,080	0,041	-0,072	-0,031
Brazil	2002	-0,063	-0,087	-0,059	-0,082	-0,061	-0,085	-0,146
Chile	2000	-0,005	-0,101	-0,001	-0,096	-0,003	-0,098	-0,102
Colombia	1999	-0,034	-0,093	-0,047	-0,106	-0,041	-0,099	-0,140
Costa Rica	2001	-0,026	-0,063	-0,030	-0,067	-0,028	-0,065	-0,093
Ecuador	1998	-0,030	-0,071	-0,147	-0,188	-0,088	-0,129	-0,218
Guatemala	2002	-0,089	-0,135	-0,128	-0,174	-0,109	-0,154	-0,263
Haiti	2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Honduras	2003	0,085	-0,160	-0,073	-0,149	-0,079	-0,155	-0,234
Mexico	2002	0,057	-0,146	0,058	-0,145	0,057	-0,146	-0,088
Nicaragua	2001	-0,069	-0,017	-0,145	-0,094	-0,107	-0,055	-0,162
Panama	2002	-0,190	-0,102	-0,419	-0,331	-0,305	-0,216	-0,521
Paraguay	2001	-0,057	-0,132	-0,126	-0,201	-0,092	-0,166	-0,258
Peru	2001	0,055	-0,044	0,049	-0,050	0,052	-0,047	0,005
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on household surveys.

In columns (i) and (ii) the non-white group is taken as the base group; in columns (iii) and (iv) the white group is the base group; and in columns (v) and (vi) the average of the two simulations is reported. Column (vii) shows the actual difference in the rate of school attendance between groups. For instance, the rate of school attendance in the secondary level in Brazil is 14.6 percentage points lower for afro-descendants than for whites. The average of computing the characteristics effects while changing the base group gives a value of 8.5%, and the value of computing the parameters effect while changing the base group is 6.1%.

Table 6.8
DECOMPOSITION OF THE RATE OF SCHOOL ATTENDANCE
TERTIARY

COUNTRY	YEAR	TERTIARY						
		Base group non-whites		Base group whites		Average		Actual
		Parameters (i)	Characteristics (ii)	Parameters (iii)	Characteristics (iv)	Parameters (v)	Characteristics (vi)	difference (*) (vii)
Bolivia	2002	0,002	-0,072	0,011	-0,063	0,007	-0,067	-0,060
Brazil	2002	-0,019	-0,062	-0,028	-0,071	-0,024	-0,067	-0,090
Chile	2000	0,001	-0,057	0,010	-0,049	0,005	-0,053	-0,048
Colombia	1999	-0,001	-0,046	-0,010	-0,056	-0,006	-0,051	-0,057
Costa Rica	2001	-0,021	-0,036	-0,033	-0,048	-0,027	-0,042	-0,069
Ecuador	1998	-0,002	-0,013	-0,054	-0,066	-0,028	-0,040	-0,068
Guatemala	2002	0,004	-0,079	0,009	-0,074	0,007	-0,077	-0,070
Haiti	2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Honduras	2003	-0,012	-0,036	-0,035	-0,059	-0,024	-0,048	-0,071
Mexico	2002	-0,004	-0,048	0,000	-0,044	-0,002	-0,046	-0,048
Nicaragua	2001	-0,035	-0,065	0,087	0,057	0,026	-0,004	0,022
Panama	2002	-0,001	-0,016	-0,127	-0,142	-0,064	-0,079	-0,143
Paraguay	2001	-0,023	-0,084	-0,065	-0,126	-0,044	-0,105	-0,149
Peru	2001	0,018	-0,033	0,022	-0,029	0,020	-0,031	-0,011
Suriname	1999	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' calculations based on household surveys.

From Table 6.6 to 6.8 it can be seen that the characteristics effects are always negative and, in most cases, they are larger than the parameters effects.[68] This implies that differences in characteristics such as household per capita income, parental education, household size, and location are the most important factors behind the differences in enrollment rates between whites and non-whites. Differences in the way people make schooling decisions based on their characteristics (driven, for instance, by preferences) seem a less important source of differences in enrollment rates between ethnic groups.

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[68] The differences between rates of school attendance are larger for the secondary level. It is for this education level that the parameters effect is larger.

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Methodological Appendix A

In this Appendix, we provide more details on the implementation of the microeconometric decomposition technique.[69]

Let Y_{ig} be the labor income of individual i in group g, which can be written as a function F of the vector X_{ig} of individual observable characteristics affecting wages and employment, the vector ε_{ig} of unobservable characteristics, the vector β_g of parameters that determine market hourly wages and the vector λ_g of parameters that affect employment outcomes (participation and hours of work). Then,

$$Y_{ig} = F(X_{ig}, \varepsilon_{ig}, \beta_g, \lambda_g) \qquad (6.1)$$

$$i = 1, \ldots, N_g$$

where N_g is total population in group g. The distribution of individual labor income can be represented as

$$D_g = \{Y_{1g} \ldots, Y_{Ng}\} \qquad (6.2)$$

We can simulate individual labor incomes by changing one or some arguments in equation (6.1). For instance, the following expression represents labor income that individual i in group g would have earned if the parameters determining wages had been those of group g', keeping everything else constant.

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[69] The following explanation is based on Gasparini et al. (2004).

$$Y_{ig}(\beta_{g'}) = F(X_{ig}, \varepsilon_{ig}, \beta_{g'}, \lambda_g) \tag{6.3}$$

$$i = 1, \ldots, N_g$$

More generally, we can define where k is any set of arguments in (6.1). Hence, the simulated distribution will be

$$D_g(k_{g'}) = \{Y_{1g}(k_{g'}), \ldots, Y_{Ng}(k_{g'})\} \tag{6.4}$$

The contribution to the overall change in the distribution of a change in k between groups g and g', holding all else constant, can be obtained by comparing (6.2) and (6.4).

