

## **Discrepancies in the Data: What can we conclude about poverty and inequality in Brazil?**

Sean Higgins  
4 December 2009

After raising hopes and garnishing praise two decades earlier, Brazil looked dismal in 1990. Between one third and one half of Brazilians were living in poverty.<sup>1</sup> GDP per capita fell by 4.3% in 1990, beginning a macroeconomic crisis that would last until 1992 (World Bank, 2008). Income inequality had reached an all-time high one year earlier; the Gini coefficient in 1989 was 0.63 (World Bank, 2009), making Brazil the second most unequal country in the world, narrowly behind Sierra Leone (Ferreira et al., 2007).<sup>2</sup>

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. According to Barros et al. (2009), 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 decreased significantly; Barros et al. (2009) calculate that the Gini coefficient has decreased an average of 1.2% per year over the period 2001-2007. Some of this decline in inequality can be attributed to *Bolsa Família*, a conditional cash transfer program introduced in 2003 (Barros et al., 2009, Soares et al., 2009).

While the recent decline in the levels of poverty and inequality in Brazil are encouraging, different data sources often produce different statistics on poverty and inequality. 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

---

<sup>1</sup> 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/>).

<sup>2</sup> However, see page 3 of this paper for a brief discussion of the problems of international Gini comparisons. For a more detailed discussion, see Milanovic (2002) or Székely and Hilgert (1999).

evaluate social programs and formulate policy, it is important to understand the discrepancies. 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 to attempt to identify what might explain the observed discrepancies in both levels and trends. Third, to analyze what happened to poverty and inequality during the crisis of 1990-1992, when GDP per capita fell (on average) at 1.1% per year. Fourth, to analyze what has happened to poverty and inequality since 2001 and to assess the impact of the conditional cash transfer program *Bolsa Família*.

This paper is organized in four sections: Section 1 describes each of data sources and the household surveys they use. Section 2 compares the data on poverty and inequality for the period 1985-2007. Section 3 analyzes the evolution of poverty and inequality 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**

Data is available from a number of well-respected sources, including the Economic Commission for Latin America and the Caribbean (ECLAC), the World Bank (WB), the Socio-Economic Database for Latin America and the Caribbean (SEDLAC), and a Brazilian governmental agency, the *Instituto de Pesquisa Econômica Aplicada* (IPEA). While all of these sources derive their figures from the same micro-data source (annual household surveys conducted by IPEA), 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 still agrees on the trends, but trends often differ,

which can create contradicting conclusions. If there are discrepancies or inconsistencies among sources, using the poverty and inequality data to prescribe policy can become extremely difficult.

Before looking at the data, trends, and methodologies of each organization, it is useful to understand their common source: the IPEA household survey. Each year, IPEA 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 (Ferreira et al., 2007).

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 (Coudouel et al. 2002). 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 (Gasparini 2004). 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 (Gasparini 2004). Indeed, Elbers et al. (2003) used data from a consumption-based survey and infer that consumption-based inequality in Brazil is much lower, with a Gini coefficient of around 0.45 (compared to 0.60 for income-based inequality). New surveys that ask questions about both consumption and income, like the *Pesquisa de Orçamentos Familiares* and the *Pesquisa sobre Padrões de Vida*, are beginning to emerge, but they are too recent to be useful for comparisons across time (Barros et al., 2009, Gasparini, 2004).

