

# **Brazil's Middle Classes \*\***

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## **Abstract**

This paper discusses the Brazilian middle class, its definition, evolution, profile, attitudes and durability. It describes the methodology that uses per capita household income derived from household surveys to determine economic classes. It gauges their respective aggregate trends and gauges individual income risks using longitudinal data. An income-based approach is only the beginning. This initial approach is integrated with subjective data to measure expectations and attitudes of different economic classes combined with a structural approach that takes into account the roles played by human, physical and social capital in the production factors, in terms of income generation and temporal allocation of resources. In all cases, income is the chosen numeraire by which all dimensions analyzed are projected. In the end of the article, all forms of measurement proposed – current income, consumption smoothing (permanent income), productive assets and subjective aspects – are combined to discuss the design of public policies aimed at the Brazilian middle classes.

# Brazil's Middle Classes

Marcelo Neri<sup>1</sup>

## Introduction

Brazil constitutes a useful example to discuss global middle class issues given its resemblance to the world's income distribution. As a consequence, a Brazilian middle class ends up being a global middle class. We identify here two ways of measuring the middle class: the so called new middle class, or C class, and other more fortunate one, closer to the U.S standards that inhabit the imagination of many in Brazil and elsewhere, here called the traditional middle class, or AB class.

This paper discusses the Brazilian middle class<sup>2</sup>, its definition, evolution, profile, attitudes and durability. It describes the methodology to determine economic classes and reveals that 44.7 million Brazilians joined the new middle class from 2003 to 2013 due to a growth-equity combination. Another 12.5 million joined the traditional middle class in the same period, which grew proportionally more and will grow even more than the C class as if the inclusive growth process continues, so that we can speak of a new AB class the same way we spoke about a new C class in the recent years. The article also outlines projections for economic classes and monitors them with more recent data that allows to interview the same households over time. It allows to gauge individual income risks.

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<sup>1</sup> Minister of SAE/PR (Secretariat of Strategic Affairs of the Presidency of the Republic) and Professor at EPGE/FGV (Graduate Programme on Economics at Getulio Vargas Foundation). Most of the results presented here were done at the Center for Social Policies (CPS/FGV). I would like to thank the excellent assistance of Luisa Melo, Samanta Sacramento and Tiago Bonomo.

<sup>2</sup> Refer to [www.fgv.br/cps](http://www.fgv.br/cps) for more details; see also Souza and Lamounier 2010; Souza 2010, OECD 2010, SAE 2012; Neri 1990 and 2011 and Neri et al. 2012

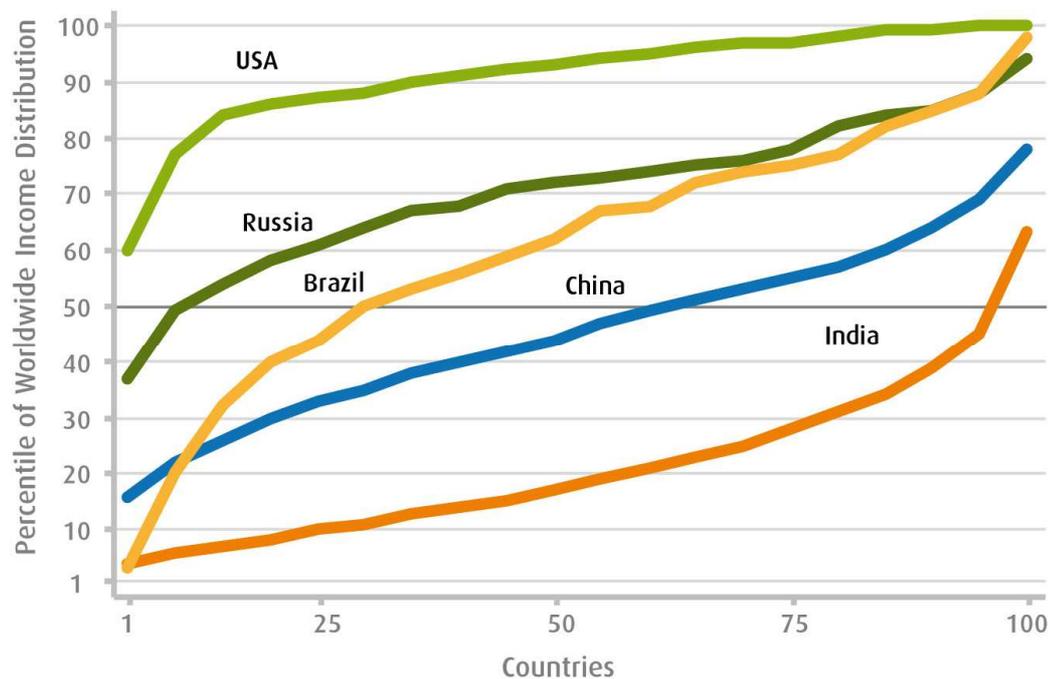
in terms of income generation and temporal allocation of resources. In all cases, income is the chosen numeraire by which all dimensions analyzed are projected. In the end of the article, all forms of measurement proposed – current income, consumption smoothing (permanent income), productive assets and subjective aspects – are combined to discuss the design of public policies aimed at providing durable prosperity and well-being to the Brazilian middle class.