The previous discussion refers to the distribution of earnings. However, it is more relevant from a social point of view to study the distribution of household income, since a person's utility usually depends not on her earnings but on her household income and the demographic composition of her family. Equivalent household income for each individual in household h in group g is defined as

$$Y_{hg}^q = \sum_{j \in hg} \frac{(Y_{jg} + Y_{jg}^0)}{\sum_{j \in hg} a_{jg}} \tag{6.5}$$

$$h = 1, \ldots, H_g$$

where Y^q stands for equivalent household income, h indexes households, Y^0 is income from other sources, and a stands for the equivalent adult of each individual. The distribution of equivalent household income for the population of N_g individuals in group g can be expressed as

$$D_g^q = \{Y_{1g}^q \ldots, Y_{Ng}^q\} \tag{6.6}$$

Changing argument k to its value for group g' yields the following simulated equivalent household income for group g:

$$Y_{hg}^q(k_{g'}) = \sum_{j \in ht} \frac{(Y_{jg}(k') + Y_{jg}^0)}{\sum\limits_{j \in ht} a_{jg}} \tag{6.7}$$

$$h = 1, \ldots, H_g$$

Hence, the simulated distribution is

$$D_g^q = \{Y_{1g}^q(k_{g'}), \ldots, Y_{Ng}^q(k_{g'})\} \tag{6.8}$$

Although we can make the comparisons in terms of the whole distributions, in order to study differences in poverty between groups, we compare poverty indices

$$\Pi(D^q, z)$$

where Π is a poverty indicator that depends on the distribution of equivalent household income D^q and the poverty line z. Therefore, the effect of a change in argument k on poverty, holding all else constant, is given by

$$\Pi(D_g^q(k_{g'}), z) - \Pi(D_g^q, z) \tag{6.9}$$

As mentioned above, this section is devoted to discussing the following effects:

Returns to education: it measures the effect of changes in the parameters that relate education to hourly wages on poverty.

Gender wage gap: the same as (i) but with gender instead of education.

Returns to experience: the same as (i) but with experience (age).

Endowment and returns to unobservable factors: measures the effect of changes in the unobservable factors and their remunerations affecting hourly wages on poverty.

Hours of work and employment: measures the effect of changes in the parameters that determine hours of work and labor market participation on poverty.

Education: measures the effect of changes in the educational levels of the population on poverty.

In order to compute expression (6.9) we need to have estimates of parameters and the residual term. Also, since we do not have panels, we need a mechanism to replicate the structure of observable and unobservable characteristics of one group into the population of another group. Our estimation strategy follows closely Gasparini et al. (2004)- the reader is referred to that paper for technical details.

The estimate of wage and hours of work equations is a key step in the microeconometric decomposition technique. We split the sample of workers into four groups according to two criteria: ethnicity (whites and non-whites) and individual role in the household (household heads and other members of the family). Thus, we estimate two pairs of equation for whites and non-whites.[70] We restrict the analysis to labor income for two reasons: i) the household surveys we are using have various deficiencies in capturing capital income; and ii) modeling capital income and retirement payment is not an easy task, especially considering the scarce information contained in the surveys. In the estimate, we restrict our sample by ignoring those households whose heads are older than 65 or receive retirement payments.

We estimate (using ordinary least squares[71]) the log of hourly earnings (log of wages) as a function of the typical human capital proxies as education and age (and its squared), and other controls such as gender, and a urban/rural dummy. As a measure of educational attainment, we use six educational categories[72]: primary incomplete[73] and complete, secondary incomplete and complete , and college complete and incomplete.

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[70] The results of both sets of equations are available from the authors upon request.

[71] The choice of OLS instead of other methods that allow controlling for sample selection is based on the consideration that, in absence of a good model for the selection equation, controlling for sample selection is not a dominant practice.

[72] Due to lack of information, we were not able to correct for educational quality.

[73] This category includes those persons with no education.

It is assumed that labor market participation choices are made within the household in a sequential fashion. Other members of the family take the heads' labor status into consideration to decide whether to enter the labor market or not. We estimate (using a standard censored regression tobit) hours of work as a function of education, age and age squared, gender, location (urban/rural), marital status, number of children, a dummy that indicates if the individual attends school, and a dummy that indicates if the household head is unemployed.

Unobservable characteristics affecting wages are modeled as regression error terms of the wage equations. In order to simulate the effect of differences by ethnicity in those unobservables, the estimated residuals of the wage equation of non-whites are rescaled to reflect whites' error term variance.

Methodological Appendix B

This section provides more details on the methodology applied in section 2 of this chapter. The methodology uses an econometric modeling of the individual decision of attending school (Y_{ig}) to characterize differences between whites and non-whites in their aggregate school enrollment rate (Y_g). The method begins by modeling Y_{ig}, as a function H of a vector of observable individual characteristics X_{ig}, a parameter vector β_g and unobservable factors e_{ig}. Assuming that the form of function H is the same for both groups, Y_{ig} can be written as:

$$Y_{ig} = H(X_{ig}, \beta_g, \varepsilon_{ig}) \qquad\qquad (6.10)$$

The function $H(.)$, the parameters b_g and the random terms are unobservable. The usual procedure of estimation implies assuming some functional form for $H(.)$, estimating the parameters b_g through some econometric technique and obtaining the unobservable factors (and their returns) as residual. Formally, the individual value of Y_{ig} can be expressed as:

$$Y_{ig} = \hat{H}(X_{ig}, \hat{\beta}_g) + \hat{\varepsilon}_{ig} \qquad\qquad (6.11)$$

where ^ stands for estimated (or simulated in the case of the function H). From the preceding definitions and assuming for simplicity $N_g = N_{g'} = N$, the difference in the value of Y between g and g' is

$$\Delta Y = \frac{1}{N} \sum_{i=1}^{N} [\hat{H}(X_{ig'}, \hat{\beta}_g) + \hat{\varepsilon}_{ig'}] - \frac{1}{N} \sum_{i=1}^{N} [\hat{H}(X_{ig}, \hat{\beta}_g) + \hat{\varepsilon}_{ig}] \qquad (6.12)$$

The aggregate variable can differ basically due to differences in the observable characteristics of the populations and to differences in the β parameters.