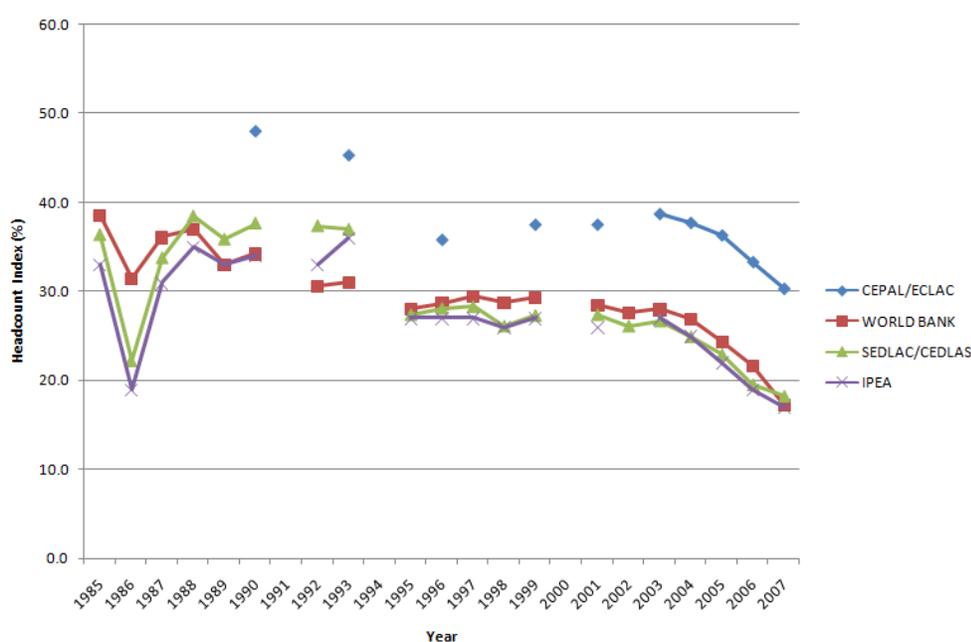
According to Barros et al. (2009), the PNAD does not ask adequate questions to capture non-monetary incomes or returns from assets, like rents and interests. Furthermore, changes in

the PNAD survey over time make cross-time comparisons less useful. A new survey was introduced in 1992 (CEDLAS, 2009), 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 (Ferreira et al., 2007). The PNAD was not conducted in 1991 or 2000 (because they were census years) or in 1994.

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. The resulting data from each organization can be seen below



**Figure 1.** Brazil's headcount index, 1985-2007. Each organization determines its own poverty line (explained below). Sources: CEPAL STAT (<http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1>); World Bank PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>); SEDLAC Dynamic Searches (<http://www.depeco.econo.unlp.edu.ar/sedlac/eng/dynamics-searches.php>); IPEA Data (<http://www.ipeadata.gov.br/>)

in Figure 1, which is presented in graphic form to make trends and disparities easy to locate.

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,<sup>3</sup> 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 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.

The extreme poverty indicators follow a similar pattern to poverty measured using the moderate poverty lines, but one important discrepancy occurs during Brazil's crisis of 1990-1992. The four sources show three different trends for the evolution of extreme poverty during the crisis. This will be explored further in section 3.

Inequality trends, which do not depend on the somewhat arbitrary choice of a poverty line, are much less inconsistent and almost exclusively show the same trends over the 1985-2007 time period. The only two interesting discrepancies for the Gini values are (1) an outlier data point in 1985 from SEDLAC's data and (2) the consistently higher Gini values calculated by ECLAC. The first discrepancy appears to be a misprint or a miscalculation, given that all of the other agencies' data line up for the 1985 Gini, including independent calculations by Barros et al. (2009) and Ferreira et al. (2007), and given that from 1986 on, SEDLAC agrees with the other

---

<sup>3</sup> What happened in 1986? Ferreira et al. (2007) attempts to answer this question. A portion of the big drop could have been caused by the 1986 *Crusado* stabilization plan. However, the magnitudes of the drop in poverty do not match up with the increase in GDP or a reduction in inequality; income grew by 46% using PNAD micro-data, but GDP only grew by 7% according to national accounts. Ferreira et al. (2007) notes that there were no methodological changes in the survey and concludes that the national accounts overstated income and absolute poverty for the year 1986.

organizations regarding the Gini.<sup>4</sup> The second discrepancy can be at least partially explained by ECLAC's method to adjust for underreporting (Székeley et al. 2004). Their method involves first calculating the difference between income in national accounts and income from the household surveys. Then, the difference in wage income is allocated in the same proportion that wage is distributed according to the surveys, but the difference in property income is entirely allocated to the top quintile. This has two implications: poverty indicators decrease (because of the adjustment of wage income), but inequality indicators increase.

