

Poverty and Inequality in Brazil

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Abstract

As a result of data discrepancies, it can be difficult to reach conclusions about the magnitude of poverty and inequality and their trends over time. Since data on poverty and inequality are often used to evaluate social programs and formulate policy, it is important to understand these inconsistencies. Therefore, the objectives of this paper are as follows: first, to identify the sources of data on poverty and inequality in Brazil; second, to compare poverty and inequality for the period 1985 to 2007 from the different data sources and attempt to identify what might explain the observed discrepancies in both levels and trends; third, to analyze what happened to poverty during the economic crisis of 1990-1992, when gross domestic product (GDP) per capita fell at 2.7% per year on average; and fourth, to analyze an observed fall in poverty and inequality since 2001 and assess the impact of *Bolsa Família*, a conditional cash transfer (CCT) program implemented in 2003.

Discrepancies in the Data:

What Can We Conclude about Poverty and Inequality in Brazil?

Despite showing promises of economic growth two decades earlier, Brazil's outlook seemed dismal in 1990. Between one third and one half of Brazilians were living in poverty.¹ GDP per capita fell by 5.9% in 1990, beginning a macroeconomic crisis that would last until 1992.² Income inequality had reached an all-time high one year earlier; the Gini coefficient in 1989 was 0.63,³ making Brazil the second most unequal country in the world, narrowly behind Sierra Leone.⁴

1 The 1990 poverty headcount ratio, calculated using the methodologies explained later, was 48.0% according to ECLAC (<http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1>), 34.2% according to the World Bank (<http://iresearch.worldbank.org/PovcalNet/>), 37.7% according to SEDLAC (<http://www.depeco.econo.unlp.edu.ar/sedlac/eng/dynamics-searches.php>), and 34% according to IPEA (<http://www.ipeadata.gov.br/>); all online databases accessed October, 2009.

2 World Bank, "World Development Indicators," accessed December, 2009, <http://databank.worldbank.org/ddp/home.do?Step=12&id=4&CNO=2>.

3 World Bank, "World Development Indicators," accessed December, 2009.

4 Francisco H. G. Ferreira, Phillippe G. Leite, and Julie A. Litchfield, "The Rise and Fall of Brazilian Inequality: 1981-2004," *Macroeconomic Dynamics* 12, supplement 2 (2008): 199. However, for a detailed discussion of the

More recently, conditions appear to be improving. Since 2001, the data sources show an overall decline in poverty in Brazil using various poverty lines and multiple measures of poverty. The headcount index, poverty gap, and squared poverty gap all decreased by between 25% and 40% over the years 2001 to 2007. Income inequality has also dropped significantly: the Gini coefficient decreased an average of 1.2% per year over the period 2001-2007.⁵ Some of this decline in inequality can be attributed to *Bolsa Família*, a conditional cash transfer program introduced in 2003.⁶

This paper analyzes the trends of poverty and inequality in Brazil over time. Section 1 describes each of the data sources and the household surveys used. Section 2 compares the data on poverty and inequality for the period 1985-2007. Section 3 analyzes the evolution of poverty during the crisis of 1990-1992 and looks at how the different methodologies used by each data source might explain the discrepancies. Section 4 describes the *Bolsa Família* program, its main characteristics, and its effects on poverty and inequality. Section 5 presents conclusions.

1. Data sources on poverty and inequality

Four well-respected data sources produce data on poverty and inequality in Brazil: the United Nations' Economic Commission for Latin America and the Caribbean (ECLAC), the World Bank, the Socio-Economic Database for Latin America and the Caribbean (SEDLAC), and the Brazilian government's Applied Economics Research Institute (IPEA). While all of these sources derive their figures from the same micro-data source (annual household surveys conducted by the Brazilian government's Institute of Geography and Statistics [IBGE]), they often use different calculation methods and arrive at different values for various common indicators of poverty and inequality. Their different methodologies do not present large problems if the data they produce

problems associated with country inequality rankings, see Miguel Székely and Marianne Hilgert, "What's Behind the Inequality We Measure? An Investigation Using Latin American Data," *Oxford Development Studies* 35, no. 2 (2007): 197-217.

5 Ricardo Barros et al., "Markets, the State, and the Dynamics of Inequality in Brazil," in *Declining Inequality in Latin America: a Decade of Progress?*, ed. Luis F. López-Calva and Nora Lustig (Washington, D.C.: Brookings Institution Press, 2010), 134-6.