Characteristics effect. What would have been the difference in Y if only the observable characteristics of the g group were those of the g' group? The "characteristics effect" measures this counterfactual difference. Taking g as the base group, this effect is computed as the difference between the value that would have resulted if only the observable characteristics of the g group were those of the g' group and the observed value of the aggregate variable for group g. Analytically,

$$CE = \frac{1}{N} \sum_{i=1}^{N} [\hat{H}(X_{ig}, \hat{\beta}_g) + \hat{\varepsilon}_{ig'}] - \frac{1}{N} \sum_{i=1}^{N} \hat{H}(X_{ig}, \hat{\beta}_g) + \hat{\varepsilon}_{ig} \quad (6.13)$$

Equation (6.13) isolates the effect of assigning individual characteristics from group g to group g', keeping the rest constant at group g values. The same exercise can be done taking g' as the base group. In that case, the characteristics effect (denoted as CE_2) is computed as the difference between the observed aggregate variable for group g' minus the simulated value with group g characteristics and group g' parameters and residuals.

Parameters effect. This effect captures the change in Y as a consequence of changes in parameters β, keeping all the rest fixed. Taking g as the base group it can be written as

$$PE_1 = \frac{1}{N} \sum_{i=1}^{N} [\hat{H}(X_{ig}, \hat{\beta}_g) + \hat{\varepsilon}_{ig'}] - \frac{1}{N} \sum_{i=1}^{N} \hat{H}(X_{ig}, \hat{\beta}_g) + \hat{\varepsilon}_{ig} \quad (6.14)$$

In a similar way, this effect can be computed by taking g' as the base group (denoted as PE_2). It is easy to show that the difference between groups in the aggregate variable equals the sum of the averages (changing the base group) of the characteristics and parameters effects plus a residual that is likely to be insignificant.

$$\Delta Y = \frac{CE_1 + CE_2}{2} + \frac{PE_1 + PE_2}{2} + R \quad (6.15)$$

where $R = 1/N \sum_{i=1}^{N} \hat{\varepsilon}_{ig'} - 1/N \sum_{i=1}^{N} \hat{\varepsilon}_{ig}$. In models where R could be different from zero (e.g. probit), in most practical cases, it will be insignificant.

The only inputs required by the decomposition are observed and simulated aggregate variables. These are shown in the rows of Tables 6.3 to 6.5.

Chapter 7*: Policies to Meet the MDGs

The underlying causes of afro-descendant and indigenous poverty are largely structural. Inequity often manifests itself in the structure of land tenure, with rural indigenous peoples living on plots that are too small to be economically viable or in the least productive marginal areas of the region. In addition, inequity manifests itself in terms of discrimination and inequality of opportunities for indigenous and afro-descendant peoples in access to basic services. Indigenous and afro-descendant peoples are often disadvantaged in their access to market, credit, technology and basic services such as education, health care, water supply, and other community infrastructure. Language, cultural differences and physical isolation can be important determinants of their situation, but social exclusion due to racial, ethnic and religious prejudice tends to worsen their situation. Moreover, these groups have traditionally been excluded from the political process, limiting their ability to advocate for resources. Only recently has this begun to change, especially since the transitions to democracy experienced by most Latin American countries. The presence of these groups in the political process has been increasing in Colombia, Ecuador, Bolivia, Guatemala and Honduras.

In this chapter, we revise different policies to address the specific problems from which indigenous and afro-descendant populations suffer. The basic discussion regarding this issue is divided in two tendencies. Some people consider that both indigenous and afro-descendant individuals have to be treated as any other poor group of society and be included in programs targeted at the poor population as a whole. Others think that indigenous and afro-descendant peoples in poverty have cultural specificities that can only be addressed by special programs tailored to them. This discussion is present in almost every policy topic presented in this chapter and, as we will see, implicitly affects a trade-off between effectiveness and lower costs for the policies.

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* This chapter was co-authored by Mariana Orloff.

In particular, we are going to focus on a small set of policies. We first review information policies that allow government agencies to identify ethnicity. Secondly, we will focus on educational and affirmative action policies that are important to alleviate indigenous and afro-descendant poverty in the long run. Then, we analyze three sets of policies related to indigenous and afro-descendant individuals that were implemented in some countries: infrastructure policies, financial services, land titling and rural development. Finally, we briefly review the role of international organizations regarding indigenous and afro-descendant populations.

1.   Information Policies

Any policy aiming to target indigenous and/or afro-descendant individuals has to acknowledge, from the outset, a difference in group location. Although indigenous peoples are increasingly living in urban areas, the origins of indigenous poverty are to be found in rural areas where the aboriginals constitute an easily identifiable sector of the population. On the contrary, afro-descendants tend to be more concentrated in urban areas.

To understand the profile of poor households and assess how government policies affect their welfare, it is necessary to have extensive, detailed, and precise knowledge of the characteristics and behavior of the households in terms of income generation, consumption, location and access to social services. Recently, it has become clearer that it is necessary to improve the data-collecting tools in order to more accurately reflect the situation of ethnic minorities in LAC.

As we have mentioned, many countries do not include in their household surveys and censuses questions that aim to identify ethnicity. Moreover, countries that do include these types of questions use many different methods. As a consequence, comparisons between countries, and in many cases within countries, become, over time, a difficult task.

In fact, if countries wish to address the challenges faced by indigenous and afro-descendant peoples, the need to develop a set of standardized questions for surveys is urgent. Ideally, household surveys and censuses should include three type of questions:

• *Self-identification* questions should allow respondents to identify a specific ethnic group (for example, Quechua, Aymara, Afro-descendant, etc.) rather than merely selecting "indigenous" so that potential bias due to prejudice is minimized.