The paper is organized in seven sections. The first section looks for parameters to define the middle class; it compares level and changes of the Brazilian income distribution with the ones found in worldwide. The second section defines the structure of Brazilian economic classes by using per capita current income, based on data from national household surveys. The third section uses this classification to map the performance of the economic classes observed until 2013 and their prospective performance. The fourth section addresses the sustainability of the Brazilian middle class, with the analysis of stocks of productive assets and consumer goods. The fifth section discusses the resilience of the middle class based on a more recent data from labor market surveys whose longitudinal aspect allows measuring the volatility of income at the household level. The sixth section explores subjective aspects of the middle class, including self-perceptions of class, the assessment of the quality of public services and expectations about the future. Subjective data from national budget surveys and international evidence on life satisfaction are used in this section. In the seventh section we discuss the design and implementation of public policies aimed at improving the Brazilian middle class, based on the elements covered in the previous sections. Special focus is given to the main channels of impact of such policies in determining the size, resilience and the level of welfare of the Brazilian middle class. The main conclusions are presented at the end.

## **1. Brazilian Income Distribution Parallels the World's**

Brazil constitutes a useful example to discuss an income based middle class on a global perspective because the Brazilian income distribution is relatively close to the world income distribution. This resemblance can initially be grasped from figure 1 below adapted from Milanovic (2011). The figure compares world income distribution with income distributions in selected countries. The different lines presented allow comparing the same relative position among different countries. For example, the poorest US vintile have 60% of the world population poorer than it, which means there is no vintile of the US income distribution touches the world median income. The US is richer than Russia that in turn is richer than China which is richer than India. This is true for any wealth line, or conversely any poverty line, used.