6 Sergei Soares et al., "Conditional Cash Transfers in Brazil, Chile and Mexico: Impacts upon Inequality," *Estudios Económicos* Special Issue (2009): 219 and Barros et al., "Markets," 145-54.

still agrees on poverty levels and trends, but levels and trends often differ, which can create contradicting conclusions. When discrepancies or inconsistencies exist among sources, using poverty and inequality data to assess social policy becomes a more complex task.

Before looking at the data, trends, and methodologies of each organization, it is useful to understand their common source: the IBGE household survey. Each year, IBGE conducts a survey of over 100,000 households called the *Pesquisa Nacional por Amostra de Domicílios* (PNAD); sample sizes over the time frame 1985-2007 have ranged from 291,000 to 525,000 individuals. The survey did not have complete national coverage from 1985 to 2003 because the rural parts of the North Region were not included in the sample until 2004.⁷

The survey measures income rather than consumption, even though consumption is smoother over time, can be more accurately measured, and better reflects a household's ability to meet basic needs.⁸ This can tend to overstate inequality, especially when one takes into account that income volatility in Brazil is higher than in the rest of Latin America—a region already known for high income volatility.⁹ This leads to an overestimation of Brazil's inequality ranking in the world because many developing countries use only expenditure-based questions on their surveys. Indeed, using data from consumption-based surveys considerably lowers inequality estimates: the consumption-based Gini coefficient for Brazil in 1996 was around 0.45, compared to an income-based Gini coefficient of 0.60.¹⁰ Although there are surveys that ask questions about both consumption and income, like the *Pesquisa de Orçamentos Familiares* and the *Pesquisa sobre Padrões de Vida*, they are too infrequent to be useful for comparisons across time.

The PNAD does not ask adequate questions to capture non-monetary

7 Ferreira, Leite, and Litchfield, "Rise and Fall," 201 and 224.

8 Aline Coudouel, Jesko S. Hentschel, and Quentin T. Wodon, "Poverty Measurement and Analysis," in *A Sourcebook for Poverty Reduction Strategies Volume 1: Core Techniques and Cross-Cutting Issues*, edited by Jeni Klugman (Washington, D.C.: World Bank, 2002), 30.

9 Leonardo Gasparini, "Different Lives: Inequality in Latin America," in *Inequality in Latin America: Breaking with History?*, ed. David de Ferranti et al. (Washington, D.C.: World Bank, 2004), 49-50.

10 Chris Elbers et al., "Poverty and Inequality in Brazil: New Estimates from Combined PPV-PNAD Data," in *Inequality and Economic Development in Brazil*, ed. Carlos Eduardo Vélez, Ricardo Barros, and Francisco H.G. Ferreira (Washington, D.C.: World Bank, 2004), 81-104; see also Gasparini, "Different Lives," 48-50.

incomes or returns from assets, like rents and interests.¹¹ Furthermore, changes in the PNAD survey over time make cross-time comparisons less useful. A new survey was introduced in 1992, and changes were made in 2004. Starting in 2004, the survey includes the rural areas of Brazil's North Region (which had previously been excluded), and more detailed questions regarding transfer incomes were added.¹² The PNAD was not conducted in 1991 or 2000 (because they were census years) or in 1994.¹³

In short, Brazil's statistics on poverty and inequality are provided by four main sources: ECLAC, the World Bank, SEDLAC, and IPEA. All four sources calculate levels of poverty and inequality using micro-data from the PNAD household surveys.

2. Evolution of poverty and inequality: 1985-2007

Each organization, to estimate poverty, provides figures for the headcount index. This measure is useful to the extent that it provides a general idea of the percentage of the population living below a given poverty line. There are a number of trends: for example, according to each of the three organizations that have data for 1985-1989, there was a very large drop in the incidence of poverty in 1986,¹⁴ but poverty almost entirely returned to prior levels in 1987 and continued to rise in 1988. In addition, all of the organizations seem to agree that the headcount ratio has been falling since 2003. Despite the agreement on some trends, the percent of

11 Ricardo Barros, Samir Cury, and Gabriel Ulyssea, "A Desigualdade de Renda no Brasil Encontra-se Subestimada? Uma Análise Comparativa usando PNAD, POF e Contas Nacionais," in *Desigualdade de Renda no Brasil: uma Análise da Queda Recente*, ed. Ricardo Barros, Miguel Foguel, and Gabriel Ulyssea (Brasília: Instituto de Pesquisa Econômica Aplicada, 2007), 250-256.

12 Ferreira, Leite, and Litchfield, "Rise and Fall," 212 and 224.

13 Centro de Estudios Distributivos, Laborales y Sociales (CEDLAS) and World Bank, "A Guide to the SEDLAC Socio-Economic Database for Latin America and the Caribbean," accessed October, 2009, http://www.depeco.econo.unlp.edu.ar/cedlas/sedlac/pdfs/guide_sedlac.pdf, 6.