- *Language* questions should ask the mother tongue and the most commonly used language by the individual.

- *Region* questions, should allow to identify *small* geographic units such as counties (instead of departments or states). Note first that the place where an individual lives is not a subjective variable (as to some extent language and self-identification). Therefore, in those countries where indigenous/afro-descendant people are known to be highly regionally concentrated, a geographic variable would allow to assess if self-identification and language are properly identifying individuals. Of course, this variable alone would be useless for ethnic identification.

Besides identification of ethnicity in surveys and censuses, there are three other aspects of data-collection that are worth discussing.

Firstly, some indigenous/afro-descendant areas are often under-surveyed due to civil conflict or geographic isolation. It is important, therefore, to solve this under-representation, particularly if changes in the size of the indigenous population would affect policy.

Secondly, it is important to recognize the existence of cultural heterogeneity between white and non-white groups. Statistical agencies could include periodically (every five years, for instance) a special survey module for indigenous peoples that facilitates the study of traditional medicine practices, religious/community activities, land ownership, bilingual schooling, and other topics that help better understand each ethnic group's behavior. Some countries have used separate surveys for indigenous peoples, such as Mexico's employment survey and Venezuela's indigenous census. From a research and policy perspective, supplements to national censuses and surveys[74] tend to be more useful since they allow for comparison with a control group (non-indigenous, non afro-descendant peoples in some countries).

Thirdly, even if some countries have made significant advances in the collection of data in household surveys and censuses that allow for disagregation by ethnicity and race, it is still difficult, in many cases, to identify different ethnic groups within the indigenous community. In this sense, the small size of some indigenous and afro-descendant populations, in some countries, will require special sample stratification that could also be done periodically (every given number of years).

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[74] Such as Canada's Aboriginal Peoples Survey, designed and implemented in partnership with national Aboriginal organizations, carried out in 1991 and 2001, and Venezuela's 2001 Census.

Finally, the regular collection of data has not always translated in its use and dissemination. Sometimes, the information is collected but it is not usually a part of the regular tabulations published by statistical agencies.

2.   Educational Policies

The classical educational model, which was developed in the XIXth century and assumed the existence of a monolingual and monocultural student, corresponded to the idea of homogeneity of beliefs, culture and language. According to the dominating perspective at the time, it was necessary, as part of the process of state formation, to homogenize the population under a unique language that could serve in the public administration and to communicate with the population.

In recent years, there has been a growing interest in the role of indigenous peoples and language heterogeneity, which was reflected in the creation of intercultural bilingual education programs. Bilingual education is defined as instruction to minority groups, through the use of their maternal language and progressively a mainstream language, such as Spanish or Portuguese (in the case of Latin America). Indeed, different studies suggest that the implementation of this educational model can improve the performance of indigenous peoples, increasing enrollment rates, educational results and the level of persistence at school among girls, also reducing gender gaps in education, furthering comprehension of Spanish and increasing the participation of parents at school.

For instance, in the case of Bolivia, language skills have an impact on labor market participation and on earnings. Spanish is more likely to be the only language used by those who are more active in the labor market (men and women with fewer children). Monolingual Spanish speakers earn 25% more than those who speak both Spanish and an indigenous language, while women who speak only an indigenous language earn about 25% less than the bilingual speakers. That is, bilingual speakers may be penalized in the labor market because of a poorer proficiency in Spanish. This suggests that there might be large benefits from programs designed to improve Spanish language proficiency through bilingual education among people of indigenous origins (Chiswick et al., 2000).

Some studies have identified the following common characteristics in successful programs that aimed to provide students with multiple language proficiency, and with access to academic content material: (i) development of the mother tongue is encouraged to promote cognitive

development, and is used as a basis for learning the second language; (ii) parental and community support and involvement are essential; (iii) teachers are able to understand, speak and use, with a high level of proficiency, the language of instruction, whether it is their first or second language; (iv) recurrent costs for innovative programs are approximately the same as they are for traditional programs, although there may be additional one-time, start-up costs; (v) cost-benefit calculations can be estimated in terms of savings to the education system, improvements in years of schooling, and enhanced earning potential for students with multiple language proficiency (Dutcher, 1994).

Finally, it should be noted that bilingual education implies, in many countries, that governments face difficult decisions with respect to choosing the second languages. For instance, in the case of Guatemala, there are 21 Mayan ethnic groups. In order to be successful, bilingual education has to operate with students' mother tongues as basic language. This means training for teachers, books and other pedagogical material for all Mayan languages, elevating the cost of the program (even up to a point where the program might become unfeasible). Should the government just choose some of those languages? Is there a common language shared by the indigenous groups (an "indigenous lengua franca") that could be used instead? Will the use of a common language jeopardize the success of the program? Although these types of questions should be addressed on a case-by-case basis, they nonetheless deserve to be highlighted.

3.   Affirmative Action Policies

Affirmative action is a set of public policies designed to help eliminate past and present discrimination based on race, color, religion, sex, or national origin, and has been used extensively in the United States of America during the last 30 years. In general, these policies can take many forms- the most known being the use of race to change the probability of entering a university or receiving financial aid to study.

The experience of affirmative action policies in LAC is new. The main problem related with these types of policies lies in identifying the targeted population in a society that has more inter-racial marriages than the US. The question that remains to be answered before initiating this type of programs is 'who is afro-descendant?' or 'who is indigenous?'. The use of a self-identification method can be a problem if the result of identifying oneself as afro-descendant gives benefits with certainty (for instance, secures a position at a public university, see Box).

Affirmative action in Brazil

Universities in Brazil have begun introducing affirmative action programs to combat accusations that the national higher education system is elitist and discriminatory. The country has the world's fourth largest student population in the tertiary education and the number of university students has grown by approximately one fifth in the past five years to 3 million. However, only 8% of the 25-64 age-group has attended university, and campaigners say bias in the system prevents black pupils and those educated in state schools from securing a place.

