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REDUCING POVERTY AND INEQUALITY IN BRAZIL

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REDUCING POVERTY AND INEQUALITY IN BRAZIL

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FOREWORD

During the 1990s, Brazil achieved significant progress in reducing poverty, largely a result of the successful taming of inflation with the introduction of the *Plano Real* in 1994. However, after 1995 no further reductions in poverty occurred and progress was only maintained thanks to an extremely active social policy, which strengthened the social safety net for the most vulnerable. Looking forward to the challenges of reducing poverty to half its 1990 level over the next decade (in line with the Millennium Development Goals) and of eliminating extreme poverty and hunger, this paper explores the relationship between the country's poverty, inequality and growth and highlights the synergies between economic growth and inequality reduction.

Exploring the multiple dimensions of poverty and inequality, this paper argues that it is essential to look beyond the main characteristics of poverty and inequality, to their causes. The paper tries to contribute to this discussion by focusing on the determinants of income-based poverty and inequality.

The data shows that poverty is higher among blacks, children, individuals with less than primary education, informal workers, unemployed workers, and is particularly prevalent in rural areas and in the Northeast. Four findings are worth noting: i) urban poverty accounts for three-fourths of total poverty, despite the higher incidence of poverty in rural areas; ii) households where the head is unemployed are twice as likely to be poor as those where the head is employed, yet more than three-fourths of poor household heads are employed but their income is too low to lift them out of poverty; iii) racial differences in poverty are large but can largely be explained by other variables, notably differences in education; iv) gender has no effect on the probability of being poor, despite strong evidence of significant wage discrimination by gender.

The paper also focuses on the question: *What can public policies do to address those causes?* It emphasizes that in order to achieve broad based economic growth and effective social inclusion, two types of policies are necessary: longer term policies that foster productivity growth while broadening economic opportunities for the poor, and policies that can reduce poverty and inequality in the short term, while investing in the productive capacity of the poor. Progress on both fronts is required since achieving one without the other would fail to reduce poverty or inequality.

The paper's approach is very much in line with the current policy discussion in Brazil and reflects a growing awareness of the importance of reducing inequality in order to reduce poverty, complementing economic policies to accelerate growth. The policy recommendations are part of Brazil's government agenda, and central components of any strategy for sustainable poverty and inequality reduction. Thus, they merit decisive support from multilateral development institutions. The Bank will continue to support these medium term policies for economic growth with social inclusion, both through policy dialogue and sector-wide operations as well as through investment projects with a social focus, which constitute more than half of the Bank's portfolio in Brazil.

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Reducing Poverty and Inequality in Brazil

Executive Summary

This paper hopes to contribute to the understanding of the determinants of poverty and inequality in Brazil, identify some of the main challenges and spell out policy implications for reducing poverty and inequality over the short term (next three or four years) and medium term (next decade or two). The analysis presented here hopes to contribute to this discussion by: i) providing a description of the key features of the evolution of Brazil's poverty and inequality over the last two decades based on the latest available data; ii) using analytical tools to distinguish between the main features of poverty and inequality (the symptoms) and their probable determinants (the causes); and iii) identifying some of the key policies to address those determinants and thus contribute to the permanent reduction in Brazil's poverty and inequality .

During the 1990s, Brazil achieved significant progress in reducing poverty, largely a result of the successful taming of inflation with the introduction of the *Plano Real* in 1994. However, after 1995 no further reductions in poverty occurred -- in a context of mediocre growth and rising unemployment -- and progress was only maintained thanks to an extremely active social policy, which strengthened the social safety net for the most vulnerable.

Looking forward to the challenges of reducing poverty to half its 1990 level over the next decade (in line with the Millennium Development Goals, or MDGs) and of eliminating extreme poverty and hunger (in accordance with the stated objectives of Brazil's government), the paper explores the relationship between the country's poverty, inequality and growth and draws four preliminary conclusions: i) the MDG objective of reducing *extreme poverty*[1] by one-half of the 1990 baseline is clearly within reach; this objective could be considered modest, however, since it would require only a further 3% reduction in extreme poverty over the next decade (from the latest 13% to 10% by 2015); ii) significantly reducing poverty -- and particularly extreme poverty -- over the next decade requires improving income distribution to increase the poverty reduction impact of economic growth; iii) eliminating poverty or extreme poverty are clearly long-term endeavors; in absence of any reductions in inequality, it would take more than 30 years to eliminate extreme poverty, and almost 60 years to eliminate poverty, at 4.5% annual growth; and iv) that period, however, could be drastically reduced (to almost one-half) if only modest (2 to 3%) reductions in inequality could be simultaneously achieved. This paper argues that such reductions could be achieved through a combination of short-term poverty-alleviation initiatives aimed at improving the targeting and efficiency of cash transfers to poor families, and a consistent medium-term commitment to improving the quality and equity of education opportunities available to the poor.

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[1] The poverty lines used in this paper are Brazil's official poverty lines calculated by IPEA (Rs.62 per-capita/month for extreme poverty and Rs.125 for poverty). These values approximately correspond to 1/4 and 1/2 of a minimum wage, per-capita/month, or roughly $25 and $50 dollars, respectively. They differ somewhat from UNDPs internationally comparable poverty lines ($30 and $60 PPP dollars per-capita/month). Nevertheless, the trends and conclusions of the analysis presented in this paper are the same for either set of poverty lines.

Poverty and inequality in Brazil have many faces: they affect different population groups in multiple ways and to different degrees. Some key features of Brazil's poverty and inequality have been part of the policy debate for some time (i.e., regional and urban/rural differences, demographic factors, differences in education and formal/informal employment). Recent studies emphasize other important dimensions (including labor-market access, segmentation and gender and ethnic discrimination).

While acknowledging the importance of these dimensions to the study of poverty and inequality in Brazil -- and the relevance and contribution of new approaches that emphasize social inclusion, social capital and empowerment issues -- this paper argues that it is essential to look beyond the profile and main features of poverty and inequality and ask what the determinants and causes are behind these symptoms. The paper tries to contribute to this discussion by focusing on the determinants of income-based poverty and inequality. Finally, it focuses on the question: *What can public policies do to address those causes?*

The paper draws on an economic model of the components of per-capita income and uses various analytical decompositions of poverty and inequality developed by the *Instituto de Pesquisa Econômica Aplicada* (IPEA)[2] that focus on the determinants of both per-capita income growth and per-capita income inequality. The empirical analysis points to several interesting and thought-provoking conclusions.

The main determinants of income growth are broadly the same as those of income inequality, chief among them are the determinants of productivity, particularly of labor productivity. Labor productivity in turn depends on the characteristics of the job and on workers' qualifications. Thus, clear win-win policies exist, associated with increasing workers' qualifications and access to better jobs, which foster higher productivity and economic growth and at the same time improve income distribution. This emphasis on improving income distribution by addressing the sources of differences in the income generating-capacity of individuals and families has two advantages: it tackles the structural determinants of inequality while avoiding the tradeoffs (between growth and redistribution) of outright redistributive policies, reinforcing the poverty reduction impact of growth.

The paper explores the multiple dimensions of poverty and inequality through a set of individual and family characteristics that have traditionally been used to characterize Brazil's poverty profile. The data shows that the incidence of poverty is higher among blacks, children, individuals with less than primary education, informal workers, unemployed workers, and is particularly prevalent in rural areas and in the Northeast. Some traits in the poverty profile are worth noting: i) urban poverty accounts for three-fourths of total poverty, despite the higher incidence of poverty in rural areas; ii) households where the head is unemployed are twice as likely to be poor as those where the head is employed, yet more than three-fourths of poor household heads are employed

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[2] The main sources for this paper are recent studies on poverty and inequality in Brazil developed by Brazilian researchers as well as by international development agencies, including three background papers commissioned for this study and developed by a team from IPEA and the *Instituto de Estudos do Trabalho e Sociedade* (IETS). A list of the main sources is provided in the Reference section.

but receive income too low to lift them out of poverty; iii) racial differences in poverty are large but can largely be explained by other variables, notably differences in education; iv) gender has no effect on the probability of being poor, despite strong evidence of significant wage discrimination by gender.

The probability of being poor is analyzed using a multivariate regression model in which the interplay of all variables correlated with poverty simultaneously determines the chances of being poor vs. non-poor. In order to sort out which predictors of poverty are more robust, an exercise is carried out to simulate the capacity of each variable to "explain" differences in poverty, while controlling for the other variables. The results are quite revealing: the "explanatory power" of some variables strongly correlated with poverty, such as race and rural/urban residence, are sharply reduced once we control for the other variables (see p.p 2.11, 2.12 and Graph II-1). On the other hand, region, age, labor-market status and education retain most of their discriminatory power. Among household characteristics, region of residence and household head's years of schooling are the most robust variables to predict differences in poverty, while labor-market status and region are the most robust predictors of differences in extreme poverty. Among individual characteristics, age is a strong predictor of differences in both poverty and extreme poverty.

Similarly, the components of income inequality are analyzed to separate inequality within groups from inequality between groups, defined by the same individual and family characteristics. This disaggregation clearly indicates that inequality within homogeneous groups (for example, inequality among blacks or among families living in the Northeast) is much more important than inequality between those groups (between blacks and whites or between families living in different regions). Furthermore, evidence shows that the former has been growing while the latter has been decreasing very slowly.

Regional differences influence poverty and inequality in different ways. While the region of residence is a robust predictor of the probability of being poor (see p.p. 2.12 and Graph II-1), regional inequality plays a modest role in explaining aggregate income inequality (see p.p 2.29 and Table II-4). The former can be explained because regional differences in economic factors, infrastructure and institutional development determine substantial differences in average economic productivity among regions which, in turn, are strong determinants of the level and growth of average family income. Thus, the regional variable is an important determinant of poverty through its effect on growth and average productivity. The modest contribution of regional differences towards explaining total income differentials is explained because income differentials within regions, particularly between families in the same region, are much larger than average income differentials between regions.

These conclusions suggest that traditional policies focusing on reducing or compensating regional inequalities have not been particularly effective at reducing poverty or income inequality: they may be focusing on a small component of total inequality (regional inequalities contribute only 8% to total geographic inequality) or they may not be effectively addressing the causes behind inequality and poverty (namely the determinants of differences in productivity which drive differences in income levels).

Similarly, more recent compensatory policies that focus on reducing inequalities among ethnic groups may be missing important causes beneath those inequalities that in turn determine differences in poverty. Income inequalities *between* black- and white-headed households account for only 10% of total income inequality, while the remaining 90% of inequality is accounted for by inequalities among households *within* the same racial groups. On the other hand, inequalities *between* households with *different levels of schooling* of the household head account for 40% of total inequality, while the remaining 60% is accounted for by income differences among households *with the same levels* of education. Moreover, differences in education explain most of the income differences between blacks and whites.

Education emerges as both a powerful predictor of poverty and a key determinant of inequality. Differences in education and in returns to education explain about 40% of differences in labor incomes and 30% of total income inequality. In addition, evidence shows that in the 1990s increased years of schooling played an important role in reducing poverty.

Demographic variables are also important determinants of both poverty and income differences. The presence of children in the family is one of the strongest predictors of poverty. Families with children under 6 years of age have a 50% higher chance of being poor and they account for two thirds of all poor families. At the same time, demographic changes, particularly the reduction in the dependency ratio and the increase in the proportion of adults have played an important role in reducing poverty over the last decade, accounting for one third of total poverty reduction. Increases in public transfers and increases in labor productivity were responsible for the other two thirds.

The main policy implication of the analysis in this paper is that there is a substantial role for public policies aimed at reducing poverty and inequality. These policies can be grouped in two broad categories: policies aimed at accelerating economic growth and policies aimed at reducing inequality or broadening participation by the poor in generating and sharing the benefits of growth Among these policies there are tradeoffs and there are clear "win-win" policy options.

This paper does not pretend to cover the full menu of economic and social policies to reduce poverty and inequality. Several studies by the Bank, by Brazilian researchers and economic authorities and by other multilateral institutions are devoted to the study of the determinants of growth and policies to accelerate growth[3]. Other studies have analyzed in detail the broad spectrum of Brazil's social policies and social spending[4].

This paper highlights the synergies between economic growth and inequality reduction. Consequently, it focuses on policies that foster growth without increasing inequality, policies that reduce inequality without compromising growth -- or policy options that do both simultaneously. Among these, the paper emphasizes the role of medium to long term policies that foster productivity growth while broadening economic opportunities for the poor, as well as policies that can reduce poverty and inequality in the short term, while investing in the productive capacity of the poor.

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[3] See for instance Blyde and Fernández-Arias (2004), Castelar (2004), Ministerio da Fazenda (2004).
[4] Ministerio da Fazenda (2003), World Bank (2003) and World Bank (2000).

This approach is very much in line with the current policy discussion in Brazil and reflects the growing awareness and interest on redistributive policies as an important component of the policy agenda for reducing poverty, complementing economic policies to accelerate growth.

Chapter four presents a short and medium term policy framework for poverty and inequality reduction.

Short-term priorities include policies/programs that can significantly affect growth or income distribution over the next three to five years. These include: i) improving labor market regulations to reduce disincentives to formal employment; ii) invest in effective training programs for the workforce; iii) investing in infrastructure to support faster economic growth; iv) undertaking budget-neutral tax reforms to improve the efficiency and equity of taxation without further increasing the tax burden; v) improving the progressiveness and effectiveness of social transfers by strengthening their targeting, monitoring and evaluation, and improving the efficiency and effectiveness of the broad number of programs that are part of Brazil's social safety net; vi) strengthening articulation between targeted compensatory programs aimed at excluded groups with mainstream social policies to invest in the productive capacity of beneficiaries so as to increase the potential impact and sustainability of those programs.

Reducing poverty and inequality permanently, however, is a medium to long-term endeavor. It requires altering the structural determinants of labor productivity consistently for two to three decades, until improvements achieved in the younger cohorts of the workforce are reflected in the stock of the workforce. Meanwhile, the economy needs to grow steadily in order to generate jobs and opportunities for a better-qualified workforce. In addition, these changes have to be achieved in a stable macroeconomic environment since major economic imbalances can rapidly sweep away real income gains, reversing decades of hardly earned progress.

Compensatory programs need to be complemented by policies that address the structural causes of poverty and inequality, which requires focusing on the determinants of family income generation, chief among them, the determinants of labor productivity. This approach requires consistent medium-term policies and investments on two fronts: i) addressing the main factors that limit productivity growth and competitiveness of the economy, particularly economic policies, the macro and regulatory framework for investments and employment generation, and infrastructure constraints; and ii) investing in the human capital of the workforce, with an emphasis on improving the quality and equity of basic education and developing effective training and skills certification programs for the workforce. These factors are the two pillars of broad-based economic growth and effective social inclusion. Progress on both fronts is required since achieving one without the other would fail to reduce poverty or inequality.

These policies are part of Brazil's government agenda, and central components of any strategy for sustainable poverty and inequality reduction. Thus, they merit decisive support from multilateral development institutions, and particularly from the Bank, complementing the broad spectrum of investment projects with a social focus that constitute more than half of the Bank's portfolio in Brazil.

I. POVERTY AND INEQUALITY IN BRAZIL

A. Introduction

1.1   There are several recent studies on poverty and inequality in Brazil. Among these, the *Instituto de Pesquisa Econômica Aplicada* (IPEA) published a comprehensive volume in 2000 containing 25 studies from top researchers in Brazil, which covers the measurements of poverty, an analysis of the sources of poverty and inequality, various approaches to their heterogeneous nature, as well as analyses of the targeting and efficiency of social policies. The World Bank has recently published two major studies, one on urban poverty (2000) and another on inequality and economic development (2003), which provide a wealth of information as well as detailed analyses of public social expenditures, the distributive incidence of taxation, and policy recommendations.

1.2   A growing consensus is emerging on the main characteristics of poverty and inequality in Brazil and on some of the main causes. Among the main aspects highlighted in the more recent studies are: i) the role of inequality as a constraint to economic development and poverty reduction; ii) a recognition of the role and scope of public policies in reducing inequality; iii) a broadening of the concept of poverty to include other issues such as empowerment, social capital and political participation; iv) a growing awareness of the various faces of inequality, with greater attention to inequality of opportunities, and gender and ethnic discrimination; v) growing political and financial support to targeted cash transfers as an effective way to alleviate poverty in the short run; and vi) increased focus on social inclusion policies and programs, targeting specific groups of the population.

1.3   In this context, the value added of another study hinges on whether it contributes new findings, or brings together the findings and conclusions of other studies, or offers new perspectives on relevant issues. This paper hopes to contribute in four ways by: i) updating the description of the trends and characteristics of poverty and inequality using the latest household survey data available; ii) distinguishing between the faces and characteristics of poverty and inequality (the symptoms) and the determinants of poverty and inequality (the causes); iii) examining those determinants through a set of variables and theoretical tools that highlight the commonalities and synergies between growth and inequality reduction as two sides of the same coin in achieving sustainable poverty reduction; and iv) spelling out some of the main challenges and policy implications for the Bank in supporting sustainable reduction in Brazil's poverty and inequality.