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 levels of extreme poverty resemble the evolution of levels of moderate poverty. They also generally agree on the inequality trends, measured by the Gini coefficient, from 1986 on. They disagree on the evolution of extreme poverty during the crisis of 1990-1992.

### **3. Poverty and inequality during the crisis of 1990-1992**

During the period 1990-1992, Brazil experienced an economic crisis: GDP per capita fell by 1.1% per year on average (World Bank, 2008) and hyperinflation reached an annual rate of 1509% in 1990 (Ferreira et al., 2009). Figure 2 below is a table that 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; thus, a comparison of the data points from 1990 and 1992 will have to be sufficient in determining whether poverty increased or decreased during the crisis. I have included the year 1993 as well because ECLAC

---

<sup>4</sup> Sources: CEPAL STAT (<http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1>); World Bank Povcal Net (<http://iresearch.worldbank.org/PovcalNet/>); SEDLAC Dynamic Searches (<http://www.depeco.econo.unlp.edu.ar/sedlac/eng/dynamics-searches.php>); IPEA Data (<http://www.ipeadata.gov.br/>)

did not have a data point for 1992. The trends are completely contradictory: ECLAC shows a decrease in extreme poverty of 3.2 percentage points between 1990 and 1993. The World Bank also shows a decrease in extreme poverty of similar magnitude (2.5 percentage points); however, IPEA shows no change in the (albeit rounded) headcount ratio, and SEDLAC’s calculations argue that extreme poverty *increased* 0.4 percentage points. How can these inconsistencies be explained?

Year	ECLAC	WB	SEDLAC	IPEA
1990	23.4	15.5	19.1	14
1991				
1992		13.3	19.3	14
1993	20.2	13.0	19.5	14

**Figure 2.** Headcount index in Brazil using the extreme poverty line. Each organization determines its own extreme poverty line. Sources: CEPAL STAT (<http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1>); World Bank Povcal Net (<http://iresearch.worldbank.org/PovcalNet/>); SEDLAC Dynamic Searches (<http://www.depeco.econo.unlp.edu.ar/sedlac/eng/dynamics-searches.php>); IPEA Data (<http://www.ipeadata.gov.br/>)

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 the discrepancies seen in the trends is the different choices of moderate poverty line and extreme poverty line by each organization. ECLAC calculates its own poverty lines using the basic needs method. First, they estimate the cost in local currency of a basic food basket that will fulfill the caloric and protein requirements of the population, “taking into account their consumption habits, the real availability of food, and their relative prices” (CEPAL, 2009). ECLAC’s extreme poverty line measures the amount of income that a household would need to fulfill the nutritional needs of all the inhabitants of that household, *assuming they spend 100% of their income on food purchases*. After determining multiple urban and rural extreme poverty lines (one set per geographical region), they multiply the urban extreme poverty lines by 2 and the rural extreme poverty lines by 1.75 to determine the respective urban and rural poverty lines for each geographical region.

The national headcount index aggregates the number of people who live below their region's poverty line and divides this by the country's total population (CEPAL, 2009).

IPEA follows a similar methodology, and even cites ECLAC's methodology. However, IPEA simplifies ECLAC's basic basket by removing a number of items, including some of the close to 150 products that are qualified as "other products" in ECLAC's basket (IPEA, 2002). ("Other products" are kept in the basket if at least 20% of families consume the product). Like ECLAC, IPEA develops distinct poverty lines for different geographical regions, further dividing these regions into metropolitan area, urban area, and rural area. For example, the extreme poverty line for metropolitan Rio de Janeiro was R\$130.12 Brazilian reais (year 2001) per month (IPEA 2002), which equals approximately \$112 per month in 2001 US dollars (not adjusted for PPP)<sup>5</sup>. Obviously, the extreme poverty line for rural areas is significantly lower (IPEA, 2002).