**Figure 1: World Income Distribution, BRICs and the US**

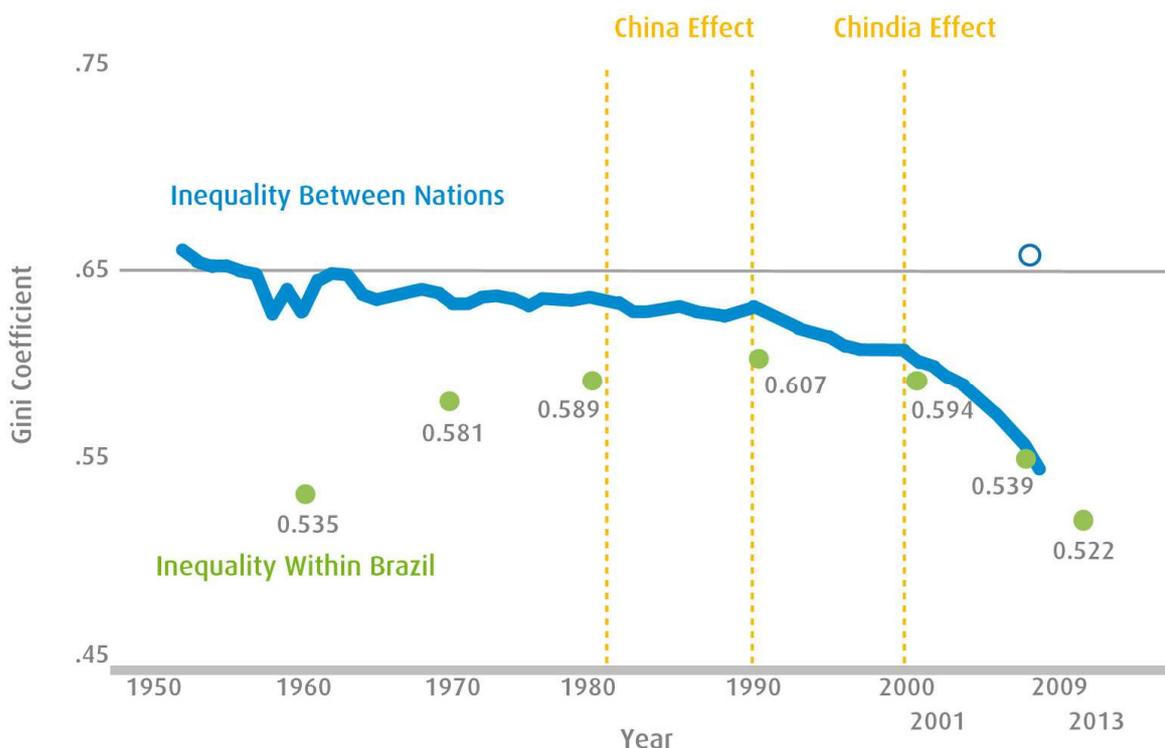


Source: Milanovic (2011)

But where is Brazil? Brazil is everywhere. The poorest Brazilians are as poor as the poorest in India while the richest Brazilians are not far from the wealthiest Russians. Brazilian income distribution is close to an imaginary line with a 45° slope, where world and Brazilian income distributions move hand in hand. In this sense, Brazil is a small world.

Branko Milanovic (2011) also calculates the world Gini coefficient, taking into account the differences in mean income among countries, weighted by each country's population. For the purposes of that exercise, zero inequality within each country is assumed. Both worldwide income inequality between countries and Brazilian inequality, illustrated in figure 2, did not move much between 1970 to 1990. Over that period, inequality, whether Brazilian or global, ran more or less parallel to the horizontal axis.

**Figure 2: Brazil and World Cross-Country Gini Coefficient (weighted by population)**



Source: Milanovic (2011) and Neri (2011)

Between countries inequality started to fall with the growth of China, going from 0.63 in 1990 to 0.61 in 2000. Its downward trend becomes sharper since 2000, when the Indian miracle joins the scene. China and India house more than half of the poor in the global community. The fact is that following the growth of China and India (here called "Chindia effect") in the 2000s decade, the world Gini fell to 0.54 by 2009. Total world inequality, which also includes within countries inequality that has grown in 60% of the worlds' nations, presents a somewhat milder downward trend in this later period. Its level for the latest year is pointed by the isolated dot in figure 2 above.

As for the Brazilian inequality decline, it has taken place strongly since the 2000s. After 30 years of high inertial inequality, that occurred after the great inequality rise of the 1960s associated with the so-called Brazilian economic miracle, the Brazilian Gini coefficient began to fall in 2001, going from 0.60 in that year to 0.539 in 2009; in 2012, it reached a level of 0.526, little below the starting point of the series initiated in the begin of the 1960s. To have an idea of the changes observed in the 2001 to 2012 period, the 5 per cent poorest in Brazil faced and income growth more than 300 per cent faster than the 5 per cent richest. These changes are quite close to the levels observed worldwide near those dates. The internal scale of distances among Brazilians is like a mock-up of that observed among the different nations of the world.

The Brazilian Gini coefficient, although one of the eighteen highest among 155 countries in the world, is reasonably close to the Gini coefficient that measures income inequality between countries. The movement of inequality in Brazil since the beginning of the 2000s is also relatively quite close to the one observed in the world.<sup>3</sup> The same comparison works for GDP level and trends in the 2000s. Brazilian GDP per capita PPP (adjusted for purchasing power parity) in 2012 was 93.7 per cent of the world average. The average GDP PPP growth rate in the 2001 to 2012 period was also reasonably close, 3.49 per cent for Brazil and 3.58

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<sup>3</sup> The same thing works for internet coverage according to the World Gallup Poll in 2010, validated also by Brazilian National Household Survey was almost the same for the two contexts.

per cent for the world according to the 2013 World Development Indicators from the World Bank<sup>4</sup>.

If the starting and end points of Brazilian and worldwide inequality and income levels and trends are equivalent, Brazil is not just a representative photo, but also a representative movie of the world at the dawn of the new millennium. The saga of the Chinese and Indians on the way to better living conditions is similar to that of Brazilian illiterates, blacks and Northeasters.

As a result of the resemblance between the Brazilian and world income distributions, the definition of an income-based Brazilian middle class, or a Latin American middle class for this matter, in fact delivers a global middle class. The Brazilian middle class defined here has substantially lower income than the usual definition of the US middle class, namely two cars, two dogs and a swimming pool, which do not characterize the world middle class as well.

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<sup>4</sup> Available at: <<http://data.worldbank.org/data-catalog/world-development-indicators>>.