1.4   The study does not cover some important topics. It does not include an analysis of social spending and taxation in Brazil, a subject that is well covered by the recent World Bank studies; nor does it contemplate a broader approach to poverty and inequality that goes beyond income poverty by including other social indicators or other dimensions of poverty or social inclusion. While these limitations are readily recognized, focusing exclusively on the income dimension of poverty and inequality allows the analyst to use explanatory economic models and empirical

household survey data to identify some of the likely causes and determinants of poverty and inequality.

1.5   The paper is organized in four chapters: The first provides a brief overview of the trends in Brazil's poverty and inequality during the last two decades and a forward perspective linked to the challenge of meeting the Millennium Development Goals. The second provides a descriptive analysis of the characteristics and main components of poverty and inequality and how they have evolved over the last decade. The third looks beyond these features of poverty and inequality to identify some of their key determinants. The final chapter spells out some of the key challenges and policy implications for reducing poverty and inequality in Brazil, over the short and medium term.

B.   Trends in Poverty and Inequality (1980-2002)

1.6   Brazil achieved significant progress in reducing poverty during the 1990s. This advance was largely achieved as a result of the successful taming of inflation through the introduction of the *Plano Real* in 1994. The poverty headcount dropped from 41.6% in 1993 to 33.8% in 1995, and extreme poverty was reduced from 19.5% to 14.5%. Average per-capita income grew by almost 25%, and roughly 10 million people were pulled out of poverty and six million overcame extreme poverty. The wide swings in poverty that accompanied successive hyperinflation and stabilization cycles during the 1980s came to an end. This performance is among the best of any country in Latin American and the Caribbean (LAC) and attests to the benefits of stabilization as a foundation for poverty reduction.

1.7   The rapid progress, however, was exhausted as inflation came to an end (see Graph I-1). No further reductions in poverty were achieved after 1995, as the economy entered a new phase of unstable and slow growth, accompanied by rising unemployment. Indeed, over the next seven years, the poverty headcount remained the same (33%) and the 2002 mean income per-capita was the same in real terms as in 1995. While the percentage of poor families stabilized, the number of poor people grew by five million, and extreme poverty increased by one million. In this context of rising unemployment and stagnant or falling real wages, the government launched an extremely active social policy, undertaken in the second half of the 1990s, which rapidly strengthened the social safety net, extending benefits of various cash-transfer programs targeting the most vulnerable families. These programs played an important role in containing the growth of poverty, given the unfavorable economic environment.

Graph I-1: Evolution of Poverty and Extreme Poverty
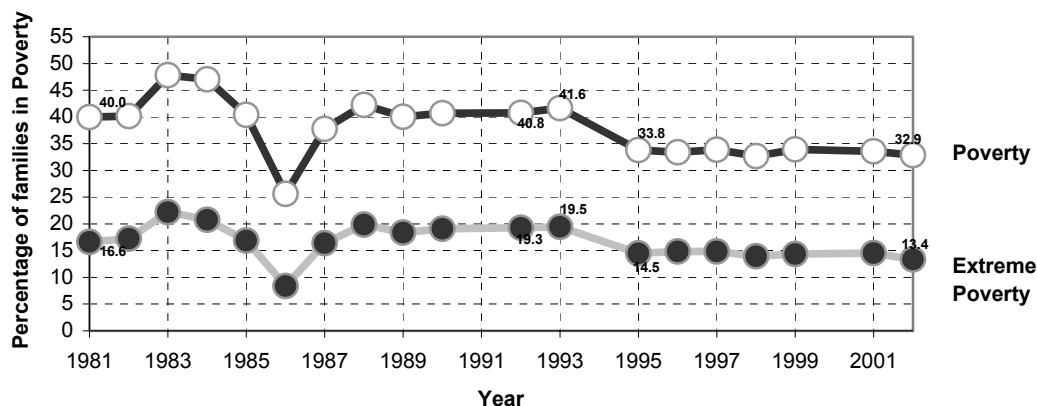
Source: IPEA, based on 2002 PNAD

1.8   In contrast to the important changes in poverty, trends in income inequality over the last two decades have shown a startling stability. Brazil has been and remains one of the most unequal countries in LAC and in the world, as reflected in a Gini coefficient of 0.6 and a Theil coefficient of 0.7. The average income of a family in the top 10% is over 60 times higher than that of a family in the bottom 10% of the income distribution. The proportion of income of the poorest 50% is equal to that appropriated by the richest 1%, a fact that has remained unchanged over the last twenty years (see Graph I-2).

Graph I-2: Inequality in Brazil
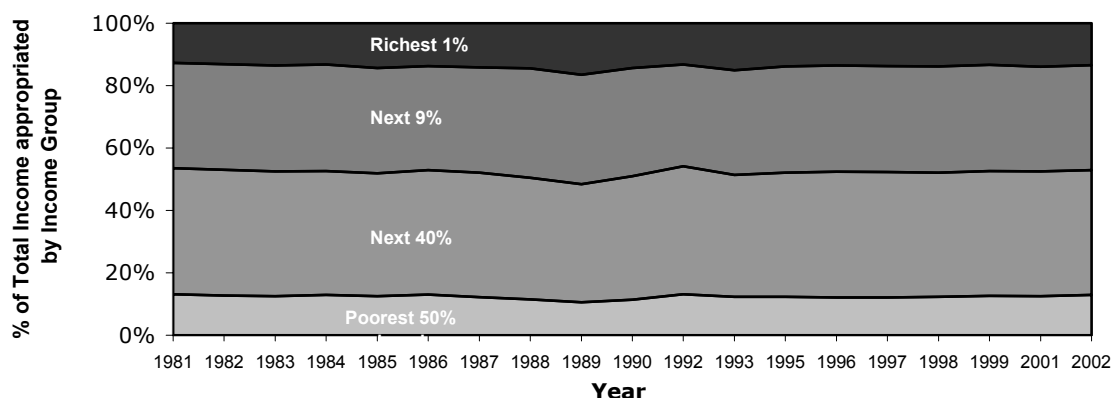
Source: IPEA, based on (PNADs)

C.   Poverty Reduction: Inequality and Growth

1.9   Recent work by Paes de Barros and other researchers at the *Instituto de Pesquisa Econômica Aplicada* (IPEA) has explored the relationship between poverty, inequality and growth in Brazil.[5] According to these studies, Brazil's average income per-capita (Rs.383) is roughly three times the poverty line for Brazil[6] (Rs125) and the poverty gap (the distance between the average income of the poor and the poverty line) is just below Rs.60/month, which is less than half the poverty line. Thus, it would suffice to transfer an average of Rs.60 per month to every poor person in order to eliminate poverty. This amount is one-sixth the average per-capita income, or roughly 5% of the income of families above the poverty line. Moreover, it would take only 1% of aggregate family income to eradicate extreme poverty.

1.10   These figures point to the conclusion that poverty in Brazil has more to do with the persistence of inequality than with the capacity of the economy to generate income.

1.11   While poverty reduction can result from both income growth and a reduction in inequality, simulations using data from household surveys have been developed to show that under extreme inequality such as that in Brazil, the poverty-reducing impact of growth is substantially diminished while the potential impact of even marginal improvements in income distribution could achieve large reductions in poverty even for relatively modest levels of growth.

1.12   Prospects for reaching the Millennium Development Goals: The Millennium Development Goals (MDGs) launched in the 2000 UN Millennium Summit crystallize an international commitment by 189 signatory countries to reach eight broad development goals, including poverty and inequality reduction, human and social development indicators and environmentally sustainable development. The eight goals comprise a set of 18 targets, associated with 48 indicators, for which a 1990 baseline was established for each country and targets were defined for the year 2015. Regarding poverty reduction, the MDG objectives propose a reduction of extreme poverty and hunger to one-half their 1990 levels by 2015.[7] Using Brazil's own poverty lines, the goals for the country would be to reduce poverty from 40% to 20% and extreme poverty from 20% to 10%, over the period 1990 to 2015.

1.13   Under the current scenario of moderate stable growth, reducing poverty in line with the MDGs -- or eliminating extreme poverty and hunger in accordance with Brazil's official objectives -- poses difficult challenges in terms of accelerating growth and improving income distribution.

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[5] See background papers for this study by Barros, R.P. et al., 2004.
[6] Brazil's official poverty line (calculated by IPEA) is Rs 125 per-capita/month, or approximately US$40.
[7] See "Road Map Toward the Implementation of the UN Millennium Declaration," 2001.

1.14   Table I-1 below summarizes the results of counterfactual simulations[8] to estimate the various combinations of growth and inequality reduction that would be required to achieve various poverty reduction targets. The table presents three scenarios for poverty and extreme poverty reduction. Scenario A corresponds to the MDG objectives of reducing poverty by one-half of the 1990 baseline; scenario B presents a more ambitious scenario that envisions reducing poverty (and extreme poverty) by one-half of what they are according to the latest available data (2002); scenario C envisions what would be required to "eliminate" poverty and extreme poverty in Brazil.[9]

1.15   Five main conclusions arise: i) elimination of poverty or extreme poverty is a long-term endeavor that, in the absence of reductions in inequality, typically would require 30 to 60 years, or more than two generations of stable economic growth; ii) in fact, it is virtually impossible to lift the poorest of the poor out of poverty solely through growth: the growth requirement increases asymptotically as the poverty target approaches zero. Indeed, eliminating poverty requires explicit targeted efforts aimed at redistributing income and providing an effective safety net for the poorest members of society; iii) significantly reducing poverty and extreme poverty over the next decade requires sustained economic growth and a simultaneous reduction of inequality; iv) reducing extreme poverty in accordance with the MDG goals may be within reach;[10] however, reducing poverty in line with the MDG goals would take roughly 15 years of sustained annual economic growth of 4.5%, v) the same goal could be reached by 2015 at the same growth rate, provided modest improvements simultaneously occurred in income distribution (a 2% reduction in inequality over the next decade).

1.16   The various combinations of growth and inequality reduction presented in Table I-1 are color-coded to indicate their economic and political viability. Combinations shaded in red are probably not viable because they would require unattainable annual growth rates given Brazil's current macro- and microeconomic constraints, or because they would require large reductions in inequality that would be politically and economically difficult to achieve without increasing the tax burden or affecting growth. Combinations in yellow are considered attainable because both the growth and inequality reduction requirements are reachable, but they would take longer periods to materialize. Finally, combinations in green are not only reachable but also desirable because

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[8] The simulations developed by IPEA were derived from the individual distribution of per-capita income using the 2002 Brazilian Household Survey (PNAD) data, alternatively estimating a modified distribution with the same mean but a different Lorenz curve, altering the mean but keeping the same Lorenz curve; or altering both parameters simultaneously.

[9] The "elimination" of poverty discussed in scenario C refers to reducing poverty and extreme poverty not to zero but to minimal levels (arbitrarily set at 3% of families). This adjustment is because the nature of poverty reduction and the diminishing returns of growth make it almost impossible to lift the poorest of the poor out of poverty merely through growth. The growth requirement increases asymptotically as the poverty target approaches zero.

[10] This goal is feasible because extreme poverty was reduced from 21% to 13% over the last decade. Thus, the remaining 3% reduction would require only 5 years of sustained economic growth at 4.5% per year.

they allow significant poverty reduction over the next decade or two and thus can be used as examples of genuine policy targets.

1.17 Among these options, the combinations highlighted in bold should be clearly within reach, requiring a balanced combination of growth and moderate but effective redistributive programs:[11] annual growth of 4.5% for the next decade, combined with a 2% reduction in inequality over the same period, would allow Brazil not only to reach the MDG goals for both poverty and extreme poverty, but also to reduce extreme poverty by one-half (from 13% to 6.5%) by 2015. If that growth pace could be maintained for another decade, and an additional 1% reduction in inequality achieved, Brazil could practically eliminate extreme poverty over the next two decades.

Table I-1. Poverty Reduction Scenarios and the Millennium Development Goals

Poverty Reduction Scenarios	Poverty Reduction				Extreme Poverty Reduction		
	Annual GDP growth required	% Total inequality reduction	Number of years required		Annual GDP growth required	% Total inequality reduction	Number of years required
A. Reducing poverty to one-half the 1990 baseline (MDGs)							
No changes in inequality	6%	--	9		6%	--	3.5
	4.5%	--	14		4.5%	--	5
Inequality reduced	*4.5%*	*2%*	*11*		*4.5%*	*1%*	*3*
	4.5%	5%	7		4.5%	2%	1.5
B. Reducing poverty in half over the next decade							
No changes in inequality	8%	--	10		6%	--	10
	4.5%	--	20		4.5%	--	15
Inequality reduced	*4.5%*	*3%*	*15*		*4.5%*	*2%*	*10*
	4.5%	6%	10		4.5%	3%	7
C. "Eliminating" extreme poverty							
No changes in inequality	8%	--	27		6%	--	21
	4.5	--	58		4.5%	--	31
Inequality reduced	4.5	6%	35		*4.5%*	*3%*	*20*
	4.5	10%	25		4.5%	6%	10

1.18 The simulations above provide evidence of the high sensitivity of poverty reduction, particularly extreme poverty reduction, to changes in inequality. Furthermore, the simulations show that eliminating poverty or extreme poverty is a long-term endeavor that cannot be achieved in reasonable time frames solely through growth. At 4.5% annual GDP growth, it would take more than 30 years to "eliminate" extreme poverty and almost 60 years to "eliminate" poverty.

1.19 The main conclusion is that in the absence of any improvements in income distribution, the poverty reduction impact of growth is substantially reduced. This

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[11] Inequality reductions of up to 3% over a period of 10 to 15 years are considered attainable. Micro-simulations using 2002 PNAD data indicate that a redistributive effect of this magnitude could be achieved solely as a result of expanding the *Bolsa Familia* program to reach its targets over the next three to five years, assuming perfect targeting. Successful expansion of the program would also have a significant direct effect on extreme poverty (reducing it by about 6 percentage points), and a significant (although more modest) effect on poverty (reducing it by about 3 percentage points).

limitation implies that the growth required to achieve substantial reductions in poverty over the next decade may be out of reach, or that it would take much longer to reach ambitious poverty-reduction targets, given a more realistic growth rate. These tradeoffs and simulations beg the question: *How can public policies foster even modest improvements in income distribution without compromising growth?*

D.   Why is Inequality Important?

1.20   Academic and political debate over income inequality has traditionally focused on the "tradeoffs" between growth and inequality, on the efficiency costs and the political economy obstacles to large-scale redistributive policies (either income redistribution through the tax system or via asset redistribution such as land reform). Under this perspective, the economic policy discussion has been framed in terms of growth vs. redistribution (growing the pie vs. sharing it), suggesting that growth should take precedence over redistribution, that it is more effective first to grow the pie and then share it.

1.21   Some of the main issues in the traditional debate on growth vs. redistribution include: i) the negative effect that excessively high tax burdens associated with large-scale redistributive policies can have on the rate of investment and growth; ii) the poor record in LAC of drastic and politically difficult asset redistributions, which have usually resulted in lower productivity, reduced capital accumulation and growth; and iii) the fiscal and macroeconomic imbalances that could result from unsustainable expansion of redistributive programs. While these issues are clearly important, Brazil has consolidated a solid track record of conservative fiscal and monetary management, which has greatly reduced the risks that expanding the role of social policies to achieve redistributive gains would compromise macroeconomic balances or growth.[12]

1.22   The bottom line in this debate, however, is that economic growth is essential but not sufficient for poverty reduction (something else is needed to ensure that the benefits of growth are more broadly shared) and that economic and social policies must not jeopardize macroeconomic stability since chronic fiscal deficits, unsustainably high tax burdens, and inflation take a heavy toll in terms of crippling growth and increasing poverty.

1.23   Over the last decade, economic development literature has begun to explore the synergies between improved income distribution and growth.[13] This new

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[12] A key assumption to keep those risks in check is that strengthening social policies and expanding transfers targeting the poor should be achieved largely within existing fiscal space. This constraint requires making difficult political choices about investing scarce public resources, integrating and rationalizing existing programs with a clear policy focus on improving the progressiveness, efficiency and effectiveness of social policies and programs.

[13] See, for example, Deininger and Squire (1996a,b); Birdsall, et al. (1995a,b); Birdsall and Londoño (1997); Squire and Lundberg (1999).

approach highlights three important messages that seem particularly relevant to poverty reduction in LAC: i) the economic and political costs of extreme inequality can jeopardize democratic stability and negatively affect the investment climate and economic growth; ii) growth and income distribution are not separate processes and do not occur in sequence; rather, they take place simultaneously as economic agents employ their assets to generate growth and at the same time receive returns on those assets; and iii) there is an important role for public policies in reducing income inequality, by facilitating access to productive assets, particularly human capital, among the poor. Thus, the focus of the discussion shifts to examining the synergies between growth and income distribution implying that both are complementary tools for poverty reduction. The challenge for policymakers is to identify what public policies can do to foster faster growth and broader participation of the poor in generating income and thus in sharing the benefits of that growth.