According to the Institute of Applied Economic Research (IPEA), the average black Brazilian possesses five years of education compared with the eight years accumulated by a white Brazilian, and is also two and a half times poorer than his white counterpart. Last year, 65% of university students were educated at private secondary schools and two out of three were drawn from the wealthiest 20% of the population. In an effort to widen participation, several public universities, where education is free, have decided to introduce the controversial quotas for admission. At the Federal University of Brasilia, 20% of places are reserved for black students, while at the state University of Rio de Janeiro (UERJ), the figure is 40%; half of all places must be given to applicants from state schools.

The decision comes as the Brazilian Congress considers implementing a statute of racial equality, which proposes 20% quotas for Afro-Brazilians in government jobs and public universities, as well as the monitoring of black participation in television programs and political parties.

The problem of defining race, and identifying racism is particularly complicated in a country where 40% the population regards itself as "pardo" (mixed race). In the 2001 census only 6% identified themselves as black, a figure that several non-governmental organizations believe to be distorted by the racial stigma attached to being black. However, it is not just race that appears to be a barrier to higher education. The poor funding of state schools might be leaving many students unable to successfully compete for state university places against contemporaries from private schools.

Source: Extracted from "Brazil takes affirmative action in HE", The Guardian, 8/4/2003.http://education.guardian.co.uk/higher/worldwide/story/.

4.   Infrastructure Policies

Although not directly linked to ethnicity or race, an important issue, especially related with some infrastructure projects undertaken in many countries, is involuntary resettlement. In particular, some infrastructure projects aiming to solve issues unrelated to social exclusion in the region, can generate an externality on indigenous and afro-descendant peoples that should be taken into account so that the cost for these groups are minimized. Although this is not specific to indigenous/afro-descendant peoples, in many cases, these specific groups have been affected.

Involuntary resettlement occurs when an infrastructure project (e.g. a dam) forces some people to resettle to other areas of the country. This can have a dramatic impact on the lives of people living in the area of influence of large-scale development projects. The reason for this is that it represents a sudden break on social continuity that can result in the impoverishment of people who are relocated. The changes it provokes are different from those under normal development processes: it dismantles settlement patterns and modes of production, disrupts social networks and diminishes people's sense of control over their lives. It can threaten their cultural identity and can create profound health problems. When resettlement is badly planned or inadequately implemented, it always represents an additional cost to the main project and can have long term consequences for the affected population and the surrounding region.

Resettlement should be planned by trying to improve the living standards, physical security, productive capacity and income levels of the people affected, or to restore them to former levels within a reasonable period of time. According to the Inter-American Development Bank (IDB) guidelines, the principles for resettlement that should be taken into account are the following: (i) avoid or minimize population displacement; (ii) ensure community participation; (iii) regard resettlement as an opportunity for sustainable development[75]; (iv) define criteria for compensation: the definitions should include basic concepts such as what constitutes a household, to avoid speculative behavior; (v) provide compensations at replacement cost: displaced people must not

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[75] Cash compensations are usually not a viable solution to the problems of resettlement and, where possible, the affected population should be offered a direct share of the benefits of the main project. In irrigation projects, for instance, they can receive irrigated lands as part of their compensation.

subsidize the main project through unfair compensation; (vi) compensate the loss of customary rights: resettlement plans should compensate existing legal provisions and address the needs of those who have no legal protection (indigenous peoples or small holders have informal customary rights to land, forest, fishing grounds and other natural resources); (vii) provide economic opportunities to the displaced population; (viii) address security issues; (ix) consider host population in the development plans; (x) include resettlement costs in overall costs; and (xi) establish independent monitoring and arbitration procedures (IDB, 1999).

Indigenous peoples represent a special case for resettlement because of their deep attachment to land and place. To date, there have only been a few accounts of successful resettlement involving indigenous peoples. For instance, there have been some good results in the case of environmental projects, such as the creation of national parks or wildlife reserves. Panama has managed to protect the Bayano tropical forest without negatively affecting the communities living there. Some indigenous groups have been trained as forest management experts and forest guards and continue to live in the forest protection zone created with the construction of a hydroelectric complex.

Nevertheless, indigenous social organization, cultural values and attachment to the land reflect centuries of practice, adaptation and survival strategies and, as a general rule, resettlement should be avoided.

5.   Financial Services

Neither micro-enterprise nor social investment funds were originally designed to address rural poverty. Micro-enterprise financing took off in urban areas, providing small short term loans at rates below those charged by the informal market and was channeled into service and commercial activities or small scale manufacturing. Likewise, social investment funds were initially designed to mitigate the impact of economical stabilization policies. Nearly all were conceived as temporary measures that would be halted once stabilization policies had restored economic growth.

The popularity of the funds is largely due to their flexibility and their participatory approach. Typically, the rules for recruitment are simpler than they are in other government agencies, and priorities are identified at a local level by the beneficiary communities, and municipal or regional government agencies. The main activity of the funds is the

provision of financing for basic infrastructure: schools, health centers, water supply and access roads.

A few countries have established specific funds for indigenous people. The IDB financed these kinds of projects in Guyana, Honduras and Argentina. Nevertheless, the funds are typically more focused on poverty, and it is assumed that indigenous peoples will have equal or greater access than the rest of the population, simply because they are poorer on average. This assumption is not always granted, as indigenous peoples are many times excluded from the decision making process, and and, as a consequence, do not receive the same benefits as other groups with more resources to lobby or influence decisions. By not contemplating specific programs for indigenous peoples, the funds lose the opportunity to accommodate the specifics of language, culture and social organizations (Renshaw, 2001).