14 What happened in 1986? Ferreira, Leite, and Litchfield attempt to answer this question. A portion of the drop could have been caused by the 1986 *Crusado* stabilization plan. However, the magnitudes of the drop in poverty do not coincide with a comparable increase in GDP or reduction in income inequality. Income grew by 46% using PNAD micro-data, but GDP only grew by 7% according to national accounts. Ferreira, Leite, and Litchfield note that there were no methodological changes in the survey and conclude that the household survey results overstated income and therefore underestimated absolute poverty for the year 1986.

people living in poverty according to ECLAC is significantly higher than the same percentage according to the other organizations. This observation is unambiguous; it holds true throughout the time period 1985-2007.

Extreme poverty follows a similar pattern to total poverty, but one important discrepancy occurs during Brazil's crisis of 1990-1992. The sources show contradictory trends for the evolution of extreme poverty during the crisis. Inequality trends, on the other hand, are generally consistent from 1985 to 2007. The only interesting discrepancy is the consistently higher Gini calculated by ECLAC.

The evolution of poverty and inequality between 1985 and 2007 is a topic of some agreement and some disagreement between data sources. They all agree that the headcount ratio has been consistently falling since 2003, and that the evolution of extreme poverty levels resembles the evolution of total poverty levels. The organizations also generally agree on inequality trends, as measured by the Gini coefficient. They disagree on the evolution of extreme poverty during the crisis of 1990-1992.

3. Poverty during the crisis of 1990-1992

During the period 1990-1992, Brazil experienced an economic crisis: GDP per capita fell by 2.7% per year on average¹⁵ and hyperinflation reached an annual rate of 1509% in 1990.¹⁶ Figure 1 shows each source's headcount ratio during the crisis years using their respective extreme poverty lines. Unfortunately, there are no data points for 1991 since it was a census year; nevertheless, a comparison of the data points from 1990 and 1992 can be used to determine whether poverty increased or decreased during the crisis. The trends are completely contradictory: SEDLAC shows an increase in extreme poverty of 0.2 percentage points between 1990 and 1992, while IPEA shows no change and the World Bank shows a decrease of 2.2 percentage points. How can these inconsistencies be explained?

Year	SEDLAC	IPEA	World Bank
1990	19.1	20.0	15.5
1992	19.3	20.0	13.3

Figure 1. Headcount index in Brazil using the extreme poverty line. Each organization determines its own extreme poverty line. ECLAC is not included because it does not have a data point for 1992. Data is from each source's online database: World Bank (<http://iresearch.worldbank.org/PovcalNet/>); SEDLAC (<http://www.depeco.econo.unlp.edu.ar/sedlac/eng/dynamics-searches.php>); IPEA (<http://www.ipeadata.gov.br/>), all accessed

15 World Bank, "World Development Indicators," accessed December, 2009.

16 Ferreira, Leite, and Litchfield, "Rise and Fall," 219.

October, 2009. Note that SEDLAC no longer provides estimates for poverty using an extreme poverty line lower than \$2.50 PPP per day, which are the estimates shown here.

One of the most important—and sometimes arbitrary—aspects of the headcount index is the choice of a poverty line. The most intuitive explanation for poverty data discrepancies is the different poverty lines selected by each organization. The World Bank and SEDLAC use international poverty lines established by the World Bank to allow for poverty comparisons across countries. In addition, the World Bank's PovcalNet database allows users to select any poverty line. As the World Bank often does,¹⁷ I used \$1.25 per day (US dollars adjusted for purchasing power parity [PPP], using 2005 as the base year)¹⁸ as the extreme poverty line and \$2.50 PPP per day as the poverty line. This extreme poverty line approximately represents the average national poverty line of the bottom fifteen low-income, less-developed countries,¹⁹ and therefore probably does not accurately reflect the cost of fulfilling nutritional requirements in Brazil. SEDLAC stresses the importance of using higher poverty lines than \$1.25 and \$2.50 PPP per day; in fact, for total poverty SEDLAC recommends a \$4 PPP per day line.²⁰ For comparative purposes, however, I selected \$2.50 PPP per day for total poverty.