1.24   Recent studies on poverty and inequality in Brazil have made valuable contributions to address this question. These studies contain a wealth of information on the evolution and profile of poverty and inequality, and more importantly, they provide clues to help analyze the determinants of poverty and inequality. The next two chapters explore these important topics.

II. FACES OF POVERTY AND INEQUALITY

2.1   Poverty and inequality in Brazil have many faces: they affect different population groups in different ways and to different degrees. Thus, an effort to characterize poverty and inequality must start by recognizing their heterogeneity, identifying the population groups where these problems are concentrated in order to sort out the variables that contribute the most toward explaining their overall levels and evolution.

2.2   The analysis is divided into two sections: Section A focuses on the poverty profile and how it has evolved over the last two decades; it selects a set of household and individual characteristics that can best describe the evolution of poverty. Section B focuses on inequality and employs the same set of variables used in the analysis of poverty to break-down the levels and evolution of inequality into two components: inequality "between groups" and inequality "within groups" This analysis provides some interesting clues to help identify the sources of inequality that will be used in Chapter 3 to analyze the probable causes (or the determinants) of Brazil's poverty and inequality.

A.   The Poverty Profile and Changes over the Last Two Decades

2.3   This section aims at shedding light on who the poor are in Brazil. First, the profile of poor households and individuals is analyzed to reveal the various faces of poverty and to focus on those groups that figure more prominently among the poor, based on the latest household survey available (Brazilian Household Survey, PNAD, 2002). Then, an effort is made to analyze how the composition of poverty has changed in the last two decades and in particular to identify which population groups have contributed most to the evolution of poverty. For this purpose, the population has been divided into groups according to a set of household and individual characteristics for which household survey data is available. These categories were used to break down the levels of poverty, as well as the relative shares of each group in the population and in the composition of total poverty for each year over the period 1981-2002.[14] Table A1 (in the Annex) presents a summary of this data, including 11 household characteristics and six individual characteristics selected as the most relevant based on their discriminatory power as well as on their policy relevance.[15]

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[14] The work was carried by IPEA, as part of a background paper for this study (see Barros et al. 2004 a).

[15] Household characteristics include region, area of residence (urban/rural), presence of children (0 to 6 years of age) in the household, presence of elderly (65 and older) in the household, and six head-of-household characteristics: race, literacy status, years of schooling, age, labor-market status (employed, unemployed or out of the labor force) and occupation (formal, informal, public sector, self-employed, employer or unpaid family worker). Individual characteristics include gender, race, literacy, years of schooling, age and labor-market status.

2.4   The Poverty Profile (2002): Table II-1 presents a snapshot of the poverty profile
       in 2002, for both households (Panel A) and individuals (Panel B). Three
       indicators are presented for each group: the poverty incidence, the poverty share,
       and the population share. The groups were selected from Table A1 to highlight
       the differences between groups with a high incidence of poverty or a high share in
       total poverty (shaded in red) and those with relatively low poverty incidence or
       low participation in the composition of total poverty[16] (shaded in green), for each
       variable.

Table II-1: Poverty Profile (2002) Selected Groups

A. HOUSEHOLD CHARACTERISTICS	Poverty Incidence Relative to Mean (a)	Poverty Incidence	Poverty Share	Index of Relative concentration of Poverty (b)	Population Share
Household Residence:					
Northeast	1.7	56.5	49.2	2.5	28.6
Southeast	0.6	21	27.6	1.4	43.2
Urban	0.9	28.6	73.1	1.5	84.1
Rural	1.7	55.5	26.9	0.5	15.9
Demographic characteristics:					
Presence of children (0-6 years old)	1.5	49.6	63.4	1.3	42.1
Head of household characteristics:					
Black or indigenous	1.4	44.9	65.2	1.3	47.7
White or yellow	0.7	21.9	34.8	0.7	52.3
Years of education (household head):					
Less than 4	1.5	50	54.2	3.3	35.6
4 years	1.0	31.3	17.1	1.0	18.0
5 to 7 years	1.2	38	14.3	0.9	12.4
8 years	0.8	24.7	6.7	0.4	8.9
9 to 11 years	0.4	14	7.2	0.4	17.0
12 or more years of education	0.05	1.6	0.4	0.02	8.0
Labor-market status (household head):					
Unemployed	2.1	68.1	7.4	0.2	3.6
Employed	1.0	32.9	77.6	2.3	77.4
Not in the workforce	0.8	26	15.0	0.5	19.0
Informal sector or self-employed	1.3	44.3	67.2	2.0	49.9
Formal sector	0.8	25	22.8	1.4	30.1
Public sector	0.5	16.9	5.5	0.3	10.6
Agriculture workers	1.7	56.4	30.3	3.3	17.6

(a) Poverty headcount of group / national poverty headcount. (b) Poverty share of group, divided by the poverty share that would occur if the poor were evenly distributed across groups in each category.

2.5   Groups with a high incidence and high share of poverty are prime candidates for
       further analysis to identify the sources/determinants of poverty. Households with
       children (ages 0-6) or households where the head is black account for two-thirds
       of all poor households. Households in the Northeast account for one-half of all
       poor households and households where the head of the household has less than

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[16] High/low poverty incidence was defined as 1.2/0.8 times the national poverty rate (33%), and the
thresholds for high/low poverty share were similarly defined as 1.2/0.8 times the poverty share that
would occur if poverty were uniformly distributed across all groups for each variable. For example,
households headed by blacks have a poverty rate of 45% (1.36 times the national average) and a poverty
share of 65%, which is more than 1.2 times the poverty share that would occur if poverty were evenly
distributed across the two racial groups considered (50%). The values of those two ratios, for each group,
are shown in columns (a) and (b). Unshaded areas indicate values between 0.8 to 1.2 times the reference
values.

four years of education account for 54% of household poverty. Regarding the labor-market status of the households, it is worth noting that more than three-fourths of all poor households are households where the head is employed (despite the fact that the poverty incidence among them is exactly the same as the national average). It is also worth noting that households headed by informal-sector workers or self-employed individuals account for two-thirds of all poor households (which has to do with the quality of available jobs and the productivity of those workers, as will be seen in Chapter 3). Other relevant groups worth analyzing include those with high poverty rates but relatively low participation in total poverty (i.e., rural households and households where the head is unemployed) or groups with average poverty rates but very high shares of total poverty (urban households and households where the head is employed).

2.6   The various groups were ranked according to the two criteria used above: the highest incidence of poverty and the highest share of poverty. The first ranking points to groups where *poverty is more acute* or more prevalent: these groups include households where the head is unemployed or working in agriculture; households in the Northeast, rural households, households with children or households where the head has less than four years of education. The second ranking points to groups where the magnitude or *scale of poverty* is more challenging: this ranking highlights the importance of urban poverty and of poverty among the employed, particularly among informal-sector and agricultural workers.

Table II-1: Poverty Profile (2002) Selected Groups (continued)

B. INDIVIDUAL CHARACTERISTICS	(a)	Poverty Incidence	Poverty Share	(b)	Population Share
Race					
Black or indigenous	1.4	45.2	63.8	1.3	46.4
White or yellow	0.7	22.2	36.2	0.7	53.6
Gender					
Male	1.0	33.1	49.1	1.0	48.8
Female	1.0	32.7	50.9	1.0	51.2
Age (years)					
0 to 6	1.6	51.6	19.8	1.2	12.6
7 to 14	1.4	47.4	22.3	1.3	15.5
15 to 17	1.2	38.7	7.1	0.4	6.0
18 to 24	0.9	30.3	12.3	0.7	13.4
25 to 65	0.8	26.1	36.6	2.2	46.1
65 and older	0.3	9.4	1.8	0.1	6.4
Years of education (individual)					
Less than 4	1.2	38.2	50.5	3.0	31.9
4 years	0.7	24.4	17.2	1.0	17.0
5 to 7	0.9	30.9	15.5	0.9	12.1
8	0.6	19.0	7.2	0.4	9.1
9 to 11	0.3	10.9	9.1	0.5	20.1
12 or more years of education	0.04	1.2	0.5	0.03	9.9
Labor-market status (individual)					
Unemployed	1.3	43.7	8.6	0.3	5.7
Employed	0.8	24.7	47.6	1.4	38.9
Not in the workforce	1.0	32.4	43.8	1.3	55.4

2.7   The results shown for individual characteristics of poverty complement the poverty profile for households by indicating the population groups that account for the lion's share of poverty. In particular, the following conclusions stand out: i) almost two-thirds of the poor are black or indigenous, which is 1.4 times their share in the population; ii) there is no gender difference in either the poverty incidence or the poverty share among individuals (although not shown in Panel A, the same holds true for households); iii) children and adolescents represent more than 40% of the poor and their poverty incidence is more than 1.5 times the national average; iv) more than two-thirds of the poor have four years of education or less; and v) a clear inverse correlation exists between poverty and education, which can be seen in the ranking of indicators (a) or (b) across groups with different levels of education (this conclusion holds for both households and individuals).

2.8   The ranking of individuals by poverty incidence adds the concept of *vulnerability*. Results indicate that the groups with the highest probability of being poor are children (ages 0 to 6, and 7 to 14), followed by adolescents and young adults (ages 15 to 25), blacks, and individuals with less than four years of education.

2.9   The above exercise must be interpreted with caution, since it only shows correlations between poverty and various important dimensions of the problem that simultaneously affect or determine the probability of being poor. The data do not tell us why a particular group is over-represented among the poor or why poverty seems to be concentrated in a particular region. We do not know, for instance, whether the high poverty rates among blacks are due to another variable (such as differences in education or quality of jobs available to them). Likewise, we cannot tell from the data whether the concentration of poverty in the Northeast is related to the share of rural population in the region or what economic determinants are behind the higher prevalence of poverty in the Northeast or in rural areas.

2.10   The next section tries to gauge the "explanatory power" of the main variables correlated with poverty in an attempt to sort out which variables are the principal determinants of observed differences in poverty among different groups and which ones are simply features of the poverty profile in Brazil.

2.11   Explaining the poverty profile: In order to sort out the relative "explanatory power" of the variables that are used to describe poverty, a multivariate logit model of the probability of being poor was estimated, and the regression coefficients were used to simulate the effects of changes in one variable of the model on the probability of being poor, while holding the other variables constant.[17]   This "controlled" estimate of the predicted poverty incidence was

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[17] The expression for the logit regression is Ln $(P/1-P) = \beta X'$ where X' is a vector of regressors and Ln $(P/1-P)$ is the logit for the "odds ratio" of being poor. P is the probability of being poor and $1-P$ is the probability of not being poor, conditional on X'.

contrasted with the simple poverty incidence for each variable, which expresses the probability of being poor for each variable, independent of the others. The explanatory variables used include two individual characteristics (age and race) and six household characteristics: region of residence, urban/rural area, and four variables for the head of the household (gender, race, age, years of schooling, and labor-market occupation). Results of this exercise are presented in Tables A2 (in the Annex).

2.12 These results are then translated into an indicator that captures the discriminatory power of each variable to explain differences in poverty.[18] The graph below ranks the key variables according to the value of this indicator, calculated for the simulations of the probability of being poor, with and without controls. The results show that of the six variables strongly correlated with poverty (age, race, region, urban/rural area, years of schooling of household head, and labor-market status of head), only three (age, region, and years of schooling of the household head) are powerful predictors of differences in poverty, controlling for the other variables. Race and urban/rural area are correlated with poverty, but that correlation is explained by something else (the interplay of the other variables). Similar results were obtained for extreme poverty; in that case, labor-market status and occupation of the household head are also important determinants.

Graph II-1
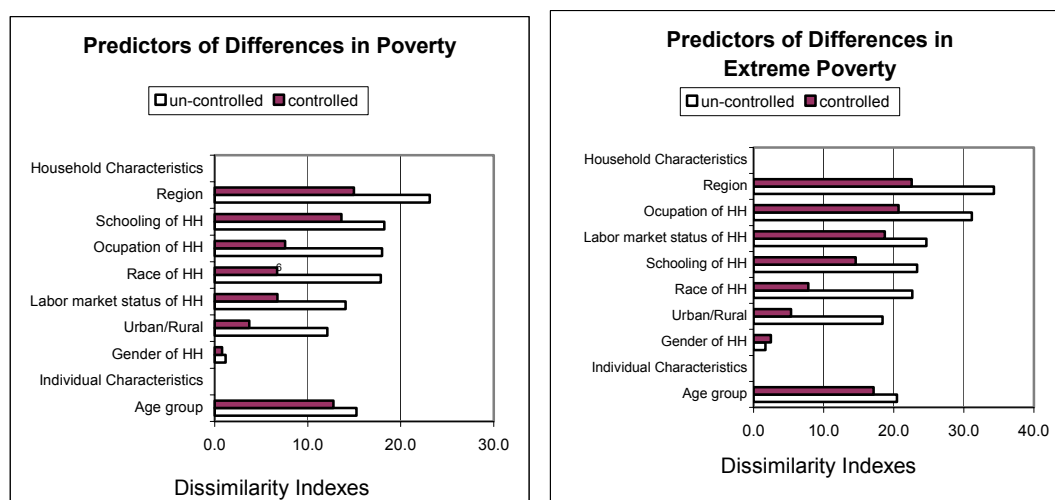
2.13 Changes in the poverty profile (1981-2002): So far, we have identified the household groups and population groups where poverty is concentrated, based on a 2002 snapshot. This section provides a broader perspective by introducing a

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[18] The indicator used is the "dissimilarity index," which is used in sociology to express the minimum percentage of the population that would need to be reallocated among groups of a particular dimension of analysis so that all groups have the same percentage of poverty. The higher the index, the higher the variable's discriminatory power. The formula for this indicator is $(\sum \alpha i |Pi - \mathbf{P}|)/2\mathbf{P}$, where Pi is the poverty headcount for the ith group and $\mathbf{P}$ is the weighted average poverty rate for all groups.

dynamic element in the evolution of the poverty profile. The analysis is based on Table A1 in the Annex, which presents the evolution of the three indicators used in the previous section: the poverty rate (incidence), the poverty share, and the population share for each group analyzed.

2.14   One way to interpret these data is to focus on the dynamics of the poverty share for each group, which can be explained by changes in that group's poverty incidence or relative share in the population. This approach makes it easier to identify the sources of the changing contribution of each group to total poverty. Groups that have increased their contribution to total poverty have either increased the incidence of poverty or have increased their share in the population, or both. Groups that have decreased their contribution to total poverty have either become proportionately less poor or have grown smaller.

Table II-2: Groups with the Highest Changes in Poverty Share (1981-2002)

Selected Groups	Changes in poverty share	Changes in population share	Changes in poverty incidence
A. Groups with increased poverty share			
Urban households	+ 20% points	+ 13%	-1.2%
Households where the head is literate	+ 17% points	+12%	-1.8%
Households with no children (ages 0-6)	+13% points	+17%	-2.0%
Households where the head completed 5-7 years of education	+ 12% points	+8%	+18%
Female-headed households	+10% points	+10%	-7%
Households in the North region	+ 6% points	+3%	+7%
B. Groups with decreased poverty share			
Households head with less than 4 years of education	-25% points	-13%	-9%
Rural households	-25% points	-21%	-5%
Households where head is illiterate	-17% points	-12%	-8%
Households with children (ages 0-6)	-13% points	-17%	-2%
Male-headed households	-10% points	-10%	-7%
Households with head employed	-6% point	-6%	-7%
Households in the Southeast region	-5% points	-1%	-11%
Households in the Northeast region	-3% points	-1%	-10%

2.15   The data in Table II-2 provide valuable information about changes in poverty for specific population groups, selected because of their contribution to changes in the composition of total poverty. Three patterns can be observed from the data: i) practically all groups experienced reductions in poverty incidence; ii) for every group that experienced an important increase in the poverty share, there is at least one other group in the same category of analysis (region, area, demographic composition, gender, race, age, education, labor-market status, etc) that experienced an important decrease in the poverty share. This counterbalance is to be expected since the exercise merely disaggregates total poverty among groups for each category; and iii) the biggest reductions in poverty share occurred among some of the groups with the highest poverty rates (rural households or households where the head had little or no education), while some groups that increased their poverty share are among the groups with relatively lower poverty rates (urban households, households with no children, or households where the head is literate). These shifts are a sign of convergence among the groups in each category, as will be explained in the next section.

2.16   It is beyond the scope of this paper to explain the dynamics behind changes in the poverty incidence and changes in the composition of the population for each group or for each category. However, looking at the trends in the poverty incidence and population shares for some categories of analysis provides several relevant clues to identify possible determinants of poverty. In particular, changes related to the education and labor-market status of the population will be further analyzed, since they are associated with the determinants of labor income that will be the focus of the analysis in Chapter 3.