Which mechanism is more effective to include the indigenous/afro-descendant groups as beneficiaries of social investment funds? It is possible to identify two different approaches as to how they should be included. The most common one, the *inclusive approach*, treats them as equal, not distinguishing indigenous/afro-descendant people from the rest of the population. It assumes that, other things being equal, indigenous people should have the same access to funds as any other population group. Most inclusive funds have mechanisms to target resources to the poorer regions that many times coincide with the areas of highest concentration of indigenous population. The alternative, *targeted policies,* has a separate component intended only for indigenous or ethnic populations.[76]

Social funds targeted to indigenous populations are distinguished by their approach and methodology. Typically, they have to address the features that differentiate the indigenous population from other sectors of the poor. There are four factors that are particularly important in this case: (i) geographic isolation; (ii) social exclusion, based on ethnic or racial prejudice; (iii) social and cultural differences, covering areas such as language, structures of authority and economic values; and (iv) the need to strengthen the capacity of indigenous organizations. For example, in Guyana, the physical isolation of many communities is critical: few communities can be reached by road, and the main means of transport are canoe or light aircraft.

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[76] As in the case of SIMAP (Amerindian Program) in Guyana and Nuestras Raices in Honduras.

A separate fund for indigenous peoples offers the opportunity to address their social and cultural differences. Language is one of the most immediate and obvious features that makes it difficult for indigenous peoples to participate in standard national programs of poverty reduction. For instance, in regions such as highland Peru or Bolivia, where a large proportion of the population is either monolingual or bilingual in indigenous languages, it is possible for a mainstream program to work in the native language while programs in Spanish are less effective. The most obvious way to resolve this problem is to work through the indigenous organizations.

Nevertheless, the issue of social and cultural differences goes beyond language. The values, attitudes and expectations of indigenous peoples are often different from those belonging to the rest of the society. The indigenous economy is typically founded on social relations and is characterized by notions of reciprocity rather than values of the market. This must be taken into account when designing the programs (See Box below).

SIMAP Amerindian Program in Guyana

SIMAP is a social investment fund that includes a specific component for indigenous peoples. It has been able to develop a range of small projects in isolated communities, using a participatory methodology and flexible procedures for project preparation and implementation. The projects include training and productive activities, such as brick making, sewing and tailoring, transport projects and community infrastructure projects such as schools, community centers, health posts, access roads and bridges. While these projects are not developed as a comprehensive solution to the poverty found in most indigenous communities, they have often achieved significant improvements in the provision of basic services and the standard of living.

The definition of the program's beneficiaries is simple: "the population must be *primarily* Amerindian and no less that 250 persons".

In the SIMAP Amerindian Program, simple infrastructure projects offer a useful starting point for the development of local institutions, requiring the motivation and mobilization of beneficiaries to comply with the program's demand for a counterpart in labor or materials. The organization can later be consolidated through more complex programs, such as training or transport programs.

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6. Land titling and rural development

The evidence that indigenous and afro-descendant peoples are disproportionately over-represented among the extremely poor individuals throughout LAC serves as a foundation for targeting land distribution and access programs at these populations. The claims over land that indigenous groups often have can be explained using different justifications, such as ancient or historical titles, compensation for past injustices, and discrimination.

The period between 1950-1970 is considered the era of land reform in Latin America. Most of the countries were affected by a wave of land reforms that sought to expropriate unproductive lands (generally upon the payment of some compensation) and to modernize agriculture by eradicating servile tenure systems and labor arrangements. These reforms were important for indigenous communities, which could receive an adjudication of land, as was the case in Mexico, Bolivia and Peru, and, to a lesser extent, in Ecuador and Colombia. The reform rarely aimed to consolidate traditional indigenous forms of land tenure and resource management. Beneficiaries tended to receive land in individual lots (Plant and Hvalkof, 2001).

Despite these reforms, Psacharopoulos and Patrinos (1994) stress a significant rise in poverty and extreme poverty for indigenous peoples in the 1980s. This was particularly the case for indigenous peasants in non-tropical regions. Disaggregated data on the extent to which indigenous peoples benefited from land reform is not available, yet it is fair to ask if they were by-passed by land reform, if they received lands of inferior quality rather than those with agricultural potential, whether they had access to financial services, and whether the land reform models were ultimately inadequate.

There are three main conceptual premises behind current approaches to indigenous land demands. One is the *protective approach*, which insists that indigenous peoples need special protections from outside elements and market forces. Another is the *rights based approach*, which claims that they have special rights to land and resources within the parameters of a multicultural and multi-ethnic state. A third is the *environmentally or ecologically determined approach*, which argues that indigenous peoples have the greatest capacity to manage natural resources in ecologically fragile areas.

In the last years, demands for land, expressed by non-governmental organizations (NGOs) representing indigenous peoples, began to grow.

There is a widespread consciousness among indigenous peoples that land is the main resource to avoid poverty. In a study conducted in Ecuador, respondents of the survey were asked to compare their situation with that of neighboring communities: land was the most common measure used (Hentschel and Waters, 2001). In most of the indigenous communities in the highlands of Ecuador, the precise manner in which the household obtains its sustenance is closely related to the size and productive quality of its holdings. When the holding is of sufficient size and productive quality, a surplus can be sold; when it is not, other sources of non-agricultural income are required. This has important implications for public policies. Policies geared toward improving land productivity and distribution might have important effects on poverty reduction. Accessible credit and proper titling become priorities, too. The study also suggests the existence of many differences in infrastructure needs in the communities, which must be taken into account when designing poverty reduction policies for indigenous peoples.

7.   International Organizations' role

7.1 World Bank

The World Bank's policy towards indigenous peoples dates back to 1982 and was initially designed to consider the needs of relatively isolated groups affected by development projects. The policy focused mainly on the protection of land rights and the provision of health services, particularly in relation to forest-dwelling indigenous peoples in lowland South America.