ECLAC, on the other hand, adopts the food energy intake method to determine the extreme poverty line and calculates the cost in local currency of a food-only basket that will meet households' minimum caloric and protein requirements. Consequently, the extreme poor are defined as people who live in households that do not have enough income to meet the minimum nutritional needs of each family member, even if the household spent 100% of its money on food. To account for price differences across areas, ECLAC calculates an urban and rural extreme poverty line for each of Brazil's five official geographic regions, resulting in a total of ten distinct extreme poverty lines. To calculate the total poverty line, ECLAC uses a multiplier to impute the cost of basic non-food expenditures and adds those to the basic needs basket. The national headcount index aggregates the number of people who live below their respective

17 Shaohua Chen and Martin Ravallion, "The Developing World is Poorer than We Thought, but No Less Successful in the Fight Against Poverty," *The Quarterly Journal of Economics* 125, no. 4 (2010): 1577-1625.

18 From here on, "\$1.25 per day (US dollars adjusted for PPP, using 2005 as the base year)" will be abbreviated as "\$1.25 PPP per day."

19 Chen and Ravallion, "Developing World," 1581.

20 CEDLAS and World Bank, "A Guide," 28.

poverty line and divides this by the country's total population.²¹

IPEA follows a similar methodology, using the cost of basic needs method. IPEA first determines what products to include in the basic needs basket, using data from a nutritional household survey and a consumption-based survey carried out in 5-10 year intervals. Then, they determine the price of this basket in 24 regions, which include 14 metropolitan areas, the urban sectors of Brazil's five official geographic regions, and the rural sectors of the five geographic regions.²² The price of this basket in each of the 24 regions determines the extreme poverty lines, which contrasts with ECLAC's method of using a food-only basket to determine the extreme poverty lines. The highest IPEA extreme poverty line for the year 2009, at R\$124.96 reais (metropolitan Porto Alegre), is 1.86 times higher than the lowest extreme poverty line of R\$67.24 reais (rural East Region).²³

Given their different methods of choosing a poverty line, it is not surprising that the different organizations show different levels and trends for poverty. For example, the World Bank and SEDLAC, when using a poverty line of \$2.50 PPP per day, produce similar numbers. ECLAC and IPEA, which calculate the price of a basket in different regions in Brazil, will have higher poverty lines—and therefore a higher incidence of poverty and poverty gap—than the World Bank and SEDLAC (assuming that the cost of a basic needs basket in Brazil is higher than the \$2.50 PPP per day poverty line used by the World Bank and SEDLAC).²⁴

21 ECLAC, "Social Indicators and Statistics: Poverty and income distribution: Population Living below the Poverty and Extreme Poverty Lines, by Urban and Rural Areas," technical note, accessed October, 2009, <http://websie.eclac.cl/infest/ajax/cepalstat.asp?carpeta=estadisticas&idioma=i>.

22 IPEA, "Metodologia na Determinação das Linhas de Pobreza e Indigência (por Insuficiência no Consumo de Calorias por Dia)," technical note, accessed November, 2009, <http://www.ipeadata.gov.br>.

23 A spreadsheet with the 24 (extreme) poverty lines calculated each year by IPEA for the years 1976-2009 can be downloaded at <http://www.ipeadata.gov.br/doc/LinhasPobrezaRegionais.xls>. The East Region, which is not one of the five official geographic regions, is the Southeast Region without São Paulo and Rio de Janeiro states.

24 This is a valid assumption because the World Bank uses a deliberately conservative standard, "anchored to what 'poverty' means to the world's poorest countries" (Chen and Ravallion, "Developing World," 1580). Whether the difference between ECLAC's poverty line and the World Bank's \$2.50 PPP poverty line is substantial enough to overpower methodological issues—like the fact that ECLAC corrects for underreporting (which should lower its reported

A few other differences exist between the organizations in their poverty calculation methods. These differences help to further explain the discrepancies and inconsistencies in data values and trends (in particular, between the World Bank and SEDLAC, using the same poverty line of \$2.50 PPP per day). The first difference relates to the use of equivalence scales to compensate for the fact that different people in a household have different needs based on age, gender, and other characteristics. Generally in Latin America, equivalence scales are not used.²⁵ SEDLAC, however, does account for differences in needs by using equivalence scales. SEDLAC employs the equation that the total number of adult equivalents in a household equals $(0.5K_1 + 0.75K_2 + A)^{0.9}$, where K_1 represents children ages 0-5, K_2 represents children ages 6-14, and A represents adults ages 15 and over.²⁶ The equation's exponent accounts for economies of scale within households. The other organizations do not adjust for adult equivalence or economies of scale. Since children do not need as many calories as adults to fulfill their daily requirement, and since larger households might experience economies of scale, adjusting for these factors would *lower* the incidence of poverty. This might explain why the majority of SEDLAC's headcount index data points are lower than the World Bank's corresponding data points.