2.17   The graphs below show the changes in poverty incidence for households broken down by education and labor-market status of the household head.

Graph II-2: Poverty Incidence by Education
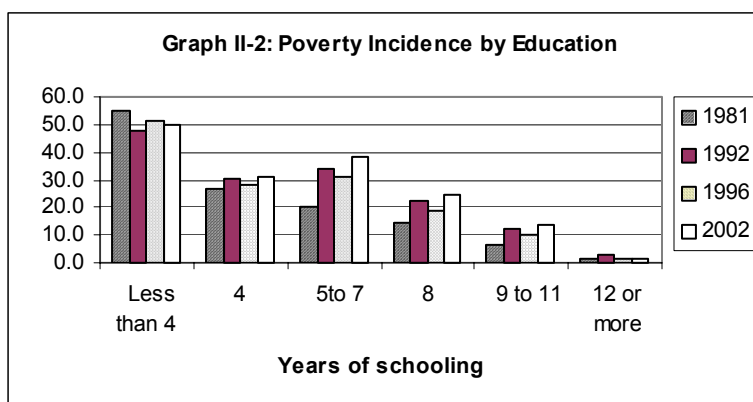
2.18   Graph II-2 shows the well-known inverse relation between the poverty rate and the education level of the household head. The probability of being poor is 50% for households where the head has less than four years of education. This probability is drastically reduced (to less than 25%) when the household head has completed primary education (eight years) and is practically zero for household heads with post-secondary education. Another notable feature, however, is that the poverty rate for households whose heads have had 5 to 11 years of education has been gradually rising. This shift is a combined result of rapid increases in access to these levels of education and increasing minimum education levels demanded by the labor market. These results are both encouraging, in the sense that they show progress in reducing the gaps in access to education, but also challenging since the interplay of supply and demand tends to reduce the returns to basic education and hence increase the poverty incidence for each level of education, except post-secondary education.

Graph II-3: Poverty by Labor Market Category
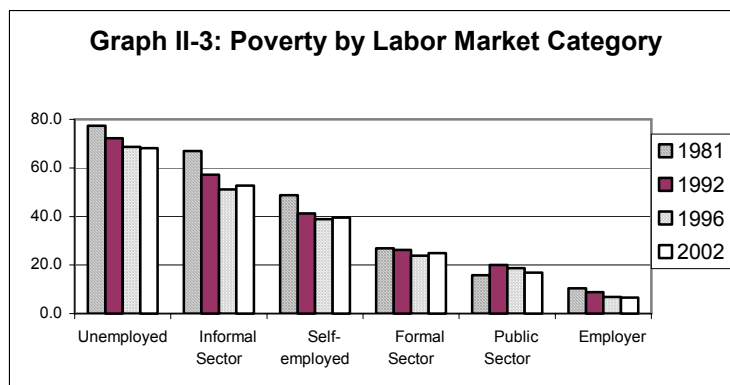
2.19 Graph II-3 shows that the unemployed are particularly at risk since their probability of being poor is the highest (almost twice the poverty incidence of households whose head is employed). The poverty rates for the employed show a clear segmentation between low-quality or low-paying jobs (informal-sector workers and the self-employed) and higher-quality jobs paying higher wages (formal sector, public sector and employers). The quality of jobs as a determinant of poverty will be further discussed in Chapter 3.

2.20 Components of poverty reduction in the 1990s: Changes in the aggregate poverty rate for Brazil can be broken down as an average of the poverty rates of various groups of the population, weighted by their relative shares in the population. Given that no sustainable poverty reduction occurred during the 1980s, the focus of the exercise is on explaining the contribution of the different categories and groups of the population toward the overall reduction in poverty between 1992 and 2002. This analysis was done separately for the household groups in each category in Table A1. In each case, the total reduction in poverty was broken down into the component based on reductions in the poverty rates of the groups in the category (poverty incidence effect) and the component based on changes in the distribution of the population across the various groups in each category (composition effect). The results are presented in Table II-4 below.

Table II-3: Contributions to Poverty Reduction (1992-2002)

Categories of Analysis (Household Characteristics)	Poverty Reduction	
	Poverty Incidence Effect	Composition Effect
Region of residence	104	-4
Residence in urban/rural area	79	21
Presence of children (ages 0-6)	70	30
Presence of elderly (ages 65 and older)	97	3
Gender	98	2
Race	104	-4
Literacy of the head of household	80	20
Education: years of schooling	47	53
Age of household head	94	6
Labor-market status	99	1
Type of work (occupation)	106	-6

Source: IPEA, based on PNADs.

2.21 The results show that poverty reduction was for the most part the result of lower levels of poverty inside the groups in each category, and only a small part was due to changes in the distribution of the population among the groups in each category. This observation is consistent with the fact that most poverty reduction occurred as a result of price stabilization, which resulted in higher real incomes for all population groups. However, a few special cases are worth noting.

2.22 Educational progress played an important role: a rapid increase in the population's education levels (over the last two decades) resulted in important changes in the composition of the population across educational groups, from groups with lower education and consequently higher poverty rates to groups with higher education and lower poverty rates. The shift was large enough to counteract the tendency (mentioned in the previous section) of the poverty rate to increase slightly for each educational group reflecting decreasing returns for some levels of education, as a consequence of broader access to education. Improvements in literacy also contributed, albeit on a smaller scale. Other important changes are related to continued rural/urban migration and demographics. Urbanization continues to play an important role as the population continues to move out of rural areas with higher poverty rates toward cities with lower poverty rates, despite the unwanted result that the urban poverty rate is increasing, particularly in large metropolitan areas. Low fertility rates have also reduced the size of families and the proportion of families with children; the first factor directly helps increase per-capita income and reduce poverty and the latter contributes by altering the composition of families toward groups with lower poverty rates.

2.23 Finally, the negative signs of the contribution effects of race and region indicate that the population has shifted from regions with lower poverty rates to regions of higher poverty, thereby contributing to increases in poverty. This shift happened as the share of the population in the South and Southeast decreased and the share of the population in the North, Northeast and Center-West rose, increasing the share of poverty in those regions. In the case of race, the proportion of households headed by blacks or indigenous persons grew from 43% in 1992 to 48% in 2002, while the share of households headed by white or yellow individuals decreased from 57% to 52%. This shift is largely responsible for the growing share of black households in total poverty, from 60% in 1992 to 65% in 2002. Nevertheless, reductions in the poverty incidence during the 1990s -- across all regions (except the North) and across all racial groups -- more than offset the negative composition effect.

B.   Components of Inequality

2.24 Similar to the analysis of poverty in the previous section, three topics are explored to describe the anatomy of income inequality in Brazil. First, income inequality is broken down along the same analytic categories used for poverty to gauge the relative importance of inequalities between population groups vs. inequalities

within those groups. This static view is then broadened to analyze some of the trends in the components of inequality over the last decade. Finally, an effort is made to identify the population groups with higher or lower inequality and to focus on those groups where inequality increased or declined significantly over the last two decades. The analysis provides some clues toward identifying sources of inequality that are further developed in Chapter 3.

2.25   Components of income inequality (2002): Inequality is reflected in income differences among households or individuals belonging to the same population group as well as in income differences between households belonging to different population groups. Since total inequality is the average of inequalities of all population groups, it can be expressed as the sum of the inequality between groups and the average inequality within those groups. Table II-3 A and B show the results of this breakdown for each of the 20 analytical categories used in the analysis of inequality among households and among individuals.

Table II-3A: Components of Inequality by Household Characteristics

Categories of Analysis	Inequality within groups (%)	Inequality between groups (%)
Region of residence	92.8	7.2
Urban/rural area	94.2	5.8
Presence of children (ages 0 to 6)	91.4	8.6
Presence of elderly (ages 65 and older)	99.1	0.9
Gender of household head	100.0	0.0
Race of household head	89.5	10.5
Literacy status of household head	92.5	7.5
Education: years of schooling of head	60.5	39.5
Age of household head	97.5	2.5
Labor-market status	98.6	1.4
Occupation of household head	85.0	15.0
Sector of work of household head	90.3	9.7

Source: Barros et al, 2004 a. Based on Brazilian Household Survey (PNAD) 2002.

2.26   Table II-3A shows that inequality between groups accounts for a relatively small part of total inequality. Almost all inequality in Brazil can be attributed to inequality within groups. This is true for most of the variables (categories) used to break down the population into groups. Education is the salient exception, since differences in the mean income of groups with different levels of education account for almost 40% of total inequality. Inequalities between groups according to the household head's race, occupation and sector of work also contribute to total inequality, albeit on a smaller scale (between 10 and 15%).

2.27   This conclusion has important implications for policies designed to reduce inequality in Brazil. Since most inequality is not due to differences between the targeted groups, redistributive policies aimed at compensating those differences address only a relatively small part of the problem. Moreover, they miss the

determinants of the larger portion of inequality, which cannot be explained by differences between population groups but by other factors that should be identified. This factor may account for the relative ineffectiveness of long-standing policies for reducing inequalities among regions. Consideration of inequality within groups is relevant to the design of more recent policies and programs targeting particular population groups, whether defined by gender, race, unemployment or other characteristic. For a discussion of race and gender discrimination issues and their links to income inequality, see Box II-1.

2.28 The conclusions about the components of inequality by individual characteristics shown in Table II-3B are almost identical to the ones for Table II-3A, and reinforce the same messages.

Table II-3B: Components of Inequality by Individual Characteristics

Categories of analysis	Inequality within groups (%)	Inequality between groups (%)
Gender	100.0	0.0
Race	89.7	10.3
Literacy status	93.9	6.1
Education: years of schooling	63.9	36.1
Age	94.0	6.0
Labor-market status	98.9	1.1
Occupation	84.8	15.2
Sector of work	90.7	9.3

Source: Barros et al, 2004 a. Based on Brazilian Household Survey (PNAD) 2002.

2.29 Geography is another important dimension for analyzing inequality. While traditional analyses of inequality have emphasized its regional dimension, more recent studies have broken down geographic inequality into its regional, state and municipal dimensions. Table II-4 shows the results of this breakdown and how it has changed over the last decade. The main conclusions are striking. First, regional inequality accounts for only 8% of total inequality in Brazil[19]; inequality between states in the same region explains another 2%; inequalities between municipalities in the same state account for an additional 14%, and the remainder (76%) of total inequality is accounted for by inequalities within families in the same municipalities. Second, the geographic dimensions of inequality are

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[19] The modest contribution of regional differences towards explaining total income differentials contrasts with the weight of regional differences in explaining differences in poverty (see p.p. 2.12 and Graph II-1). This apparent paradox, however is explained because regional differences influence poverty and inequality in different ways. While the region of residence is a robust predictor of the probability of being poor regional inequality plays a modest role in explaining aggregate income inequality mainly because income differences within regions are much larger than the differences in average incomes between regions. The significant effect of the regional variable as a predictor of poverty is explained because regional differences in economic factors, infrastructure and institutional development determine substantial differences in average economic productivity among regions which, in turn, are strong determinants of the level and growth of average family income. Thus, the regional variable is an important determinant of poverty through its effect on growth and average productivity.

gradually decreasing in importance, while inequalities among families are increasing. The implications are quite strong: in looking for sources or causes of inequality: the focus must be on the determinants of income at the household level.

Table II-4: Components of Geographic Inequality in Brazil

Components of inequality	Inequality (Theil Index)		Changes 1991-2000	Contribution to total inequality (%)		Changes 1991-2000
	1991	2000		1991	2000	
Total Brazil	0.77	0.76	-0.01	100.0	100.0	…
Between regions	0.08	0.06	-0.02	11.0	8.0	-3.0
Between states in the same region	0.03	0.02	-0.01	3.0	2.0	-1.0
Between municipalities in the same state	0.13	0.11	-0.02	17.0	14.0	-3.0
Between families in the same municipality	0.53	0.58	0.04	69.0	76.0	7.0

Source: Barros et al (2004a).

Box II-1: Race and Gender Discrimination[20]

Definitions: Although the concept of discrimination is used broadly to refer to various differences among population groups that are socially perceived as "unfair," we say income or wage *discrimination* exists whenever individuals with exactly the same qualifications are rewarded differently for doing the same work. *Differences in opportunities* -- such as differences in access to or quality of education, or differences in access to jobs -- may also be forms of discrimination, provided they are not due to differences in ability or productivity among individuals.

Income differences by race and gender: Data from PNAD (2002) shows that substantial differences exist in hourly wages and labor earnings among workers according to their race or gender. Average labor earnings for black workers were almost 50% lower than those for white workers and about 30% lower for women than for men.

How much labor-market discrimination is there? Part of these differences in labor earnings, however, reflects differences in other characteristics that affect an individual's productivity (i.e., differences in workers' qualifications). Likewise, differences of region, sector of work or type of occupation also affect the average labor productivity and are reflected in differences in average labor earnings. Therefore, it is necessary to control for such differences to gauge the true magnitude of wage discrimination.

After controlling for all these variables, the magnitude of labor earning differentials that can be attributed solely to race or gender is substantially reduced in the case of race (12%), but actually increased (to 38%) in the case of gender. This means that about three-fourths of the racial gap in labor earnings are explained by other variables, mainly differences in education levels. By contrast, since women have managed to overcome former disadvantages in education and are now more educated than men, controlling for differences in qualifications actually reveals a larger wage discrimination in the case of gender.

How important is discrimination? The value a society attaches to fighting discrimination and other unfair forms of exclusion may be independent of the magnitude of these measurements of discrimination. Thus, the results presented on labor-market discrimination in no way undermine the importance of the issues or preempt policies and programs aimed at increasing awareness about racial or gender discrimination in Brazil. Fighting all forms of discrimination has a social and political value beyond reducing unjustified economic differences. Nevertheless, it is important to put these economic differences in context so as to better inform policies specifically geared toward reducing poverty and inequality.

The importance of better understanding discrimination: It is important to conduct further research to help understand the sources of racial earnings inequality and the various ways in which differences in education affect different social groups. Recent research in Brazil reveals that differences in returns to education and differences in access to higher-quality jobs compound the effects of differences in the quantity and quality of education on racial earnings inequality.[21] Research also shows that family background and parents' education level tend to perpetuate educational differences, reducing educational mobility. Despite recent progress, educational mobility in Brazil is particularly low compared to other countries[22].

Policy Implications: The policy implications are threefold: i) specific policies and programs to reduce poverty and inequality affecting excluded population groups need to address other variables that may be important determinants of observed differences between groups; ii) targeted programs aimed at compensating or otherwise reducing racial or gender gaps in welfare indicators are essentially complementary to other mainstream policies directly aimed at correcting some of the structural determinants of social exclusion; chief among these is improving the quality and equity of educational opportunities; and iii) reducing or even eliminating differences in educational quality and attainment may be the single-most powerful tool for social inclusion and social mobility; but it alone does not guarantee that discrimination will disappear, as illustrated by the persistent wage discrimination affecting women.

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[20] The concept of discrimination used in this study refers mainly to labor-market discrimination. Discrimination is a broader phenomenon that can affect education opportunities and other aspects of life in a society.

[21] See, for instance, Arias et al. (2002), Silva (1999), and Jaccoud et al. (2002).

[22] See Arias et al (2002) or Ferreira and Veloso (2004).

2.30 Changes in the components of inequality over the last two decades: The analysis described in the last section was carried out for each year from 1981 to 2002. Despite the stability of aggregate inequality – the Theil Index for Brazil in 2002 (0.71) was not very different from that in 1981 (0.68) – some relevant patterns can be identified in the components of inequality throughout the decade. For most categories analyzed, signs indicate that the share of inequality between groups is starting to decline, accompanied by a gradual increase in the share of inequality within groups. This shift may be a sign of a slow convergence between groups (for example, between regions, or between educational groups) and simultaneously an increase in the importance of other factors increasing the range of disparities within groups.

2.31 Identifying groups with higher/lower internal inequality 2002: Table II-5, below presents a summary of the population groups with higher/lower internal inequality. The groups selected are those with the highest/lowest inequality for each category of analysis.[23] In each case, inequality is measured by the Theil Index. This analysis is relevant since it helps distinguish among groups where poverty is more sensitive to changes in inequality (because inequality is extremely high) vs. other groups where inequality is less prominent and hence poverty is basically determined by low average productivity or incomes.

Table II-5: High vs. Low Inequality (2002)

High Inequality Groups	Inequality within (Theil)	Low Inequality Groups	Inequality within (Theil)
Household characteristics		**Household characteristics**	
Unemployed (head of household)	0.81	Black or indigenous (head)	0.56
Residence in the Northeast	0.79	Rural households	0.55
Working in agriculture	0.76	Household head under 24	0.55
Residence in the Center-west	0.73	Working in construction	0.52
Male head	0.72	8 years of education	0.46
Employed	0.71	12 or more years of education	0.42
		Less than 4 years of education	0.41
		Illiterate head of household	0.36
Individual characteristics		**Individual characteristics**	
Male	0.74	Self-employed	0.65
Age 65 and older	0.73	Unemployed	0.64
Not in the workforce	0.73	Age 18-24	0.59
		Black	0.56
		Formal sector worker	0.50
		Working in retail commerce	0.49
		8 years of education	0.48
		Illiterate	0.35

Source: IPEA, based on PNAD 2002.