The World Bank adopts a different approach to choosing poverty lines: they use an "international" extreme poverty line of \$38 per month or, equivalently, \$1.25 per day (US dollars in 2005 PPP) so that they can compare poverty in Brazil to poverty in other countries. To supplement this absolute poverty measure, their PovcalNet database allows users to select any poverty line. As the World Bank often does (Chen & Ravallion, 2008), I used 2005 PPP \$1.25 per day as my extreme poverty line and 2005 PPP \$2.50 per day (2005 PPP \$76 per month) as my poverty line. The extreme poverty line approximately represents the average national poverty line of the bottom fifteen low-income less-developed countries (Chen & Ravallion, 2008), and therefore probably does not accurately reflect the cost of fulfilling nutritional requirements in Brazil.

---

<sup>5</sup> My own calculation based on the average 2001 exchange rate of 1 USD = 1.161 BRL

SEDLAC analyzes the incidence of poverty using a range of absolute poverty lines, as well as a relative poverty line set at 50% of mean income. SEDLAC stresses the importance of using a higher poverty line than the World Bank's \$1.25 and \$2.50 per day (2005 PPP) poverty lines; in fact, they recommend a 2005 PPP \$4 per day poverty line (CEDLAS 2009). For comparative purposes, however, I selected their extreme poverty line (they do not elaborate on the numerical value of this poverty line) and a 2005 PPP \$2.50 poverty line.

Given the different methods of choosing a poverty line, it is not surprising that the different organizations produce different levels and trends. For example, World Bank and SEDLAC, which are using the same absolute poverty lines, have similar numbers. ECLAC, which calculates the price of a basket in different regions in Brazil, is expected to have a higher poverty line than the World Bank and SEDLAC,<sup>6</sup> and therefore a higher incidence of poverty and poverty gap. In addition, since IPEA uses a reduced version of ECLAC's basket, it is expected that IPEA would have a lower poverty line and incidence of poverty than ECLAC as well.<sup>7</sup> Indeed, if we use the moderate poverty line for each organization, ECLAC has the highest value for the headcount index and the poverty gap for every year that ECLAC data is available.

A few other differences exist between the organizations in their poverty measure calculation methods. These differences further help to explain the discrepancies and inconsistencies in data values and trends (especially between the World Bank and SEDLAC, who appear to be using the same poverty line of 2005 PPP \$2.50 per day). The first difference

---

<sup>6</sup> This is based on the assumption that the cost of a basket of food and other goods in Brazil is presumably substantially higher than the \$2.50 per day (2005 PPP dollars) poverty line used by the World Bank and SEDLAC, since the World Bank uses a "deliberately conservative standard, anchored to what poverty means to the world's poorest countries" when setting their poverty lines (Chen and Ravallion, 2008). Whether the difference between ECLAC's poverty line and the PPP \$2.50 poverty line of the World Bank and SEDLAC alone is substantial enough to overpower methodological issues—like the fact that ECLAC corrects for underreporting (which should lower the headcount ratio)—is not within the scope of this paper.

<sup>7</sup> See IPEA (2002) for the details of how they arrive at a reduced version of ECLAC's basket

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 (Székely et al., 2004). SEDLAC, however, does account for differences in needs by using equivalence scales. They also simultaneously account for economies of scale, employing the equation that the adult equivalents in the household equal  $(A + 0.5K_1 + 0.75K_2)^{0.9}$ , where A represents adults (15 years and older),  $K_1$  represents children under five years of age, and  $K_2$  represents children age 6 to 14 (CEDLAS, 2009). 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 experience economies of scale, adjusting for these factors would *lower* the incidence of poverty. This could help explain why the majority of the headcount index data points for SEDLAC (using a 2005 PPP \$2.50 per day poverty line) are lower than the corresponding data points for the World Bank (using the same poverty line).

The second difference relates to another common problem faced by organizations or economists trying to produce poverty statistics: the treatment of zero or missing incomes. Each organization treats these differently. For example, ECLAC imputes values for non-reported incomes (CEPAL 2009), whereas SEDLAC throws out non-reported incomes and keeps zero incomes in their poverty measures (CEDLAS 2009). Despite these differences in methodology, it is comforting to know that Székely et al. (2004) 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 varied by 2.8 percentage points.