The second difference relates to another common problem faced by organizations or economists trying to produce poverty statistics: the treatment of missing and zero incomes. Each organization treats these differently. For example, ECLAC imputes values for non-reported incomes, whereas SEDLAC throws out non-reported incomes and keeps zero incomes in their poverty measures.²⁷ Despite these differences in methodology, it is comforting to know that Székely et al. tested the robustness of Brazil's poverty measures to adjustments for missing and zero incomes and found that the minimum and maximum values for Brazil's headcount index only differed by 2.8 percentage points.²⁸

The third difference relates to another issue with measuring poverty using household survey data: underreporting. ECLAC estimates the level of underreporting by comparing aggregated survey data to national

headcount ratio)—is not within the scope of this paper.

25 Miguel Székely et al., "Do We Know how much Poverty there is," *Oxford Development Studies* 32, no. 4 (2004): 531.

26 CEDLAS and World Bank, "A Guide," 24.

27 ECLAC, "Social Indicators," 1; CEDLAS and World Bank, "A Guide," 18-20.

28 Székely et al., "Do We Know," 524.

accounts data, and corrects for this underreporting.²⁹ This practice increases incomes and thereby *decreases* poverty indicators. The World Bank re-scales their income data in the opposite direction to address a different issue—the idea that consumption is a more accurate welfare measure than income. Thus, they multiply income by a marginal propensity to consume to obtain a value for consumption and use this to calculate their poverty measures.³⁰ Since the marginal propensity to consume is by definition less than or equal to one, this practice down-scales people's incomes and thereby *increases* poverty indicators. In addition to SEDLAC's adjustment for adult equivalence and economies of scale, the World Bank's adjustment for marginal propensity to consume could help explain why the majority of the World Bank's headcount index data points are higher than SEDLAC's corresponding data points.

Clearly, each data source uses a different combination of adjustments to address the issues of using survey data to develop poverty statistics. The issues are the choice of a poverty line, adjustments for adult equivalence scales and economies of scale, methods for treating missing and zero incomes, and adjustments to handle income misreporting. Each adjustment affects the levels and trends of poverty measures, and this section has identified the ways in which different methodological choices can affect the data. However, since each source combines all of their adjustments to produce a set of poverty and inequality figures, it is difficult to link inconsistent trends to a specific adjustment used by one data source and not used (or used differently) by another. Thus, I was not able to determine why the extreme poverty headcount ratios showed contradictory trends during the crisis. In particular, determining why the World Bank showed a decrease in extreme poverty from 1990 to 1992, while SEDLAC showed an increase and IPEA showed no change requires further analysis that goes beyond the scope of the present paper.

A further look at the 1990-1992 crisis reveals that it did not affect everyone equally; Figure 2 shows that while the rural population enjoyed a significant decrease in poverty and extreme poverty despite the crisis (which may have been part of an unstoppable trend of declining rural-urban labor market segmentation),³¹ the effect on urban poverty was ambiguous. According to ECLAC, the incidence of urban poverty decreased, but according to SEDLAC it increased during the crisis years. So, in terms of trends, the discrepancy is regarding urban poverty. How-

29 ECLAC, "Social Indicators," 1.

30 Székely et al., "Do We Know," 536.

31 See Barros et al., "Markets," 158-65.

ever, there is also a discrepancy regarding rural poverty, in terms of the magnitude of its reduction: SEDLAC shows significantly lower declines in rural poverty than ECLAC. The underlying causes of this require further research that goes beyond the scope of the present paper.

Year	ECLAC Urban (Extreme PL)	ECLAC Rural (Extreme PL)	ECLAC Urban (PL)	ECLAC Rural (PL)	SEDLAC Urban	SEDLAC Rural
1990	16.7	46.1	41.2	70.6	29.4	62.3
1992					31.2	61.0
1993	15.0	38.8	40.3	63.0	31.2	59.4

Figure 2. Rural and urban headcount index in Brazil. This table includes ECLAC data with two poverty lines and SEDLAC data with one poverty line. PL stands for poverty line. The year 1993 is included because ECLAC does not have data for 1992. Data is from each source's online database: ECLAC (<http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1>); SEDLAC (<http://www.depeco.econo.unlp.edu.ar/sedlac/eng/dynamics-searches.php>), both accessed October, 2009.

4. The decline in poverty and inequality since 2001

Since 2001, absolute poverty and income inequality in Brazil have declined significantly. All four data producers agree on this trend. The decline in the percent of the population living in poverty (measured by the headcount ratio) is especially evident from 2003 on. A portion of the recent fall in poverty and inequality can be directly attributed to monetary transfers through the *Bolsa Familia* program, implemented in late 2003. This section will take a closer look at poverty and inequality data for the period 2001-2007, describe *Bolsa Familia* and its main characteristics, and analyze the impacts of the program.