2.32 Several points are worth highlighting. The groups with the highest levels of inequality are households where the head is unemployed (0.81) and households in the Northeast (0.79), which indicate that high poverty among those groups has a

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[23] "High" inequality groups are those where internal inequality is higher than the national average (Theil=0.71). "Low" inequality groups are defined as those where the Theil index for inequality is below 0.65.

lot to do with inequality. Notice also that inequality among male-headed households and among male workers is relatively high (0.74), while that among female workers is lower (0.69). Likewise, inequality among rural households and inequality among households headed by black or indigenous individuals is lower than that among urban households or white-headed households. The group with the lowest inequality is illiterate workers, an indication that the high poverty rate among them is basically due to low average incomes and not to inequality. Employed households have exactly the average inequality. Households where the head works in agriculture exhibit a higher level of inequality (0.76). By contrast, unemployed workers have a lower level of inequality (0.64) as do the self-employed (0.65). Thus, the high incidence of poverty between these last two groups is probably a reflection of low average incomes.

2.33   The relatively low degree of inequality *within* all educational categories is a reflection of the above-mentioned fact that inequality *between* those groups is substantial in Brazil, meaning that there are significant differences (gains) in the mean income per-capita of individuals as they progress to higher educational levels. Nevertheless, the ranking of internal inequality across educational groups shows some interesting features: the groups with the lowest levels of inequality are households where the head has less than four years of education (0.41) and households where the head has more than 12 years of education (0.42). In the first case, this is also the group with the highest poverty rates, and in the second case the group with the lowest poverty rates. The educational group with the highest internal inequality is that of individuals with eight years of education (0.48).

Identifying Groups with the Largest Increases/Decreases in Inequality:

2.34   Finally, the descriptive analysis of inequality is completed by looking at which groups experienced the largest increases or decreases in *internal inequality* over the last decade.

Table II-6: Groups with Larger Increases/Reductions in Internal Inequality

Groups where inequality increased	Theil increase 1981-92	Theil increase 1992-2002	Groups where inequality decreased	Theil decrease 1981-92	Theil decrease 1992-2002
Household characteristics			**Household characteristics**		
Head in personal services	0.15	0.13	Head Schooling 8 years	0.06	-0.14
Head in informal sector	0.06	0.09	Head working in Commerce	-0.05	-0.09
Head out of =Labor Force	0.07	0.07	Residence in the South	-0.04	-0.08
Head under 24 years old	0.09	0.06	Head Schooling 4 years	-0.00	-0.08
Residence in the Northeast	0.08	0.05	Head illiterate	-0.02	-0.05
Residence in North region	0.11	0.04	Schooling less than 4 years	-0.02	-0.03
Schooling 9-11 years	0.07	0.04	Head unemployed	-0.15	-0.01
Residence in urban area	0.05	0.04			
Individual Characteristics			**Individual Characteristics**		
Informal-sector worker	0.04	0.06	Schooling 4 years	-0.02	-0.11
Out of workforce	0.04	0.06	Working in retail Commerce	-0.06	-0.08
Ages 15-17	0.08	0.05	Illiterate	-0.06	-0.04
Self-employed	0.06	0.03	Schooling less than 4 years	-0.05	-0.04
Ages 18-24	0.06	0.02	Work in traditional industries	-0.04	-0.04
Schooling 12 or more years	0.08	0.02	Employed	-0.02	-0.02
Schooling 9-11 years	0.06	0.02			

2.35 Table II-6 presents a selection of groups with the largest increases/decreases in inequality during the period 1992-2002. Changes in inequality over the previous decade are also provided for reference. The table confirms the previously mentioned trend that inequality within groups seems to be growing. It is evident that increases in inequality are on average larger than decreases in inequality. An interesting pattern emerged regarding education: inequality increased for groups with higher levels of education (nine or more years) while it decreased for groups with eight years of schooling or less. Also, inequality increased among youth and workers in the informal sector and in the personal services sector. Inequality increased in the North, Northeast and in urban areas, while it decreased in the South.

C.   Synthesis and Main Conclusions

2.36 This chapter presented a descriptive analysis of poverty and inequality, identifying their profile, components and the ways in which those components have changed. The analysis of poverty first identified the population groups with the highest incidence of poverty and those with the highest shares of total poverty. Using the same categories used for poverty, inequality was broken down into two components: inequality within groups and inequality between groups. It was shown that the former is much more significant than the latter in accounting for total inequality. Only in the case of education, inequality between groups is as significant as inequality within groups. Furthermore, it was shown that inequality between groups has slowly decreased, while inequality within groups has grown. Finally, the groups with the higher/lower levels of inequality and those with the larger increases/decreases in inequality were identified. It is clear that changes in poverty and inequality have a lot to do with the determinants of family income, chief among those, the determinants of labor income, which accounts for more than three-fourths of total family income. The next chapter focuses on the determinants of mean family income and of income inequality, the two fundamental factors that determine income poverty.

III. DETERMINANTS OF POVERTY AND INEQUALITY

3.1 In the previous chapter, a descriptive analysis of poverty and inequality was developed. The analysis focused on identifying not only the characteristics of poverty and inequality, but also on a set of associated variables, especially those that have better "explanatory power" either because they are robust predictors of differences in poverty, or because they account for significant components of inequality. In this chapter, we shift the focus to the determinants or the causes of poverty and inequality, which requires explanations of poverty that have an actual grounding in economic models of causality. The starting point is to recognize that income poverty is the result of two fundamental determinants: growth and inequality. Therefore, the analysis will focus on the determinants of mean income per-capita (growth) and the determinants of differences in per-capita income (inequality). The results presented are drawn from recent work by IPEA on the labor market as well as from two background papers commissioned for this study.[24]

A. Determinants of Per-Capita Family Income

3.2 Box III-1 describes the theoretical model used to explain the determinants of family income per-capita. Per-capita income is a function of six determinants encompassing demographic variables (the number of adults per family, which is the inverse of the dependency ratio), and of the main sources of income (transfers, income from assets, and labor income). Labor income is the product of two factors: access to jobs (measured by the employment ratio), and productivity of those jobs, which in turn is determined by two variables, the worker qualifications and the quality of the job posts.

Box III-1. Per-Capita Income Model

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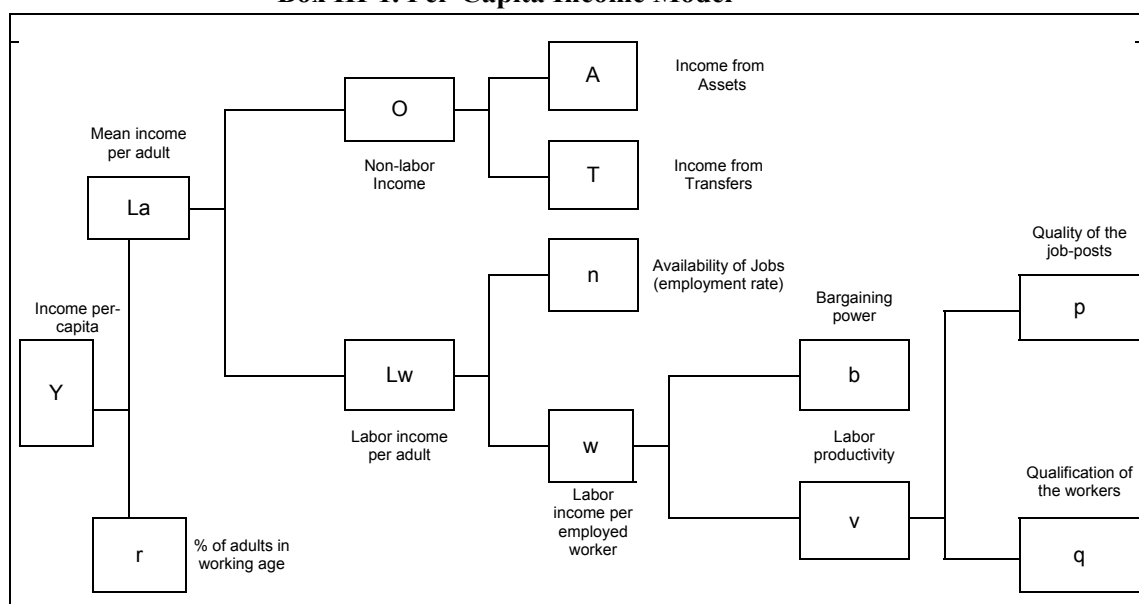
[24] The theoretical model for the determinants of mean per-capita income is drawn from the book "*Acesso ao trabalho e produtividade no Brazil*" (Barros et al, 2004) and the analysis of the determinants of inequality is based on two background papers by Barros, Carvalho and Franco (2004 b and c).

3.3   The analysis in this chapter will focus mainly on the determinants of labor income, which represents over 75% of total per-capita income in Brazil, for all income quintiles (see graph below). Family income is largely determined in the labor market, which is also where income differences are determined or revealed (see the next section).
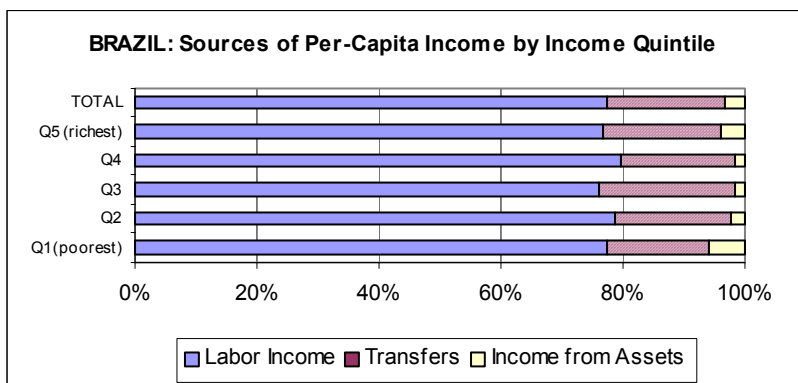
Graph III-1

B.   **Determinants of Changes in Per-Capita Income over the Last Decade:**

3.4   Table III-1 shows the results of using the model to explain the sources of per-capita income growth during the 1990s. The table shows that during this time period, per-capita income grew by 30%, in real terms. Roughly one-third of that growth was due to demographics (an increase in the percentage of the working-age population), one-third to a strong increase in non-labor incomes, and one-third to increases in labor incomes. Looking at the growth rates of each of the variables over the period, it is clear that labor income per adult increased only modestly (12%) over the whole decade, while non-labor income increased by 50%, driven by transfers, which increased by a healthy 58%.

Table III-1: Determinant of Per-Capita Income Growth (1992-2002)

Determinants of per-capita Income	Contribution (%)	1992	2002	% Growth 1992-2002
Income per-capita[25]	*100%.*	263	343	**30.2%**
Demographics (% of adults in working age)	*32*	0.66	0.72	**8.8%**
Non-labor Incomes	*36*	83	124	**49.7%**
Income from assets	*1*	14	15	7.5%
Income from transfers	*35*	69	110	57.9%
Labor income per adult in working age	*32*	315	352	**11.8%**
Availability of jobs (employment rate)	*-18*	0.67	0.63	-6.1%
Labor productivity (labor income per worker)	*50*	470	560	19.0%
Worker qualifications	*44*	0.86	1.00	16.3%
Quality of the job-posts	*7*	547	560	2.4%

Source: Barros, Carvalho, Franco e Mendonça (2004)

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[25] All incomes are expressed in Rs. of 2002. Worker qualification, a function of years of schooling, is measured in relation to the qualification of the average worker in 2002, which is defined to be 1.00. Quality of the job posts is defined as the ratio between labor productivity / worker qualification.

3.5   The three main factors responsible for per-capita income growth over the last decade -- which resulted in an 8% reduction in poverty – were i) the taming of inflation (which increased real incomes across all groups),[26] ii) the significant strengthening of social transfers -- particularly targeted cash transfers -- in the second half of the 1990s, and iii) significant improvement in the qualification of the workforce (as a result of expanded access to education).

3.6   One of the chief factors limiting income growth was the disappointing performance of the labor market, not only in terms of employment generation, but mainly in terms of the productivity and quality of jobs. The employment rate actually decreased by 6% over the decade (mirroring the increase in unemployment from 6% to 12%), and labor productivity increased only modestly (19% over the whole decade), driven by an improvement in the qualification of the workforce (which grew by 16%) with practically no improvement in the quality of job posts (2%). The poor performance of the labor market is better understood when compared with indicators from other countries. A comparison of the determinants of Brazil's labor income with other countries in the region and with more developed countries in the Organization for Economic Cooperation and Development (OECD) is presented in Table A3 (in the Annex). The data show that the differences in mean per-capita income between Brazil and the other countries chosen for comparison can be entirely explained by Brazil's lower labor productivity, which goes hand-in-hand with lower wages. Brazil's average labor productivity in Brazil is only half of that in Argentina and one-third the average for OECD countries. Despite significant improvements over the last decade, education of the workforce is still lagging behind other countries (it is 30% higher in Chile, Uruguay or Mexico; 50% higher in Argentina; and 62% higher in OECD countries). The quality of the job posts is roughly the same as the average for other LAC countries, but the region is lagging behind OECD countries where the quality of the jobs indicator is almost twice the average for the LAC countries chosen for comparison.[27]

C.   **Determinants of Income Inequality**

3.7   The first step in exploring the determinants of income inequality is to use the 2002 PNAD data to estimate the model for income per-capita (Box 1) and then use it to simulate what would happen to income inequality if we control for (eliminate) inequalities in each of the sources of income. Results of this exercise provide an estimate of the relative contribution of each variable to total inequality. The main conclusions from Table III-2 are: i) differences in the proportion of adults (the inverse of the dependency ratio) explain 11% of inequality in per-capita income of households; ii) differences in non-labor income (from government transfers and from assets) account for another 23% of inequality; iii)

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[26] Per-capita income increased by 30% over the decade, but the effect was particularly beneficial among the poorest groups, with real income growth of 52% for the first income decile and 34% for the second decile.

[27] LAC countries included in the comparison were Mexico, Argentina, Uruguay and Chile.

an additional 5% is explained by differences in access to jobs (employment rate); and iv) the remaining 61% is explained by differences in labor productivity. Differences in productivity, in turn, are explained by differences in worker qualifications (45%), labor-market imperfections (25%) and the remainder (30%) by other unexplained factors (residual).

Table III-2: Determinants of Per-Capita Income Inequality

Determinants: differences in …	% Contribution to National Inequality1		
	% of total income inequality	% Explained by Inequality in labor income	% of explained inequality in labor income
TOTAL	100		
Demographics (% of adults)	11	-	-
Non-labor Income2	23	-	-
Income from transfers	12	-	-
Income from assets	11	-	-
Access to jobs (employment rate)	5	-	-
Labor productivity (mean income per worker)3	61	100	100
Worker qualifications	27	45	65
Labor-market imperfections	15	25	35
Discrimination	0	1	1
Segmentation	15	24	34
Other factors (unexplained residual)	19	30	-

Source: Barros et al (2004 b) based on 2002 PNAD. Notes: 1) Inequality is measured by the Theil Index. 2) Effect of eliminating differences in non-labor income among all individuals who receive non-labor income.3) Effect of eliminating differences in labor income among all individuals who receive non-labor income.

3.8   Since labor income plays such an important role in the determination of per-capita income, we further explore the determinants of inequality in labor incomes by distinguishing the differences that are due to differences in workers' qualifications (including education and experience), from differences in labor income among workers with exactly the same qualifications, which can be attributed to labor-market imperfections. These in turn can be of two different sorts: *discrimination* -- which occurs when workers with exactly the same qualifications get paid differently for doing exactly the same job, and *segmentation* -- which exists whenever workers of the same qualifications get paid differently because they have access to jobs of different quality. The results of this breakdown are shown in Table III-3.

Table III-3: Components of Inequality in Labor Income

	% Contribution to inequality in labor income per worker	Gross contribution to inequality in labor income per worker1	Gross contribution to inequality in household per-capita income	% contribution to inequality in household labor income
TOTAL	100%	114	68	100%
Worker qualifications	**39%**	**44**	**30**	**45%**
Schooling	**30%**	34	26	**39%**
Experience	9%	10	4	6%
Labor-market imperfections	**26%**	**30**	**17**	**25%**
Discrimination	**5%**	5	0	**0%**
by gender	2%	2	-2	-3%
by race	3%	3	2	3%
Segmentation	**21%**	25	17	**25%**
Regional/spatial	7%	8	6	9%
Among states	3%	4	3	4%
Rural/urban	1%	1	1	2%
Among municipalities	3%	3	2	3%
By occupation	12%	14	9	13%
By sector of work	2%	3	2	3%
Other factors (unexplained residual)	**35%**	**40**	**21**	**30%**

Source: Barros et al (2004 b).
Notes: 1) Total exceeds 100% because of indirect effects resulting from interactions between variables.