The third difference relates to another issue with developing a poverty measure from survey data: underreporting. SEDLAC notes that "working with raw data has the advantage of

disparity” and therefore does not correct for underreporting (CEDLAS 2009). Once again on the other side of the debate, ECLAC estimates the level of underreporting by comparing aggregated survey data to national accounts data, and corrects for this underreporting (CEPAL 2009). The World Bank re-scales their income to address a different issue—the idea that consumption is a better, more stable, and 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 (Székeley et al. 2004). 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. This could help explain why the World Bank has higher results (unambiguously) for the headcount ratio than IPEA using each organization’s respective poverty line. For their extreme poverty lines, the World Bank does not have unambiguously higher headcount ratio values than IPEA, but they do have higher values for a majority of the years. Given IPEA’s higher extreme poverty line—which is calculated with respect to the cost of a basket of goods in Brazil rather than with respect to the average cost of a basket of goods in one of the poorest 15 developing countries<sup>8</sup>—one would expect IPEA to generally show a higher incidence of poverty. However, the opposite relationship prevails, which might be partially explained by the World Bank’s use of rescaling using the marginal propensity to consume.<sup>9</sup>

Clearly, the four data sources use very different combinations of adjustments. Each adjustment seeks to address one of 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

---

<sup>8</sup> See page 8 of this paper, or for a more detailed explanation see Chen & Ravallion (2008)

<sup>9</sup> A more detailed explanation of the World Bank’s method can be found in Székeley et al. (2004)

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 ECLAC and World Bank showed a decrease in extreme poverty from 1990 to 1993, 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 3 shows that while the rural population enjoyed a significant decrease in poverty and extreme poverty despite the crisis (which seems to have just been part of an unstoppable trend of declining rural-urban labor market segmentation),<sup>10</sup> the effect on urban poverty was ambiguous.

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
1991						
1992					31.2	61.0
1993	15.0	38.8	40.3	63.0	31.2	59.4

**Figure 3.** Rural and urban headcount index in Brazil. Includes ECLAC data with two poverty lines and SEDLAC data with one poverty line. PL stands for poverty line.

Sources: CEPAL STAT (<http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1>); World Bank Povcal Net (<http://iresearch.worldbank.org/PovcalNet/>); SEDLAC Dynamic Searches (<http://www.depeco.econo.unlp.edu.ar/sedlac/eng/dynamics-searches.php>); IPEA Data (<http://www.ipeadata.gov.br/>)

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

<sup>10</sup> See Barros et al. (2009)

#### 4. The decline in poverty and inequality since 2001

Since 2001, absolute poverty and income inequality in Brazil have been declining significantly. All four data producers agree on this trend. The reductions of absolute poverty (measured by each source's headcount ratio calculations) are especially evident from 2003 on. A portion of the recent fall in poverty and inequality can be directly attributed to income transfers through the relatively recent *Bolsa Família* program, implemented in late 2003. This section will take a closer look at poverty and inequality data for the period 2001-2007, describe *Bolsa Família* and its main characteristics, and analyze the results of the program.

Using 2001 and 2007 as two points of comparison, the recent reduction in poverty and inequality has been impressive. All four data sources show a large drop in the headcount ratio using their respective moderate poverty lines: the reduction varies from 7.2 percentage points (ECLAC) to 11.2 percentage points (World Bank).<sup>11</sup> The absolute population living in extreme poverty has decreased by 11 million people in spite of population growth (Barros et al., 2009). 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: for example, Barros et al. (2009) calculate that 62% of the drop in extreme poverty can be attributed to decreased income inequality.

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 growth in income of the bottom decile is nearly three times the national average and is

---

<sup>11</sup> Sources: CEPAL STAT (<http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1>); World Bank Povcal Net (<http://iresearch.worldbank.org/PovcalNet/>); SEDLAC Dynamic Searches (<http://www.depeco.econo.unlp.edu.ar/sedlac/eng/dynamics-searches.php>); IPEA Data (<http://www.ipeadata.gov.br/>)

higher than the average annual income growth of any other income group. In 2007, the Gini coefficient reached its lowest level in over 30 years (Barros et al., 2009).