Using 2001 and 2007 as two points of comparison, the recent reduction in poverty has been impressive. All four data sources show a large drop in the headcount ratio: the reduction varies from 7.2 percentage points (ECLAC) to 11.2 percentage points (World Bank). The absolute number of people living in extreme poverty has decreased by 11 million in spite of population growth. The amount of resources needed to eradicate poverty (equivalently, the total poverty gap) has decreased substantially from R\$63 billion reais per year to R\$45 billion reais per year, which makes the alleviation of poverty more feasible. These impressive drops in poverty are partially explained by falls in inequality over the period: 62% of the reduction in extreme poverty can be attributed to decreased income inequality.³²

Inequality has also fallen substantially between 2001 and 2007. The Gini has declined 6.9%, and the 2007 income distribution Lorenz-dominates the 2001 distribution. The average annual rate of income growth of

32 Barros et al., "Markets," 137.

the bottom decile is nearly three times the national average and is higher than the average annual income growth rate of any other income group. In 2007, the Gini coefficient reached its lowest level in over 30 years.³³

Some of the recent reduction in levels of poverty and inequality is attributable to *Bolsa Família*, a conditional cash transfer program (CCT). *Bolsa Família* was introduced in October, 2003 to organize and merge the various CCTs in existence, which had separate financing schemes, implementing agencies, conditions, and information systems. These CCTs included the *Programa de Erradicação do Trabalho Infantil*, run by the Social Assistance Secretariat of the federal government and created in 1996; the *Bolsa Escola Federal*, run by the Ministry of Education; the *Bolsa Alimentação*, run by the Ministry of Health; and the *Cartão Alimentação*, run by the Ministry of Social Development. Because the information systems of the old CCTs did not exchange information, one family could receive all four benefits while an equally needy family received none.³⁴

More than 12 million households spanning all of Brazil's municipalities receive cash transfers from the *Bolsa Família* program;³⁵ over 46 million people live in households that receive transfers from the program.³⁶ It is extremely well-targeted³⁷ and only households with per-capita household income below the poverty line are eligible (for the purposes of *Bolsa Família*, the poverty line is household per capita income of R\$140 per month).³⁸ Thus, there are almost no leakages to the non-poor and the policy is highly progressive. The eligibility requirements and transfer size are as follows. The base benefit transfers R\$68 per month to any family—with or without children—living in *extreme* poverty (household per capita income below R\$70 per month). The variable benefits award an additional R\$22 a month per child age 0-15 (up to 3 children) and R\$33 a month per adolescent age 16 or 17 (up to 2 adolescents). Families in *moderate* poverty³⁹ are not eligible to receive the base benefit, but receive the variable benefits based on the number of children

33 Barros et al., "Markets," 134-6.

34 Sergei Soares and Natália Sátyro, "O Programa Bolsa Família: Desenho Institucional, Impactos e Possibilidades Futuras," *IPEA Textos Para Discussão*, no. 1424 (2009): 8-10.

35 Ministério do Desenvolvimento Social e Combate à Fome (MDS), "Bolsa Família," accessed December, 2009, <http://www.mds.gov.br/bolsafamilia>.

36 Barros et al., "Markets," 147.

37 Soares et al., "Conditional Cash Transfers," 209-24.

38 MDS, "Bolsa Família," accessed December, 2009.

39 Families in moderate poverty are families with a household per capita below the poverty line but above the extreme poverty line.

they have. Any family in extreme poverty is eligible, and any family in moderate poverty with at least one child under age 18 is eligible.⁴⁰

Families are selected based on information entered by municipal civil workers into *Cadastro Único*—a data collection system with the objective of identifying all poor families in the country. Municipal civil workers also verify that the conditions of the program are being met. The conditions are divided into three categories: education, health, and social assistance. Under education, children and adolescents between the ages of 6 and 15 must have at least 85% school attendance, while 16- and 17-year-olds must have at least 75% school attendance. Under health, children between the ages of 0 and 6 must adhere to a calendar of vaccinations. Pregnant women and breast-feeding mothers must attend prenatal and postnatal care sessions. Under social assistance, children under 16 who are at-risk or employed in child labor must attend provided socio-educational service sessions.⁴¹

The program, which is administered by the *Ministério do Desenvolvimento Social e Combate à Fome* (MDS), has received increased funding over the years. Progress in poverty and inequality is measured by IPEA; economists from IPEA even decompose inequality data to determine how much of a given inequality reduction was due to *Bolsa Família*. While IPEA is a government agency, it is a separate government agency from MDS, and IPEA analysts are often academics. As a result, *Bolsa Família* has a credible mechanism to assess its evolution and impact. Since its implementation in 2003, the *Bolsa Família* program has played an important role in the reduction of poverty and inequality and should continue to be expanded.