3.9   Inequalities in the returns to labor that are due to differences in individuals' qualifications are not created but merely *revealed* by the labor market. They stem from differences among individuals that existed prior to entering the labor market, and account for 39% of labor-income inequality among individual workers, or 45% of inequality in household labor income. On the other hand, inequalities related to labor-market imperfections are *generated* by the labor market, and account for 26% of labor-income inequality among workers, or 25% of inequality in household labor income.

3.10   Inequality *revealed* by the labor market is largely driven by differences in education, which alone account for the single largest contribution (30%) to total inequality in labor incomes. Differences in experience add another 9%. These findings have important policy implications, indicating that education and labor qualification programs have the largest potential for improving income distribution. The links between educational inequities, poverty and inequality are summarized in Box IV-1 in the next chapter.

3.11   The dynamics of inequality *generated* by the labor market are more complex.

3.12   Discrimination: Despite the fact that income differences by gender or by race are significant among individuals, gender and race discrimination account for a modest portion of labor-income inequality among workers (5% of total inequality). Furthermore, the effects of these two forms of discrimination on labor-income inequality among individual workers are partially neutralized when the unit of analysis is the household.

3.13   Income differences by gender or race, which are important among individual workers, tend to disappear when the unit of analysis is the household.

Nevertheless, the effect of these two forms of discrimination on family income and on family-income inequality is different. In the case of gender, income differences are effectively neutralized in the household, but eliminating this source of inequality among individuals would end up increasing income inequality among families (hence the negative sign). This difference is because female worker participation is greater among those relatively better off than it is among the poor. By contrast, differences in labor income by race are reinforced at the household level, and eliminating this source of inequality would actually reduce income inequality, since black and indigenous families are overrepresented among the poor and white families are overrepresented among the better off. Since the two effects have similar magnitudes but act in opposite directions, the combined effect of gender and racial discrimination on family-income inequality is negligible. This is not an arithmetic result but the actual result of eliminating gender and racial differences in micro-simulations using data from the 2002 PNAD.

3.14 Segmentation: On the other hand, labor-market *segmentation* has an important effect since it accounts for 21% of labor-income inequality among individual workers and 25% of labor-income inequality among households. Among the various forms of labor-market segmentation, differences in returns to labor by occupation (mainly between informal and formal jobs) are the most important, accounting for 12% of differences in labor income among individual workers and about 13% of differences in labor income among households. Spatial/regional inequalities contribute another 7% to labor-income inequality among workers and about 9% to labor-income inequality among households. Differences between states and between municipalities contribute about 3% each and rural/urban differences account for only 1%.

D.   Summary and Conclusions

3.15 This chapter explored the two fundamental determinants of poverty, namely growth and income inequality, and concluded that the main determinant of both is *labor productivity*. Lagging and sluggish growth in labor productivity is the main factor that explains differences in per-capita income between Brazil and other countries, as well as the disappointing contribution of the labor market over the last decade to improving per-capita incomes in Brazil. Similarly, differences in labor productivity explain more than 60% of inequality in per-capita income. Thus, policies for reducing poverty and inequality must focus on the structural factors that determine the productivity of labor, worker qualifications, and the quality of jobs created.

3.16 Policy implications will be developed in the next chapter. Nevertheless, the analysis above provides a basis for four preliminary conclusions:

   a. *Improving the targeting and progressiveness of social transfers* is critical, not only for those programs' effectiveness in terms of alleviating poverty, but also for reducing inequality in the short run;

b. *Education and labor-force qualification programs* may well be the most powerful tools for promoting more equal opportunities and reducing poverty and inequality in the medium term;[28]

c. *Labor-market reforms* are important in order to reduce disincentives to formal labor and contain the expansion of informal labor, which goes hand-in-hand with lower quality of jobs and falling average incomes; and

d. *Policies and programs to reduce gender or racial discrimination* are important in their own right because of the value society gives to eliminating such social ills. Their impact and effectiveness as tools for reducing poverty or income inequality, however, depends on the degree to which they address the structural determinants of poverty and inequality, particularly the capacity of individuals and families to earn better incomes. This requires better articulating targeted compensatory programs with mainstream education and training programs as well as better job opportunities.

3.17 These topics, among others, will be expanded in the next chapter and cast in terms of a short- and medium-term agenda of policy options for reducing poverty and inequality in Brazil.

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[28] Even though education and worker qualification have the largest potential for equalizing opportunities and increasing social mobility, it is important to realize that for the potential to be realized, economic opportunities must exist. They are not created by education alone but result from economic and productivity growth. Both growth and human capital are required in order to reduce poverty and inequality. For a discussion on the potential and the limits of human capital policies, see Duryea and Pagés (2002).

IV. POLICIES FOR REDUCING POVERTY AND INEQUALITY IN BRAZIL

4.1 Previous chapters have identified the main characteristics of poverty and inequality in Brazil as well as their key determinants. This chapter focuses on what public policies can do to affect those determinants in order to achieve sustainable poverty/inequality reductions.

4.2 Given that the two fundamental determinants of poverty are growth and inequality, and that the previous analysis has emphasized the synergies between the two, the policy options presented here are those that are likely to have an impact on poverty either because they foster growth without increasing inequality, or because they can reduce inequality without compromising growth -- or because they do both simultaneously. Some of these policies can achieve results in the short term while others take more time to attain their impact. Therefore, it is important to put this policy discussion in perspective, to know both the impact expected from each policy and how long it would take to materialize.

A. Key Challenges and Policy Options

4.3 Despite the significant poverty reduction achieved over the last decade, Brazil faces difficult challenges to sustain or accelerate that progress in order to reduce poverty by one-half over the next decade, or to reach the government's stated objective of eliminating extreme poverty and hunger in a reasonable timeframe.

4.4 Simply put, the country needs to achieve higher rates of sustainable growth and at the same time reduce inequality so that the benefits from growth can reach the poor and the poverty reduction impact of growth can be increased. Unfortunately, it is no longer possible to replicate the old 1970s' pattern of rapid growth and poverty reduction, where aggressive public investments in infrastructure and expanding industrial employment substantially raised the real wages of unskilled workers, despite low educational levels and moderately high inflation levels. Moreover, the significant achievements of the mid-1990s, where poverty was substantially reduced as a result of taming inflation, are now exhausted.

4.5 The new emerging pattern of growth has some troubling features: i) the attainable rates of growth are relatively modest, given a host of macro- and microeconomic constraints limiting investment, employment generation and the efficiency of key markets;[29] ii) growth in the 1990s has been characterized as jobless growth because of its lower employment elasticity and the imperative to raise productivity levels in order to be globally competitive; iii) the quality of jobs generated has been decreasing, in part because of the sluggish expansion of formal employment and the much faster continuous expansion of informal

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[29] Among macroeconomic factors that limit investment and growth are a substantial debt burden, high real interest rates, sustained fiscal retrenchment, modest levels of investment, and a high tax burden. Among microeconomic factors limiting investment and the efficiency of key markets are: excessive red-tape, pending regulatory issues affecting the investment climate, and excessively rigid and onerous labor-market laws that create powerful disincentives to creation of formal employment.

employment; and iv) in the absence of inflation, the labor market has become more rigid, and good jobs are not only scarce but also demand increasingly higher education levels.

4.6   At the same time, there have been important achievements: fiscal responsibility and orthodox monetary management have kept inflation and currency crises at bay, and the economy is better prepared to deal with external shocks. In addition, devaluation of the *Real*, favorable external conditions, and competitive entrepreneurs have produced robust export-led growth and record trade surpluses that have buttressed external credibility, thus containing the levels of country risk. Stabilization has been largely consolidated and the economy is poised to shift gears toward higher growth rates, provided the pace of investment recovers swiftly and the specter of higher oil prices and higher international interest rates does not produce new large-scale external shock. Thus, the scenario over the next three to four years appears cautiously optimistic, with projected annual GDP growth between 4% and 5%.

4.7   In this context, it was shown that reducing poverty by half by 2015 would necessarily require a simultaneous improvement in income distribution (of 2 to 3% over the decade). Such a shift is within reach, but would require strong and decisive actions to improve the progressiveness of public transfers by limiting or reforming the most regressive programs while continuing to strengthen the targeting and effectiveness of the social safety net.

4.8   Furthermore, any short-term poverty reduction or improvement in income distribution needs to be sustainable. This will require a combination of short-term programs and medium- and long-term policies that can affect the structural determinants of poverty and income distribution identified earlier. Among these, two are critical and present difficult challenges: one is the economy's and job market's capacity to create more and better jobs; the other is catching up with the rest of the world in the workforce's level and quality of education. Both are medium- to long-term endeavors that require sustained and consistent policies and investments, but decisive actions and priorities need to be defined and implemented immediately.

4.9   Short-term priorities: The key policies/programs are those that can significantly affect growth or income distribution over the next three to five years. Given that the main cause of both slow income growth and inequality is low labor productivity, policies aimed at factors that determine labor productivity are important. These include:

    a.   *Improving labor-market regulations* and reducing disincentives to formal employment with the goal of countering the trend toward greater

segmentation with increasing participation of informal jobs and lower quality and lower productivity jobs;[30]

b. A focus on *effective training programs for the workforce* through incentives and innovative partnerships with industries and private businesses to emphasize on-the-job training as well as effective training programs and competency certification schemes that are well attuned to the requirements of a competitive labor market;

c. Recovering *investments in infrastructure* and new technologies to expand the economy's productive capacity, avoid bottlenecks that can slow growth or raise inflationary pressures, and enhance competitiveness and productivity;[31]

d. *Budget-neutral tax reforms* that focus on the structure and dispersion of indirect taxes could simultaneously improve efficiency and equity of taxation;[32]

e. Continuing to *strengthen the social safety net*, particularly targeted conditional cash transfers that can have a significant effect on poverty alleviation, improve the progressiveness of public transfers and income distribution in the short run, while emphasizing the importance of human capital investments for sustainable poverty reduction.

f. An aggressive policy of continued investments in *expanding access and quality of basic education* to reduce the large educational differences that are the main source of inequality of job market opportunities;

g. Better articulating *compensatory programs targeting vulnerable population groups* (blacks, children and adolescents, or the unemployed) with mainstream education and training policies that address the causes behind the

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[30] A recent study by the Inter-American Development Bank, "Good Jobs Wanted: Labor Markets in Latin America" (2004) shows that Brazil's labor market features the highest costs from severance pay and indemnities for dismissing formal workers, among all countries in Latin America. These costs represent large inefficiencies in the labor market.

[31] Given the tight fiscal constraints, currently and in the foreseeable future, investing more in infrastructure will require innovative financing mechanisms and a regulatory framework for public-private partnerships (PPPs) to develop profitable infrastructure projects, financed by private capitals.

[32] Recent studies (see Velez et al., 2003 and Afonso et al., 2003) have shown that the Brazilian tax burden (almost 35% of GDP) is among the region's highest. Furthermore, taxation is heavily dependent on a panoply of indirect taxes, which is not only inefficient -- creating high transaction costs and predatory competition for tax exemptions among states -- but also highly regressive. It is estimated that the indirect tax burden, three times greater than that of direct taxation, represents approximately 15% of the income of families in the poorest income quintile, compared to about 3% of the income of families in the top quintile. A less regressive and more efficient tax burden could be achieved by reducing taxation on items in the *cesta basica* (basic essential food and personal expenses for low-income families), while introducing more progressive tax rates for goods and services that figure more prominently in the budgets of higher-income families (i.e., housing and automobiles).

higher poverty levels and differences in economic opportunities that affect these groups.[33]

4.10   Medium- and long-term perspective: Reducing poverty and inequality permanently is a medium- to long-term endeavor. It requires altering the structural determinants of labor productivity consistently for two to three decades, until improvements achieved in the younger cohorts of the workforce are reflected in the stock of the workforce. Meanwhile, the economy needs to grow steadily in order to generate jobs and opportunities for a better-qualified workforce. In addition, these changes have to be achieved in a stable macroeconomic framework since major economic imbalances can rapidly sweep away real income gains, reversing decades of achievements in reducing poverty and inequality.[34]

4.11   The education challenge: Education may well be the most powerful policy tool for reducing poverty and inequality; however, realizing its full impact takes time and invokes additional challenges. The starting point is extremely unfavorable: despite significant improvements over the last decade, average years of schooling of Brazil's adult population (6.1 years) is just comparable to the average for LAC and much lower than that of OECD countries (12 years); also, inequality of education is higher in Brazil.

4.12   The graph below shows the educational attainment for the population above 25 years of age, by income decile and race. Data show that schooling of the poor is four years or less, while only the top 20% of the population reaches education levels comparable to OECD averages. It also shows that blacks have less years of schooling across all income levels.

4.13   Over the last decade, however, Brazil has made significant progress by universalizing access to primary education. But the country has not yet started to reduce the large gaps in completion and average schooling across socioeconomic groups. Schooling for the younger cohorts is substantially higher (an average of 8 years for ages 20 to 24, but only 5 years for the poorest quintile). Thus, the goal of achieving universal primary completion of new entrants to the labor market should be the highest priority over the next decade.

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[33] Differences in education level and in the quality of education explain most of the differences in poverty and income between blacks and whites. Hence, positive discrimination programs that do not address these structural determinants are unlikely to have a significant and permanent impact on poverty or inequality.

[34] Examples of the magnitude of the impact of macroeconomic shocks includethat previous episodes of hyper-inflation in Brazil or the 2002 currency crisis in Argentina produced sharp increases in poverty (between 10 and 20 percentage points) and drastic increases in inequality (between 5% to 7% deterioration in the Gini coefficient). This order of magnitude is the same as the targets for poverty and inequality reduction over one or two decades.

Graph IV-1

Educational Attainment by Income Decile and Race

Source: PNAD 2002.
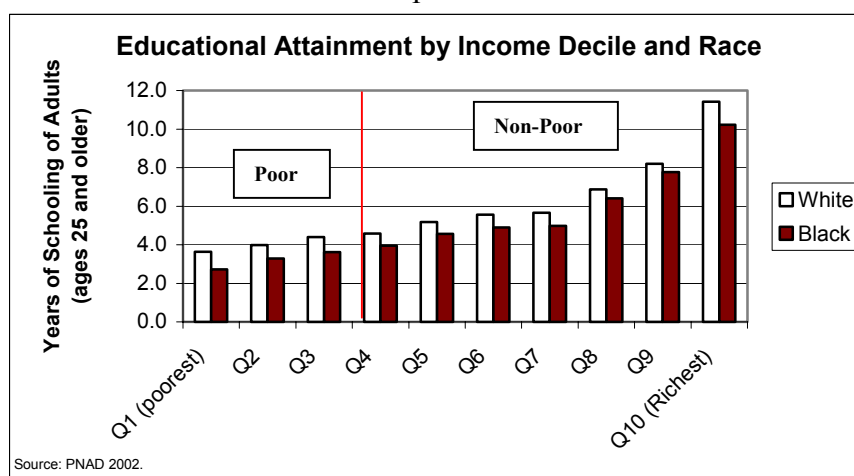
4.14   The link between higher education levels and higher incomes is affected by the dynamics of returns to education. Given the comparatively low education levels and the particularly high inequality of educational opportunities, two adverse facts must be confronted. First, Brazil's wage differentials by skill are larger than in other countries (a result of the relative scarcity of workers with high education levels). This gap magnifies the effect of educational differences on income differentials. Furthermore, these differentials are unlikely to be reduced rapidly since they result from the interplay of supply and demand for workers with higher education levels. As supply of higher education increases, the wage differential tends to decrease, but at the same time, the demand for higher education is permanently shifting towards higher education levels (due to technological progress and global competitiveness), which tends to increase the premium. Indeed, it has been proven that as educational expansion occurs, wage differentials will first increase before they eventually decline, when the heterogeneity of education of the whole workforce is reduced.[35]

4.15   This process may take more than thirty years to be completed (see Box IV-1). The school system acts on new cohorts entering the workforce, but there is a large stock of adult workers (54% of household heads) who barely completed four years of education or less. The pace of the demographic process determines that it would take approximately twenty years for gains in education to extend to the majority of the workforce. While these timeframes are discouraging, no way out of this dilemma exists other than continuing to pursue educational progress, while emphasizing quality and equity, and maintaining the course and emphasis as long as it is necessary. In absence of this sustained educational drive, other policies to reduce poverty or inequality are unlikely to yield permanent results.

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[35] For an excellent analysis on the dynamics and determinants of the wage skill premium, see Velez, C.E and Bloom, A. (2002).