In 1991, the World Bank issued a revised policy document[77], which extended the definition of indigenous peoples to include a much wider array of peoples who maintain social and cultural identities distinct from those of the national societies in which they live, who have close attachments to their ancestral lands, and who are often susceptible to being disadvantaged in the development process.

The World Bank's approach to indigenous peoples in LAC was oriented primarily to compensate any adverse effects caused by bank-financed development interventions. Particular efforts were directed at securing land tenure rights in projects that threatened indigenous territories, especially in large infrastructure projects. To a large extent,

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[77] OD 4.20

the World Bank operated under the assumption that its development poverty reduction projects would reach all in poverty, regardless of ethnic origin. Thus, the needs of indigenous peoples were addressed through the traditional approaches: integrated rural development, regional development or agriculture projects. Recent trends indicate, however, that these assumptions are being revised, as demonstrated by new efforts that target interventions on the basis of age, gender or ethnic origin.[78] In 1993, several donors, including the World Bank and the IDB, gathered together to develop the Indigenous Peoples Initiative, which stressed the strengthening of social capital and capacity building for indigenous organizations.

The World Bank in Ecuador: Indigenous and Afro-Ecuadorian Peoples Development Project (IAEPDP)

IAEPDP was the first World Bank project focusing exclusively on ethnic minorities. The strong ethnicity-poverty relationship identified in Ecuador's Poverty Assessment strengthened the case for targeting interventions on Ecuador's indigenous and afro-descendant populations.

During the project preparation, the World Bank committed itself to three basic guiding principles: targeting resources at the poorest sectors of the population; promotion of participatory processes to ensure that design responds to grassroots demands and close coordination between governmental and non-governmental organizations.

The IAEPDP invested in local capacity building, small-scale demand driven rural sub-projects, land tenure regularization, cultural heritage activities and institutional strengthening of CODENPE (Consejo de Desarrollo de las Nacionalidades y Pueblos del Ecuador).

The targeting mechanisms used in the project included a combination of quantitative methods and geographic location with self-identification and community affiliation with second-tier organizations. Census information on the indigenous and afro-Ecuadorian populations was crossed with data on poverty (index of unsatisfied basic needs) to obtain figures on levels of poverty by ethnicity. Additional information was gathered in the field, particularly self-identification of communities. This information was then represented in a poverty map, which served to select *parroquias*. Then, second-tier organizations were selected to form alliances and a membership eligibility criterion was the basis for targeting the intended population.

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[78] Uquillas J. and Van Nieuwkoop M. (2003)

7.2 Inter-American Development Bank[79]

The Inter-American Development Bank advances social inclusion in Latin America and the Caribbean through broad-based initiatives in research, policy, and loan and grant projects. Specific initiatives on indigenous peoples began in the early 1990s with the creation of the Indigenous Peoples and Community Development Unit and the adoption of specific guidelines on protecting indigenous rights and promoting indigenous development, further expanding its social inclusion efforts and programs to address not only indigenous peoples, but also afro-descendants, persons with disabilities, persons with HIV/AIDs and poor women. The Bank's Social Development Strategy provides an institutional framework for social inclusion as well as specific initiatives for indigenous peoples and afro-descendants.

Beginning in 2001, the Bank management approved two sequential "Action Plans for Combating Social Exclusion based on Race and Ethnicity" containing, among the series of actions, commitments to increase the number of Bank loan and grant operations supporting indigenous peoples and afro-descendants, advance research on the nature of exclusion, poverty and inequality, incorporation of more systematic analysis of indigenous peoples and afro-descendants in Bank programming and strategy documents, and promotion of greater awareness and participation of indigenous peoples and afro-descendants in national policies.[80] Among specific actions are the following:

(i).   Loan programs emphasizing culturally-appropriate development and inclusion for excluded populations, such as: *Bocas del Toro* Regional Development (Panama), Diversity in Education (Brazil), Environmental Management of the Bay Islands (Honduras), Integrated Management of Indigenous Ecosystems (Central America), Indigenous Community-Based Development (Chile), Program for socio-culturally appropriate infrastructure in indigenous Communities (Honduras).

(ii). Creation of a multi-donor Social Inclusion Trust Fund to finance small projects and support larger bank operations targeting the five excluded populations of indigenous peoples. Support has included the Colombian CONPES affirmative action policy for afro-descendants and participation of indigenous peoples and afro-descendants in the Nicaraguan Census.

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[79] This section relies heavily on information provided by http://www.iadb.org/sds/SOC/index_soc_e.htm (IDB's Sustainable Development Department).

[80] IDB Action Plan for Combating Social Exclusion due to Race or Ethnic Background: Progress Report, 2005.

(iii). Support to improved data collection on afro-descendants, indigenous peoples and persons with disabilities, including under the MECOVI program with the World Bank.

(iv). Emphasis on strengthening local capacity, increasing participation, improving access to and quality of financial services, environmental management, and promoting rights and judicial security.

(v). Development of socio-cultural guidelines for Bank operations and quality review of new operations.

(vi). Establishment of a comprehensive comparative database on indigenous legislation at the national and international level.

Currently under preparation is a new Operational Policy on Indigenous Peoples and a Strategy on Indigenous Development, based on a series of technical studies, a review of Bank experience and a series of consultations with indigenous peoples within the region.

Recent research and publications include: Social Inclusion and Economic Development in Latin America (2004), a compilation of key research supported by the IDB including: the economic costs of the exclusion of indigenous peoples and afro-descendants; the link between education, exclusion and race in Brazil; rights of indigenous peoples; and, anti-discrimination legislation. Included in the IDB approach to social inclusion are: improving staff training on social inclusion, supporting efforts to raise awareness on discrimination and exclusion, supporting country policy dialogues, and expanding best practice research to improve future operations.

As part of the institution's support to national governments in the achievement of the Millennium Development Goals, focus is also provided on the role played by race and ethnicity in both the specific goals and in social development and poverty reduction, overall. This includes country-level analysis of race, ethnicity and the MDGs (e.g. Honduras, Peru), and support to improved data collection and disagregation of the MDGs, where possible.