Logically, transferring income to families in moderate and extreme poverty (with more transferred to families in extreme poverty) will reduce inequality in an absolutely progressive way. In addition, it will reduce poverty by directly giving poor families enough income to move above the poverty line. Finally, the conditions of *Bolsa Família* should lead to higher investments in human capital among the poor, which will help to fight the poverty cycle in the long term. Nevertheless, the direct (quantifiable) impact of the program on poverty and inequality is important information for policymakers who must often choose between competing social programs. Barros et al. decompose the decline in inequality between 2001 and 2007 to determine the impact of *Bolsa Família* on inequality.

40 MDS, “Bolsa Família,” accessed December, 2009.

41 MDS, “Bolsa Família,” accessed December, 2009.

To isolate the contribution of *Bolsa Familia* transfers to income inequality reduction, Barros et al. first decompose household per capita income, which is used to determine inequality measures, into its four proximate determinants: labor income per working adult, proportion of adults working, non-labor income per adult, and proportion of adults in the household. In Brazil, changes in all four of the proximate determinants during 2001-2007 were equalizing, with changes in the distribution of non-labor income having the largest effect. The authors then split non-labor income into seven categories; one of these categories is *Bolsa Familia* and its predecessors. By performing counter-factual simulations to simulate what would have happened if the distribution of each non-labor income source had not changed, the authors found that *Bolsa Familia* explained 13% of the overall decline in income inequality. That number is substantial, considering that *Bolsa Familia* transfers only made up 0.5% of total national income in 2007.⁴²

The decline of poverty and inequality in Brazil since 2001 has been notable. There is no disagreement between the data sources that poverty and inequality have fallen significantly in recent years. Hopefully, the Brazilian government will pursue social policies that have a high chance to sustain these trends of falling poverty and inequality. Expansion of the *Bolsa Familia* conditional cash transfer program would be an excellent way to attempt to maintain or even improve the falling rates of poverty and inequality in the country. It is an economically efficient program that has produced excellent results in the past; while it only made up 0.5% of total income in 2007, it was responsible for 13% of the decline in income inequality between 2001 and 2007. It is a large-scale program that is effectively targeted, promotes investment in human capital, avoids significant leakages to the non-poor, and has a credible mechanism to assess its progress and impact.

5. Conclusions

There are four main organizations that provide data on poverty and inequality in Brazil: the Economic Commission for Latin America and the Caribbean (ECLAC), the World Bank, the Socio-Economic Database for Latin America and the Caribbean (SEDLAC), and a Brazilian governmental agency, the *Instituto de Pesquisa Econômica Aplicada* (IPEA). All of them use micro-data from an income-based household survey called the *Pesquisa Nacional por Amostra de Domicílios* (PNAD) that is completed nearly every year by the Brazilian government's Institute of

42 Barros et al., "Markets," 134-174.

Geography and Statistics (IBGE).

Data from the four organizations for the period 1985-2007 often showed discrepancies, both in the levels of poverty and inequality and in their trends over time. The inconsistencies in magnitude were often the result of different methodologies used to choose a poverty line, adjust for adult equivalence, adjust for economies of scale, compensate for missing and zero incomes, and handle income misreporting. For example, SED-LAC's method to adjust for adult equivalence and economies of scale and the World Bank's downscaling of income by a marginal propensity to consume likely both contribute to the World Bank's higher values for poverty (despite using the same poverty line as SEDLAC).

During the crisis of 1990-1992, there are many inconsistencies in the trends of poverty. For example, the extreme poverty headcount ratio decreased according to the World Bank, increased according to SED-LAC, and did not change according to IPEA. In addition, the evolution of urban poverty during the crisis is inconsistent across sources: ECLAC shows a decrease in urban poverty while SEDLAC shows an increase. Determining the underlying factors behind these discrepancies will require further research.

Since 2001, both poverty and inequality have been decreasing in Brazil according to all four data sources. The program *Bolsa Família* has contributed substantially to the recent reduction of poverty and inequality in Brazil. Since it is a well-targeted, progressive program without significant leakages to the non-poor, maintaining (and ideally expanding) the program should continue to have a direct impact on poverty and income inequality in a country notorious for its vast *favelas* and high levels of inequity.