BOX IV-1: Education and the Intergenerational Transmission of Poverty

The Problem: Differences in education are structural determinants of poverty and inequality. Basic education indicators in Brazil are below the average for the region and clearly behind OECD levels. Furthermore, differences in education by income quintile and by race are particularly severe in Brazil.

Basic Education Indicators (Population ages 25 and older)	Brazil (2002)		LAC Average (2000)	OECD Average (2000)
	Bottom 20%	Average		
Years of schooling	3.3	6.1	6.0	12.5
Completed primary education	10%	50%	70%	99%
Completed secondary	1%	14%	22%	70%

Sources: PNAD 2002 for Brazil. Duryea and Pages (2002) and Behrman et al (2001), for LAC and OECD.

Besides lagging behind other countries in average education levels of the workforce, Brazil shows the largest differences in education between rich and poor (over 6 years of schooling separate the top 20% from the bottom 20% of the population). The chances of a person from the poorest quintile completing elementary school are only 10% and a slim 1% for completing secondary education. In addition, Brazil boasts the highest degree of maintaining intergenerational transmission of those differences in education (68% of differences in the schooling of one generation are transmitted to the next, as opposed to 50% for LAC and only 22% in the USA).

Effects on poverty and inequality: Larger differences in education between rich and poor have a particularly significant impact on income inequality and poverty, because they are compounded by high returns to education, particularly to secondary (15% higher wages for each additional year of schooling) and higher education (22% higher wages per year of schooling). Furthermore, there is evidence that access to formal jobs and higher-paying jobs is increasingly requiring a minimum of completion of secondary school. Thus, education gaps interact with labor- market segmentation, limiting the access of poor to better jobs. Lower qualifications and reduced access to better jobs in turn determine lower incomes and higher poverty and jointly explain about 50% of the country's per-capita income inequality.

The challenge for educational policies: It is clear that sustainable reduction of poverty and inequality in Brazil requires a decisive and ongoing commitment to improve the quality and equity of education opportunities available to the poor. This challenge is a medium- to long-term endeavor since it takes time for increases in the schooling of younger cohorts to be reflected in the stock of the workforce, and improving quality in education is a complex task.

Over the last decade, Brazil has achieved important progress in overall access to and completion of primary education, and as a result, average schooling of the workforce increased by almost two years (from 4.3 to 6.1 years). Progress was particularly noticeable among younger cohorts (the direct beneficiaries of recent educational policies and investments). Enrollment for ages 7-14 is now practically universal and average years of schooling for the population between 20 and 25 years of age reached 8.1 years in 2002. However, educational gaps in completion and attainment across income or racial groups did not significantly improve. The gap in years of schooling between the bottom 40% and the top 20% of the population increased from 5 to 6 years. The same gap between blacks and whites increased slightly from 1.9 to 2.1 years.

Education policies need to focus on improving quality and results, particularly among the disadvantaged population groups, with the goal of achieving universal primary completion over the next decade, in line with the Millennium Development Goals. While this is an ambitious goal, it is not impossible considering that access is now universal and that the foreseen expansion of targeted cash transfers conditional on school attendance is projected to reach all poor families over the next three to four years. Thus, the supply of schools is ensured and the economic constraints on the demand for education will be solved. The main challenge is improving quality, which is not easy and requires intervention at various levels: it requires increasing resources for school quality inputs (better-trained teachers, books and access to new technologies); making schools and teachers accountable for results; supporting families to strengthen the demand for education and monitoring attendance and school performance to ensure that children stay at school and are promoted. These goals could be achieved over the next 10 years. The next step -- and a critical one for breaking the poverty cycle -- is achieving universal secondary schooling. This goal could take an additional generation.[36]

Duryea and Pages (2002) estimated that achieving universal secondary education could reduce poverty in Brazil by close to 60% (from the current 33% to approximately 13%). This higher education level, however, would require between three and four decades of consistent education policies and investments in design and implementation of effective programs focused on improving the quality and equity of basic education.

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[36] Transition matrixes describing educational mobility in Brazil confirm that the expected educational attainment of children of parents with 4 years of education is 8 years of education, and 12 years of education for children whose parents completed 8 years of schooling.

4.16   Employment and the quality of jobs: It is well recognized that public policies cannot directly generate productive employment. Their main role is to ensure a stable macroeconomic environment and a framework of rules and incentives conducive to private investment and growth, which in turn generate the jobs.

4.17   Nevertheless, evidence for most Latin American countries from the 1990s points to a pattern of jobless growth,[37] characterized by little expansion of employment in competitive sectors and continuous expansion of informal and lower-quality jobs. This negative trend is related not only to labor-market regulations and institutions in Latin America, which are slow and difficult to reform, but also to the fact that worker productivity in many sectors is lower than required in order to be globally competitive. As previously discussed, this limitation is related to both lower worker qualifications and lower quality of job posts, with the productivity of the job posts lagging behind as a result of excessive red tape, infrastructure bottlenecks, and insufficient investment in new technologies.

4.18   It may not be realistic to expect a new boom in quality employment generation, even if growth picks up, until some of those critical constraints to productivity growth are resolved. Moreover, there is no reason to expect that the poor will be in a position to automatically benefit from the more-productive and better-paying jobs. Indeed, one of the perverse features of the Brazilian labor market is segmentation of occupations and jobs, which compounds the effects of differences in education levels, since a clear correlation exists between education and access to formal and higher-productivity jobs. Only those who have completed secondary or higher education (20% of the population) can aspire to the better jobs, whereas the majority of the population (60% with primary education or less) is likely to be stuck with informal jobs, or low productivity and low-paying unskilled employment opportunities such as jobs in agriculture, construction, domestic service or personal services.

4.19   There is also evidence that gender and racial discrimination are correlated with the quality of available employment opportunities.

4.20   In the case of race, significant differences in education explain most of the differences in access to jobs and income differentials between blacks or indigenous Brazilians and whites. While the gap in schooling attainment is about two years, differences in school completion are even larger: while two out of three whites complete primary education, less than 50% of blacks complete the same level.[38] The gap for secondary school completion is even larger (20% for blacks as to compared to 42% for whites).

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[37] See the IPES report "Good Jobs Wanted: Labor Markets in Latin America" the Inter-American Development Bank, Washington, DC, 2003.

[38] Notice that the gap in primary education completion by race (55% for whites vs. 35% for blacks) is clearly correlated with differences in the poverty incidence by race (45% for blacks and indigenous and 22% for whites).

4.21 In the case of gender, women have been able to overcome the main factor limiting their access to better jobs. They are now better educated than their male counterparts and have gained access to comparable jobs. Nevertheless, there a wage gap exists of approximately 30% compared with males of similar education and in the same occupations.

B. Government Strategy and Implications for the Bank

4.22 The Brazilian government is clearly aware of the challenges and constraints in achieving faster reductions in poverty and inequality. Over the last two years, economic policies have emphasized consolidating stabilization, averting a currency crisis and setting the stage for sustainable growth, which have largely been achieved.

4.23 The current policy debate revolves around what to do in order to shift gears and accelerate the resumption of growth without jeopardizing macroeconomic stability. The main issues are: i) how to achieve lower interest rates to foster investment *without creating inflationary pressures*; ii) how to reconcile the need for primary fiscal surpluses with the need to finance critical investments in infrastructure *without further increasing the tax burden*; iii) how to establish strategic *priorities for investing scarce public resources*, striking a balance between productive infrastructure and social programs; and iv) how to *increase the efficiency, effectiveness and progressiveness of social spending* in order to achieve better results for the sizeable resources invested.

4.24 Social policy: In the context of limited fiscal space for increasing social spending, social policy faces difficult choices. Social and political pressures and expectations probably exceed what can be achieved in the next few years. Thus, every effort must be made to establish priorities, monitor and evaluate the efficiency and effectiveness of existing programs, rationalize and improve coordination among overlapping programs from the various government levels; and reform particularly regressive programs and strengthen those adequately targeting the poor. Some of these issues involve difficult political choices and complex institutional challenges.

4.25 Key areas to focus on are:

a. *Improving the progressiveness of public transfers:* Brazil has a comprehensive array of social programs and spends significant resources on social programs. Social spending by the federal government is about $70 billion a year, or 20% of the country's GDP.[39] However, approximately half of that is accounted for by the highly regressive public-pension system. The other half of social spending is moderately progressive, with some programs such as basic education and targeted cash transfers among the most

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[39] See Lisboa, M.: "*Gastos Sociais do Governo Central*" (2004).

progressive and other more regressive programs such as subsidies targeting formal workers or higher education.[40] The government has already taken the initiative to reform the public-pension system and the approved reform is a first step toward limiting the benefits of the most regressive program supported by public funds, while helping contain the large fiscal deficits generated by the system. Hence, the focus should be on strengthening and consolidating transfers targeting the poorest and most vulnerable groups. If these programs could be perfectly targeted, they could be an effective way to eliminate poverty and improve income distribution in the short run.[41]

b. *Improving integration and coordination among programs:* One of the main sources of inefficiency in social programs is the overlap of similar programs by the three levels of government. Recently, the *Bolsa Familia* program has unified various federal cash-transfer programs run by different ministries, particularly those targeting poor families with school-age children. This process requires continued efforts to integrate similar programs from different government levels, to consolidate a unified register of the targeted population and to strengthen local capacity for the selection of beneficiaries as well as for the monitoring of conditionalities, which are an important component of these programs.

c. *Strengthening monitoring and evaluation of social programs*: Despite the sizeable amount of resources devoted to social programs, Brazil has not yet developed a system for monitoring and evaluating the effectiveness and impact of social programs. Much needs to be done in this area, which is a prime candidate for technical assistance and support from multilateral financial institutions.

d. *Developing a medium-term framework for investments in basic education:* Last but not least, Brazil has to develop a medium-term framework to ensure adequate financing of basic education -- from pre-school to secondary education. The government is discussing the extension of the per-capita financing mechanism already in place for primary education (FUNDEF) to all basic education (FUNDEB). This is an opportunity that should not be missed for defining a medium-term national policy with the explicit goal of ensuring that all Brazilians complete a minimum of eight years of primary education and a longer-term goal that all Brazilians complete secondary education. These goals will require earmarking significant resources and sustaining consistent policies beyond changes of government -- but it is a "*sine qua non*" for achieving permanent reductions in poverty and inequality over the next two decades.

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[40] For an analysis of the distributive impact of public social expenditures, see World Bank (2003), pp. 29-34.

[41] As mentioned in Chapter 1, it would suffice to channel 1% of GDP, or $3.5 billion, per year to the poor to eliminate poverty. This figure is comparable to the total annual amount projected for the federal government's targeted cash-transfer programs.

Implications for the Bank:

4.26   It is clear that the Brazilian government agenda for reducing poverty and inequality must strike a balance between critical investments to accelerate growth and ensuring adequate resources for an effective social policy. The government has already taken the initiative to pursue several of the critical issues mentioned in the previous section.

4.27   The role for the Bank should be to provide flexible support to those initiatives, while clearly prioritizing its overarching development objectives: growth and poverty reduction. Some strategic areas that merit decisive Bank support are:

   a.   *Investments for accelerating growth:* Prioritizing those investments that can generate returns in terms of accelerated growth in the short run (e.g., infrastructure and improvements in the regulatory framework for Public Private Partnerships, or PPPs).

   b.   *Investments in urban areas with a social focus*: Three out of four poor families live in urban areas, and a sizeable proportion of the urban poor as well as of the GDP are concentrated in large metropolitan areas. Therefore, continued investments in urban infrastructure and in urban development and sanitation (which account for two-thirds of the Bank social portfolio) are strategic both for alleviating poverty and for improving social conditions, as well as for enhancing productivity and economic opportunities in Brazilian cities.

   c.   *Strengthening the social safety net:* Supporting the unification and modernization of social transfers, with an emphasis on improving the targeting and effectiveness of cash transfers to the poorest families, as the main policy tool to achieve poverty alleviation and to reduce inequality in the short run. Since the volume of resources needed for these programs is much larger than the Bank's financial contribution, the value added of IDB participation would be measured in terms of technical assistance to develop regulatory and evaluation capabilities at the federal and state levels and strengthen institutional capacity for effective program monitoring and delivery at the municipal level.

   d.   *Supporting the development of a medium-term education policy agenda*, with an emphasis on ensuring equitable access to quality education for all Brazilians, from pre-school to complete secondary education. Complemented by effective technical and professional education for young adults and effective training and certification schemes for the workforce, in partnership with the private sector.

   e.   *Social inclusion and targeted compensatory programs:* The Bank is sensitive to the demands for targeted social inclusion programs, particularly those oriented to vulnerable groups (at-risk children and adolescents) or to racial or

ethnic groups. These programs play an important role in developing an agenda of inclusive social policies and can effectively contribute to ensuring that the benefits of other social programs reach marginalized groups. Nevertheless, efforts must be made to ensure that these programs develop better articulation with mainstream universal social programs -- particularly education and training programs -- to address the structural determinants behind the higher poverty and vulnerability indices affecting these groups. Otherwise, the effectiveness of those programs in reducing poverty or inequality and the sustainability of their benefits may be compromised.

f. *Labor markets and productivity*: Given the critical importance of the labor market in the determination of income, poverty, and inequality, the Bank should actively support the study and policy discussion of issues that may be limiting the capacity of employment to respond to growth resumption or constraining productivity growth. IDB experience and knowledge in this area could be more proactively shared to support policy dialogue and the exchange of ideas and good practices with Brazilian authorities and civil society.

4.28 A broader discussion of strategic areas for Bank support is beyond the scope of this paper and can be found in the Brazil Country Strategy,[42] which identifies three broad objectives for IDB action in Brazil: i) accelerating growth and improving the economic competitiveness; ii) reducing poverty and inequality; and iii) supporting the modernization of public-sector institutions. The themes highlighted in this report are only a subset of the topics discussed in the Country Strategy, namely those that have a more direct link to the determinants of poverty and inequality identified here. Support for policies and programs that address these determinants will contribute to maximizing the impact of the Bank's actions in terms of reducing Brazil's poverty and inequality.

4.29 Identifying strategic priorities for poverty and inequality reduction, however, is only the starting point for developing and implementing effective policies and programs in each of these areas. Further sector and economic studies are required, as well as project-specific analytical work. The next section presents a selection of key topics for further research and policy-oriented analysis.

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[42] See Brazil Country Strategy, the Inter-American Development Bank, 2004b.

C. Topics for Further Research

4.30   The focus of this paper has been on the links between poverty, inequality and growth, and on identifying some of the main causes and determinants of Brazil's persistent poverty and inequality, in the hope of helping spell out some of the key challenges for the design of public policies, particularly social policies, aimed at reducing poverty and inequality. Choices were made in selecting topics for analysis as well as in the approach and methodological tools for the analysis.[43] Consequently, several important areas for research and policy-oriented analytical work were merely hinted at or not addressed in the paper. Other important topics, such as a detailed analysis of social expenditures and the distributive incidence of taxation, were not developed because they have been the subject of other recent studies. However, their main conclusions were incorporated in the analysis.

4.31   Topics for further research can be broadly classified in three groups: i) country economic work focused on determinants and constraints to faster growth in Brazil, one of the key factors for reducing poverty; ii) further research to better understand the dynamics of poverty, inequality and social exclusion; and iii) specific sector work focused on the design of cost-effective social policies and specific project work for translating those policies into viable projects. The following selection of topics is by no means comprehensive and intends only to highlight some of the main areas in which the study may have raised more questions than provided definitive answers.

4.32   <u>The determinants and constraints to more rapid economic growth</u>: Some key areas for further applied research are: i) further analysis of the determinants of growth[44] and of the macro- and microeconomic constraints to higher investment and growth, including key topics such as the tax burden, interest rates, and the policy and regulatory framework for private investment; ii) analytic work to support the design of an equitable and efficient tax reform -- to improve the revenue base without further increasing the tax burden – and simulations of the redistributive impact of the various reform options; iii) the links between monetary policy and fiscal sustainability issues, including the links between high interest rates, the debt burden and primary fiscal surpluses; and iv) institutional and regulatory issues affecting the climate for private investment.

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[43] The paper emphasized the causes and consequences of inequality over a fuller discussion of the determinants of growth because the latter have been the subject of previous economic work and well-established consensus in the economic development literature, while the discussion of inequality and public-policy role in reducing it is relatively newer but particularly relevant for Latin-America (after two decades of economic reforms with only modest results in terms of poverty and inequality reduction).

[44] Including other methodologies for analyzing the components of growth. See for instance Blyde and Fernández-Arias (2004), which uses "labor productivity", "capital productivity" and "total factor productivity" to disaggregate the components of growth.