Some of the recent reduction in levels of poverty and inequality is attributable to *Bolsa Família*, a conditional cash-transfer program (CCT). The magnitude of the program's impact on poverty and inequality will be analyzed below. *Bolsa Família* was introduced in October 2003 to organize and merge the various CCTs in existence, which had separate financing schemes, implementing agencies, conditionalities, 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 (Soares et al., 2009).

More than 11 million households in all Brazilian municipalities receive cash transfers from the *Bolsa Família* program (MDS, 2009); over 46 million people live in households that receive transfers from the program (Barros et al., 2009). It is extremely well-targeted (Soares et al., 2009) and only households with per-capita household income below the poverty line are eligible (MDS, 2009). Thus, there are almost no leaks to the non-poor and the policy is highly progressive. Eligibility and size of transfer are as follows. The base benefit transfers R\$68 to any family living in *extreme* poverty<sup>12</sup> (with or without children). Thus, families in extreme poverty instantly double (or more) their monthly income through *Bolsa Família*. 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

---

<sup>12</sup> The extreme poverty line is household per capita income of R\$70 per month

adolescent age 16 or 17 (up to 2 adolescents). Families in *moderate* poverty<sup>13</sup> are not eligible to receive the base benefit, but receive the variable benefits based on the number of children 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 (MDS, 2009).

Families are selected based on information entered by municipal civil workers into *CadÚnico*—a data collection system with the objective of identifying all poor families in the country. Municipal civil workers also verify that the conditionalities of the program are being met. The conditionalities 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 who are employed in child labor must attend provided socio-educational service sessions (MDS, 2009).

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 progress in inequality data to determine how much of an inequality reduction was determined by various transfer programs. While IPEA is a government agency, it is a separate government agency from MDS. In addition, 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*

---

<sup>13</sup> The moderate poverty line is household per capita income of R\$140 per month

*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 conditionalities of *Bolsa Família* should lead to higher investments in human capital among the poor, which will help to fight poverty 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 (for example, between expanding *Bolsa Família* and raising the minimum wage or non-contributory social security payments). Barros et al. (2009) decomposes the decline in inequality between 2001 and 2007 to determine the impact of *Bolsa Família* on inequality.

To isolate the contribution of *Bolsa Família* transfers to income inequality reduction, Barros et al. (2009) 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 determinates 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 Família* 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 Família* explained 13% of the overall decline in income inequality. That

number is substantial, considering that *Bolsa Família* transfers only made up 0.5% of total income in 2007 (Barros et al., 2009).

The decline of poverty and inequality in Brazil since 2001 has been impressive. There is no disagreement between the data sources that poverty and inequality have been falling 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 Família* 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 well-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: Economic Commission for Latin America and the Caribbean (ECLAC), the World Bank (WB), 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 gather their micro-data from a consumption-based household survey called the *Pesquisa Nacional por Amostra de Domicílios* (PNAD) that is completed nearly every year by IPEA.

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, ECLAC's higher values for inequality are most likely a result of their choice to allocate all of the difference in property income between survey data and national accounts to the richest quintile.

During the crises of 1990-1992, there are many inconsistencies in the trends of poverty and inequality. For example, the extreme poverty headcount ratio decreased according to ECLAC and the World Bank, increased according to SEDLAC, 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 reduction of inequality (and poverty) in Brazil from 2001. Since it is a well-targeted, absolutely progressive program without significant leakages to the non-poor, maintaining and ideally expanding the program should continue to have a direct impact on the reduction of poverty and income inequality in a country that is notorious for having high levels of inequity.