Bibliography

- Barros, Ricardo, Mirela de Carvalho, Samuel Franco, and Rosane Mendonça. "Markets, the State and the Dynamics of Inequality in Brazil." In *Declining Inequality in Latin America: a Decade of Progress?*, edited by Luis F. López-Calva and Nora Lustig, 134-174. Washington, D.C.: Brookings Institution Press, 2010.
- Barros, Ricardo, Samir Cury, and Gabriel Ulyssea. "A Desigualdade de Renda no Brasil Encontra-se Subestimada? Uma Análise Comparativa Usando PNAD, POF, e Contas Nacionais." In *Desigualdade de Renda no Brasil: uma Análise da Queda Recente*, edited by Ricardo Barros, Miguel Foguel, and Gabriel Ulyssea, 237-273. Brasília: Instituto de Pesquisa Econômica Aplicada, 2007.

- CEDLAS (Centro de Estudios Distributivos, Laborales y Sociales) and World Bank. "A Guide to the SEDLAC Socio-Economic Database for Latin America and the Caribbean." Accessed October, 2009. http://www.depeco.econo.unlp.edu.ar/cedlas/sedlac/pdfs/guide_sedlac.pdf
- Chen, Shaohua, and Martin Ravallion. "The Developing World Is Poorer Than We Thought, But No Less Successful in the Fight against Poverty." *The Quarterly Journal of Economics* 125, no. 4 (2010): 1577-1625.
- Coudouel, Aline, Jesko S. Hentschel, and Quentin T. Wodon. "Poverty Measurement and Analysis." In *A Sourcebook for Poverty Reduction Strategies Volume 1: Core Techniques and Cross-Cutting Issues*, edited by Jeni Klugman, 27-74. Washington, D.C.: World Bank, 2002.
- ECLAC (Economic Commission for Latin America and the Caribbean). "Social Indicators and Statistics: Poverty and Income Distribution: Population Living below the Poverty and Extreme Poverty Lines, by Urban and Rural Areas." Technical note. Accessed October, 2009. <http://websie.eclac.cl/infest/ajax/cepalstat.asp?carpeta=estadisticas&idioma=i>.
- Elbers, Chris, Jean O. Lanjouw, Peter Lanjouw, and Phillippe G. Leite. "Poverty and Inequality in Brazil: New Estimates from Combined PPV-PNAD Data." In *Inequality and Economic Development in Brazil*, edited by Carlos Eduardo Vélez, Ricardo Barros, and Francisco H.G. Ferreira, 81-104. Washington, D.C.: World Bank, 2004.
- Ferreira, Francisco H. G., Phillippe G. Leite, and Julie A. Litchfield. "The Rise and Fall of Brazilian Inequality: 1981-2004." *Macroeconomic Dynamics* 12, supplement 2 (2008): 199-230.
- Gasparini, Leonardo. "Different Lives: Inequality in Latin America." In *Inequality in Latin America: Breaking with History?*, edited by David de Ferranti, Guillermo E. Perry, Francisco H. G. Ferreira, and Michael Walton, 35-76. Washington, D.C.: World Bank, 2004.
- IPEA (Instituto de Pesquisa Econômica Aplicada). "Metodologia na Determinação das Linhas de Pobreza e Indigência (por Insuficiência no Consumo de Calorias por Dia)." Technical note. Accessed November, 2009. <http://www.ipeadata.gov.br>.
- MDS (Ministério do Desenvolvimento Social e Combate à Fome). "Bolsa Família." Accessed December, 2009. <http://www.mds>.

gov.br/bolsafamilia

- Soares, Sergei, and Natália Sátyro. "O Programa Bolsa Família: Desenho Institucional, Impactos e Possibilidades Futuras." *IPEA Textos Para Discussão*, no. 1424 (2009): 8-10.
- Soares, Sergei, Rafael Guerreiro Osório, Fábio Veras Soares, Marcelo Medeiros, and Eduardo Zepeda. "Conditional Cash Transfers in Brazil, Chile and Mexico: Impacts upon Inequality." *Estudios Económicos* Special Issue (2009): 207-224.
- Székely, Miguel and Marianne Hilgert. "What's Behind the Inequality We Measure? An Investigation Using Latin American Data." *Oxford Development Studies* 35, no. 2 (2007): 197-217.
- Székely, Miguel, Nora Lustig, Martín Cumpa, and José Antonio Mejía. "Do We Know how much Poverty there is?" *Oxford Development Studies* 32, no. 4 (2004): 523-558.
- World Bank. "World Development Indicators." Accessed December, 2009. <http://databank.worldbank.org/ddp/home.do?Step=12&id=4&CNO=2>.