4.33   The dynamics of poverty, inequality and social exclusion: Further empirical work on understanding the dynamic interactions between discrimination, education, labor-market imperfections and inequality of opportunities and poverty is needed. Further studies on these topics are needed, not only because of the relevance of the issues but also because of their importance for improving the design and implementation of education and other social policies for social inclusion. In particular, more analytical work on: i) labor-market imperfections and key issues for labor-market reform; ii) longitudinal analysis to better understand the dynamics of poverty and social mobility, distinguish between transient and long-term poverty and their determinants; and iii) studies of the various dimensions of social exclusion and their links to inequality of opportunities in education and in the labor market.

4.34   The Social policy agenda: In light of the government's emphasis and commitment to strengthen the social-policy agenda, it is necessary to conduct further analytical work on several important policy and operational issues for the design, financing and implementation of more effective social policies:

Policy and financing issues: i) financing and sustainability issues for the foreseen expansion of targeted safety net programs; ii) financing scenarios for a medium-term commitment to achieve quality universal basic education; iii) the determinants of inequalities in educational opportunities; iv) the design of effective policies and programs for improving the quality of education; v) the scope and limits of conditional cash transfers in improving educational outcomes; and vi) studies for the design of a unified social-assistance policy (SUAS): coordination, integration and rationalization of programs.

Project-level issues: i) How to improve the targeting and progressiveness of social transfers in practice: lessons from the implementation of targeted cash transfers; ii) monitoring and evaluation of social programs: operational issues, improving instruments and strengthening control at the local level; iii) best practices in effective training and skill-certification programs for the workforce; iv) effective schools, particularly best practices in improving educational performance of students from vulnerable socioeconomic backgrounds; and v) instruments and mechanisms for strengthening inter-sector coordination in the execution of multi-sector social programs at the municipal level.

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ANNEX TABLES

Table A1: Changes in the Poverty Profile 1981 – 2002

Tables A2: Poverty Predictors: logit regression, poverty estimates and dissimilarity indexes.

Table A3: Determinants of differences in per-capita incomes between Brazil and selected countries.

Table A1: Changes in the Poverty Profile (1981-2002)

A. Household Characteristics	Poverty Incidence of Group				Share of Population (%)				Share of Total Poverty (%)			
	1981	1992	1996	2002	1981	1992	1996	2002	1981	1992	1996	2002
Region of Residence												
Center-West	35.7	28.2	26.4	23.5	6.6	6.9	6.9	7.1	5.9	5.8	5.5	5.1
Northeast	66.8	56.9	59.1	56.5	30.0	26.0	28.8	28.6	50.2	44.2	51.0	49.2
North	38.4	44.8	43.9	45.2	2.7	4.0	4.8	5.9	2.6	5.4	6.3	8.1
Southeast	24.9	22.4	19.6	21.0	44.5	46.4	43.9	43.2	27.7	31.1	25.8	27.6
South	33.6	26.8	24.6	21.8	16.2	16.7	15.5	15.1	13.6	13.4	11.4	10.0
Urban/Rural Area												
Rural	64.7	55.1	57.8	55.5	29.1	19.5	20.4	15.9	47.2	32.3	35.3	26.9
Urban	29.8	28.1	27.1	28.6	70.9	80.5	79.6	84.1	52.8	67.7	64.7	73.1
Demographic vulnerability												
Children (0 to 6 years)												
Yes	51.7	50.0	46.8	49.6	59.4	40.7	45.7	42.1	76.8	60.9	64.2	63.4
No	22.8	22.0	22.0	20.8	40.6	59.3	54.3	58.0	23.2	39.1	35.8	36.6
Elderly (65 years or older)												
Yes	32.3	18.3	23.2	17.1	13.6	16.8	15.5	16.2	11.0	9.2	10.8	8.4
No	41.2	36.4	35.2	35.9	86.4	83.2	84.5	83.8	89.0	90.8	89.2	91.6
Head of Household characteristics					100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Male	40.2	34.3	33.6	33.3	88.7	80.5	82.3	78.2	89.1	82.7	83.0	79.1
Female	38.3	29.7	32.3	31.5	11.3	19.5	17.7	21.8	10.9	17.3	17.2	20.9
Race of household head					n.a.	100.0	100.0	100.0	n.a.	100.0	100.0	100.0
White or Yellow	n.a.	23.2	21.9	21.9	n.a.	57.1	54.8	52.3	n.a.	39.7	36.0	34.8
Black or Indigenous	n.a.	46.9	47.3	44.9	n.a.	42.9	45.2	47.7	n.a.	60.3	64.1	65.2
Literacy of household head					100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Literate	29.5	27.8	26.3	27.7	71.1	79.1	79.9	82.8	52.6	66.0	63.0	69.8
Illiterate	65.7	54.3	61.4	57.7	28.9	20.9	20.1	17.2	47.4	34.0	37.0	30.2
Education (Years of Schooling)					100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 4	55.3	47.9	51.5	50.0	56.2	43.2	41.9	35.6	79.1	62.0	64.6	54.2
4	26.9	30.3	28.0	31.3	23.0	20.6	20.0	18.0	15.7	18.7	16.8	17.1
5 to 7	20.2	34.3	31.0	38.0	4.7	9.1	10.4	12.4	2.4	9.4	9.7	14.3
8	14.2	22.1	18.9	24.7	4.6	7.5	8.4	8.9	1.7	4.9	4.8	6.7
9 to 11	6.6	12.1	10.2	14.0	5.7	12.3	12.6	17.0	0.9	4.5	3.8	7.2
12 or more	1.2	2.6	1.7	1.6	4.5	7.3	6.7	8.0	0.1	0.6	0.3	0.4
Age of Household head					100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
24 or younger	38.3	44.0	44.4	47.6	3.9	5.9	4.0	4.0	3.8	7.7	5.3	4.0
25-34	41.1	40.1	38.7	43.3	22.3	24.0	20.4	19.6	22.9	28.9	23.7	19.6
35-64	40.5	33.2	32.9	31.9	65.4	57.0	64.5	64.6	66.3	56.7	63.7	64.6
65 and older	33.4	17.2	22.2	16.1	8.4	13.1	11.0	11.7	7.0	6.7	7.3	5.7
Labor Market Status					100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Unemployed	77.3	72.3	68.7	68.1	1.6	2.6	2.8	3.6	3.1	5.6	5.8	3.6
Not looking for work	34.0	24.0	29.9	26.0	15.4	18.0	17.8	19.0	13.1	12.9	15.9	19.0
Employed	40.3	34.2	32.9	32.9	82.9	79.4	79.4	77.4	83.7	81.5	78.3	77.6
Formal Sector	26.8	26.2	23.9	25.0	38.4	31.4	29.8	30.1	25.5	24.0	21.7	22.8
Informal Sector	67.0	57.2	51.2	52.7	17.7	16.1	16.9	18.0	29.5	26.8	26.3	28.8
Public Sector	15.8	20.0	18.7	16.9	3.0	12.0	10.9	10.6	1.2	7.0	6.2	5.5
Self-employed	48.8	41.2	38.9	39.5	35.0	31.0	33.6	33.2	42.3	37.3	39.7	38.4
Employer	10.4	8.8	6.9	6.6	5.9	6.5	5.8	6.5	1.5	1.7	1.2	1.3
Unpaid worker	18.0	36.1	53.4	37.6	0.1	2.9	3.0	2.8	0.0	3.1	4.9	3.2
					99.9	97.1	97.0	97.2	100.0	100.0	100.0	100.0

Source: IPEA, based on PNADs.

Table A1 (continued): Changes in the Poverty Profile (1981-2002)

B. Individual Characteristics	Poverty Incidence of Group				Share of Population (%)				Share of Total Poverty (%)			
	1981	1992	1996	2002	1981	1992	1996	2002	1981	1992	1996	2002
Gender												
Male	39.7	40.9	33.3	33.1	49.8	49.2	48.9	48.8	49.5	49.3	48.9	49.1
Female	40.2	40.7	33.4	32.7	50.2	50.8	51.1	51.2	50.5	50.7	51.1	50.9
Race									100.0	100.0	100.0	100.0
White or Yellow	n.a.	28.8	22.2	22.2	n.a.	54.8	55.9	53.6	n.a.	38.7	37.2	36.2
Black or Indigenous	n.a.	55.3	47.5	45.2	n.a.	45.2	44.1	46.4	n.a.	61.3	62.8	63.8
Literacy									n.a.	100.0	100.0	100.0
Literate	22.1	26.3	20.3	20.7	71.9	79.7	82.2	85.0	51.0	66.1	66.0	73.0
Illiterate	54.5	53.0	48.2	43.3	28.1	20.3	17.8	15.0	49.0	33.9	34.0	27.0
Education (Years of Schooling)									100.0	100.0	100.0	100.0
Less than 4	46.4	46.6	41.1	38.2	52.1	41.7	37.4	31.9	78.5	61.3	60.8	50.5
4	21.1	29.2	23.3	24.4	23.4	20.8	19.5	17.0	16.1	19.2	18.0	17.2
5to7	15.4	32.5	25.1	30.9	5.0	8.9	10.5	12.1	2.5	9.1	10.4	15.5
8	9.4	20.3	15.0	19.0	5.2	7.5	8.9	9.1	1.6	4.8	5.3	7.2
9 to 11	4.6	11.8	8.3	10.9	7.7	13.5	15.4	20.1	1.2	5.0	5.1	9.1
12 or more	1.0	2.4	1.4	1.2	5.5	7.6	8.2	9.9	0.2	0.6	0.4	0.5
Age									100.0	100.0	100.0	100.0
0-6 years of age	53.7	56.5	48.7	51.6	18.6	15.2	13.6	12.6	25.0	21.1	19.9	19.8
7-14	52.8	52.8	45.3	47.4	19.4	18.7	17.8	15.5	25.6	24.2	24.1	22.3
15-17	40.2	44.3	36.7	38.7	7.0	6.2	6.7	6.0	7.0	6.7	7.3	7.1
18-24	29.5	36.1	29.9	30.3	13.2	12.6	12.5	13.4	9.7	11.1	11.2	12.3
25-65	31.8	33.6	26.6	26.1	37.6	42.1	43.6	46.1	29.9	34.6	34.8	36.6
65 and older	25.9	17.0	15.0	9.4	4.3	5.2	5.8	6.4	2.8	2.2	2.6	1.8
Labor Market Status									100.0	100.0	100.0	100.0
Unemployed	46.4	51.1	44.2	43.7	2.3	4.1	4.2	5.7	3.0	5.8	6.2	8.6
Not looking for work	37.9	37.6	32.7	32.4	47.3	39.0	41.2	38.9	51.4	40.3	45.4	43.8
Employed	31.5	34.4	26.3	24.7	50.5	56.9	54.7	55.4	45.6	53.9	48.4	47.6
									100.0	100.0	100.0	100.0

Source: IPEA, based on PNADs.

Tables A2: Logit regression of the probability of being poor (1)

	Probability of being Poor			Probability of being Extremely Poor		
	Coefficient	P-value (x100)	Estimated Mean Value	Coeficiente	P-valor (x100)	Estimated Mean Value
Intercept	0.59	0		-0.78	0	
Individual Characteristics						
Age Group						
0 a 17			0.44	-	-	0.20
18 a 64	-0.94	0	0.28	-0.86	0	0.11
65 e mais	-2.69	0	0.08	-3.26	0	0.01
Household Characteristics						
Race of Household Head						
White	-0.52	0	0.28	-0.43	0	0.11
Black			0.36	-	-	0.15
Sex of Household Head						
Male	0.10	0	0.32	0.22	0	0.13
Female			0.31	-	-	0.12
Years of Schooling of Household Head						
0 to 4			0.38	-	-	0.15
5 to 8	-0.24	0	0.34	-0.18	0	0.13
9 and above	-1.61	0	0.14	-1.36	0	0.05
Labor Market Status of Household Head						
Unemployed or out of the labor force			0.35	-	-	0.18
Informal worker	0.02	0	0.35	-0.26	0	0.15
Formal worker	-0.56	0	0.26	-1.41	0	0.06
Region of Residence						
Southeast/ South/ Center-West			0.25	-	-	0.08
Northeast	1.23	0	0.47	1.24	0	0.21
Urban vs. Rural Area						
Rural			0.39	-	-	0.17
Urban	-0.50	0	0.30	-0.49	0	0.12

Source : IPEA, based on Pesquisa Nacional por Amostra de Domicílios - PNAD 2002.

(1) The dependent variable is the "odds ratio" which expresses the ratio between the probability of being poor / the probability of not being poor, dependent on a set of household and individual characteristics.

Table A2: Regression Estimates of Poverty and Extreme Poverty

(%)

	Poverty Incidence (%)		Extreme Poverty Incidence (%)		Percentage of Population
	Uncontrolled	Controlled[1]	Uncontrolled	Controlled[1]	
National Average	**32.1**	**32.1**	**13.0**	**13.0**	100.0
Individual Characteristics					
Age Group					
0 to 17	46.6	44.4	20.9	19.7	33.7
18 to 64	26.4	27.9	9.8	10.6	59.7
65 and above	9.0	8.1	1.6	1.2	6.6
Household Characteristics					
Race of Household Head					
White	21.5	27.7	7.6	10.7	53.9
Black	44.5	36.3	19.4	14.7	46.1
Sex of Household Head					
Male	32.6	32.4	13.3	13.5	78.5
Female	30.4	30.9	12.0	11.5	21.5
Years of Schooling of Household Head					
0 to 4	43.0	38.1	18.7	14.9	53.8
5 to 8	31.3	33.8	10.9	13.1	21.2
9 or more	9.4	14.2	2.7	5.0	25.0
Labor Market Status of Household Head					
Unemployed / Out of the Labor Force	31.8	34.9	15.1	18.0	22.7
Informal Worker / Self-employed	43.2	35.3	19.8	15.0	40.6
Formal Worker / Public Sector / Employer	20.0	25.9	4.3	6.1	36.7
Region of Residence					
Southeast/ South/ Center-West	21.4	24.8	6.6	8.0	69.6
Northeast	56.4	47.0	27.7	20.7	30.4
Urban / Rural Residence					
Rural	55.3	39.0	27.4	16.6	16.7
Urban	27.4	30.5	10.2	11.8	83.3

Source : IPEA calculations based on PNAD 2002.

(1) Controlled Estimates indicate the predicted probability of being poor (extremely poor) if all the population differed only in the characteristic being analyzed but differences in other characteristics were neutralized.

Tables A2: Dissimilarity Indexes[1]

	Poverty Predictors		Extreme Poverty Predictors	
	uncontrolled	controlled	uncontrolled	controlled
Individual Characteristics				
Age group	15.2	12.8	20.5	17.1
Household Characteristics				
Race of HH	17.8	6.7	22.6	7.8
Gender of HH	1.2	0.8	1.7	2.5
Schooling of HH	18.2	13.6	23.4	14.6
Labor market status of HH	14.1	6.7	24.7	18.7
Ocupation of HH	18.0	7.6	31.1	20.7
Region	23.1	15.0	34.3	22.6
Urban/Rural	12.1	3.7	18.4	5.3

Source : IPEA based on - PNAD 2002.

(1). The dissimilarity Index expresses the minimum percentage of population that would need to be realocated among groups for each category so that each group would have exactly the same incidence of poverty (or extreme poverty).

Table A3: Determinants of differences in per-capita Income between Brazil and selected countries (circa 2001)

(%)

Determinants of differences in per-capita Income	Brazil	OECD		Mexico		Argentina		Uruguay		Chile	
	Indicator value	Indicator value	Contribution (%)	Indicator value	Contribution (%)	Indicator value	Contribution (%)	Indicator value	Contribution (%)	Indicator value	Contribution (%)
Mean per-capita Income (2)	7.0	22.0		8.3		12.3		8.9		8.7	
Demography (% of adults)	0.66	0.66	1	0.62	-30	0.62	-9	0.63	-20	0.64	-8
Non-labor income per adult (2)	-	-	-	-	-	-	-	-	-	-	-
Income from Assets	-	-	-	-	-	-	-	-	-	-	-
Income from Transfers	-	-	-	-	-	-	-	-	-	-	-
Labor Income per Adult (2)	10.7	33.2	99	13.3	130	19.7	109	14.2	120	13.4	108
Availability of Jobs (employment rate)	0.71	0.73	3	0.65	-49	0.64	-18	0.73	13	0.63	-58
Labor Productivity (labor income per worker)	15.1	45.4	96	20.3	179	30.5	126	19.4	107	21.3	166
Quality of the Workforce index (3)	1.00	1.62	42	1.28	149	1.47	70	1.33	121	1.33	137
Quality of the job posts	15.1	28.0	54	15.9	31	20.7	57	14.6	-14	16.1	29

Source: Barros, Carvalho, Franco and Mendonça (2004)

Notes
1. Based on data from World Development Indicators (WDI) 2001 and Human Development Report (HDR) 2001.
2. Incomes expressed in thousands of US$ PPP
3. The quality of the workforce index is as a multiple of the average years of schooling of the workforce in Brazil in 2002 (defined as the basis for the Index).
4. The quality of the job posts is defined as the quotient labor productivity / workforce qualification index