## References

- Barros, Ricardo Paes de, Mirela de Carvalho, Samuel Franco, and Rosane Mendonça. 2009. "Markets, the State and the Dynamics of Inequality: Brazil's case study." Discussion paper prepared for the UNDP Project Markets, the State and the Dynamics of Inequality: How to Advance Inclusive Growth, co-ordinated by Luis Felipe Lopez-Calva and Nora Lustig.
- CEDLAS (Centro de Estudios Distributivos, Laborales y Sociales). 2009. "A Guide to the SEDLAC Socio-economic Database for Latin America and the Caribbean." [http://www.depeco.econo.unlp.edu.ar/cedlas/sedlac/pdfs/guide\\_sedlac.pdf](http://www.depeco.econo.unlp.edu.ar/cedlas/sedlac/pdfs/guide_sedlac.pdf)
- CEPAL (Comisión Económica para América Latina y el Caribe). 2009. "Social Indicators and Statistics: Poverty and income distribution: Population living below the poverty and extreme poverty lines, by urban and rural areas." Technical note. [http://websie.eclac.cl/sisgen/SisGen\\_MuestraFicha.asp?indicador=182&id\\_estudio=7](http://websie.eclac.cl/sisgen/SisGen_MuestraFicha.asp?indicador=182&id_estudio=7)
- Chen, Shaohua and Martin Ravallion. 2008. "The Developing World Is Poorer Than We Thought, But No Less Successful in the Fight against Poverty." Policy Research Working Paper 4703. The World Bank.
- Coudouel, Aline, Jesko S. Hentschel, and Quentin T. Wodon. 2002. "Poverty Measurement and Analysis." World Bank.
- Elbers, Chris, Jean Lanjouw and Peter Lanjouw. 2003. "Micro-Level Estimation of Poverty and Inequality." *Econometrica*, Vol. 71, No. 1, pp. 355-364.
- Ferreira, Francisco H. G. and Ricardo Paes de Barros. 2005. "The Slippery Slope: Explaining the Increase in Extreme Poverty in Urban Brazil: 1976-96." In *The Microeconomics of Income Distribution Dynamics in East Asia and Latin America*, edited by Francois Bourguignon, Francisco H. G. Ferreira and Nora Lustig. Washington, D.C: Oxford University Press. Chapter 4.
- Ferreira, Francisco H. G., Phillipe G. Leite and Julie A. Litchfield. 2007. "The Rise and Fall of Brazilian Inequality: 1981-2004." *Macroeconomic Dynamics* (June): 1-32.
- Gasparini, Leonardo. 2004. "Different Lives: Inequality in Latin America and the Caribbean." In *Inequality in Latin America and the Caribbean. Breaking with History?*, coordinated by David De Ferranti, Guillermo Perry, Francisco H. G. Ferreira, and Michael Walton. Chapter 2. Washington, D.C: World Bank.
- IPEA (Instituto de Pesquisa Econômica Aplicada). 2002. "Metodologia na determinação das linhas de pobreza e indigência (por insuficiência no consumo de calorías por dia)." Technical note. <http://www.ipeadata.gov.br/ipeaweb.dll/ipeadata?SessionID=1013057>

000&Tick=1256151238740&VAR\_FUNCAO=RedirecionaFrameConteudo(%22iframe\_dados\_s.htm%22)&Mod=S

Milanovic, Branko. 2002. "True world income distribution, 1988 and 1993." *The Economic Journal* 112, no. 476: 51-92.

MDS (Ministério do Desenvolvimento Social e Combate à Fome). 2009. "Programa Bolsa Família." [http://www.mds.gov.br/bolsafamilia/o\\_programa\\_bolsa\\_familia](http://www.mds.gov.br/bolsafamilia/o_programa_bolsa_familia)

Soares, Sergei, Rafael Guerreiro Osório, Fábio Veras Soares, Marcelo Medeiros, and Eduardo Zepeda. 2009. "Conditional Cash Transfers in Brazil, Chile and Mexico: Impacts upon Inequality." In *Poverty and Inequality in Mexico and Selected Latin American and Caribbean Countries*, edited by Nora Lustig and Jacques Silber. Estudios Económicos, El Colegio de México.

Székely, Miguel and Marianne Hilgert. 1999. "What's Behind the Inequality We Measure: An Investigation Using Latin American Data." Working Paper #409. Inter-American Development Bank.

Székely, Miguel et al. 2004. "Do We Know How Much Poverty There Is?" *Oxford Development Studies* 32, no. 4: 523-558.

World Bank. 2009. *PovcalNet*. <http://iresearch.worldbank.org/PovcalNet/>

World Bank. 2008. "Quick Query, selected from the World Development Indicators." <http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=135>