7.3. United Nations Development Programme[81]

The lessons learned from country and regional engagement together with global consultations held with indigenous peoples' organizations (IPOs) in 1999 and 2000 fed into and informed the UNDP policy entitled, "UNDP and Indigenous Peoples: A Policy of Engagement" endorsed in 2001. Underpinned by the international human

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[81] This section draws heavily on the input received by UNDP.

rights framework, the policy recognizes indigenous peoples' rights and their vital role and contribution to development.

Rooted in the goals reached at the Millennium Summit, the objective of the policy is to provide UNDP staff with a framework to guide their work in building sustainable partnerships with indigenous peoples. These partnerships are aimed at fostering an enabling environment that: promotes indigenous peoples' participation in all decision-making levels; ensures the co-existence of their economic, cultural, and socio-political systems with others; and develops the capacity of governments to build more inclusive policies and programmes. The policy establishes priority areas of engagement ranging from poverty reduction and conflict prevention and peace-building to issues related to ownership and use of land and natural resources, and the protection of cultural and intellectual property. It also provides practical mechanisms for operational and policy engagement at the global, regional and country levels.

The rationale for UNDP engagement with indigenous peoples and their organizations is grounded in the UNDP mandated areas of work; processes and agreements of development cooperation; and the aspirations of indigenous peoples. The UNDP role at the country level, its human development paradigm, advocacy for democratic governance, and policy of mainstreaming human rights positions makes it a partner for pursuing a more holistic approach to development. This mandate can serve as an entry point and foundation for supporting more inclusive development policies and programmes; brokering dialogues with all actors; facilitating participatory approaches; and creating the political space for alternative views to be shared.

Guatemala: creating an enabling environment

CSOs and indigenous peoples and their organizations played an active role in negotiating peace by promoting informal linkages among the opposing parties, by helping to define the major issues and build consensus. UNDP supported the establishment of the Civil Society Assembly charged with discussion of the substantial issues, formulation of specific proposals based on consensus, and review of the peace agreements. UNDP ensured that space was created so that the perspectives of indigenous peoples and their organizations were brought to national attention. The Assembly helped to overcome distrust, promote broad participation and move the country away from confrontation.

UNDP's work over the past two years has marked a shift from policy making to programme development and promoting action on the ground. HURIST, the Human Right Strengthening Programme, is a joint programme with UNDP and the Office of the High Commissioner for Human Rights (OHCHR) aimed at integrating human rights in development by building the capacity of UN country offices, preparing methodologies and toolkits on human rights, and documenting and disseminating good practices in the application of these rights in development. In 2002, Hurist incorporated an indigenous peoples' component to its overall programme. The principal objectives of the component are: 1) to contribute to the implementation of the UNDP policy of engagement with indigenous peoples; and 2) to create a mechanism for dialogue at the national level to ensure the participation of indigenous peoples in UNDP activities at both the policy and programmatic levels. The key underlying principle is to promote the full participation of indigenous peoples in the planning, implementation and evaluation of the projects that (may) affect them.

In 2003-2004, the Civil Society Organization (CSO) Division, in partnerhsip with RBLAC's Regional Strategy Implementation Center, undertook a mapping of the region's country office activities involving indigenous peoples. Among the main recommendations is the establishment of a network of advisors on indigenous peoples' issues for the region to provide ongoing advice to country offices.

The global Human Development Report (HDR) for 2004, "Cultural Liberty in Today's Diverse World", focuses on exploring issues related to building inclusive societies and managing diversity. The report benefited from close consultation with indigenous peoples and members of the Permanent Forum on Indigenous Issues. The 2004 HDR has provided a key platform for debate on indigenous peoples' concerns. In June 2004, the Guatemala country office, organized a workshop to discuss issues raised in the HDR related to multiculturalism, indigenous peoples and governance.

In addition, some regional and national HDRs have included data disaggregated by ethnic groupings, language groupings, gender, geography, and age, for example.

Much of UNDP's support to indigenous peoples at the country level is channelled through small grant programmes. In Latin America, a small grants programme in Guatemala supports indigenous peoples' rights. Activities include: raising awareness and strengthening legislation on the rights of indigenous peoples; establishing institutions for the promotion and protection of indigenous women's rights; and awareness on human rights treaties and norms.

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The United Nations Development Programme, the World Bank, the Inter-American Development Bank and the Economic Commission for Latin America and the Caribbean give high priority to the work on the Millennium Development Goals (MDGs), including the assessment and monitoring of countries' possibilities to reach specific targets, and the discussion of alternative policies to reach the goals.

In the last few years, several analytical and methodological developments have been supported to better approach the assessment of different countries' possibilities to reach the agreed targets by 2015. Given the high levels of inequality in Latin America and the Caribbean, specific attempts to analyze goals and targets for different groups of the population have been launched.

In this context, this publication concentrates its analysis on ethnicity. Based on the analysis performed by a team of researchers from the Centro de Estudios Distributivos, Laborales y Sociales (CEDLAS), National University of La Plata, Argentina, this study explores the situation of indigenous and afro-descendant people in terms of poverty, educational achievement and gender equality. It examines their past and present performances towards the MDGs, and compares it with the national average, as well as with that of other groups, such as euro-descendants and mestizos. A set of micro-simulations is also performed to increase the understanding of the factors behind the income and educational disadvantages of indigenous and afro-descendant peoples, and to portray different scenarios, in terms of growth and redistribution, in which poverty in these groups can be significantly reduced.

Although the authors' opinions do not necessarily reflect the institutional position of the co-sponsors of this initiative, this publication is considered to be an important contribution to the ongoing assessment of how countries in Latin America and the Caribbean can reach the MDGs, and to the region's understanding of the importance of incorporating the ethnic dimension in the analysis of the MDGs, poverty reduction, and social inclusion policies in general.