## **2. Defining Economic Classes**

Our methodology in defining the middle class draws upon the literature on social-welfare measurement. Sociologists do not need to worry because we talk about economic class and not social classes. After classifying people in household per capita income brackets (as explained in the next section), perceptions and assets are incorporated into the analysis. An income-based view of the middle class is only the beginning. Income assessments are combined with a structural approach that takes into account the roles played by human, physical and social assets. The permanent income measure is then calculated, converting stocks of assets into income flows. Comparing current and permanent incomes allows us to gauge the sustainability aspects of the income distribution. The assessment of idiosyncratic income risks based on longitudinal data also helps to assess the durability of the different economic classes.

The structural approach pursued here deals with concrete relations between income flows and stocks of assets by looking at households as producers and consumers. The producer's side is based on the field of labor economics, analyzing not only wages and employment but also entrepreneurship. Employers and self-employed are workers but they are also firms that live off profit. They are capitalists in a sense, though in most cases without capital, and they live with the associated risks of being a capitalist and most likely without wealth.

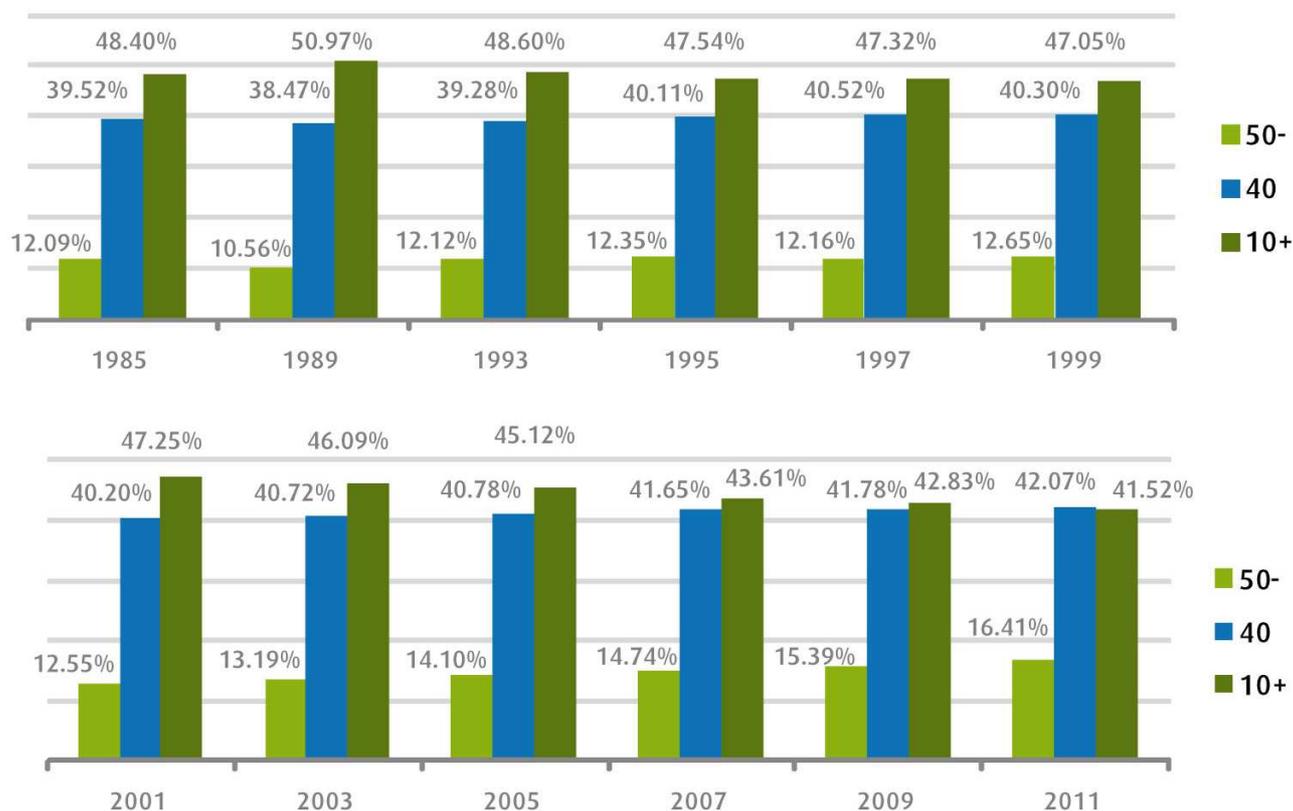
Our look at households also draws upon the literature of consumption and temporal choice, which is as weak in Brazil as our family savings rates. This perspective helps to go beyond the flat cross-section portraits collected at certain moments in time in favor of visualizing the development of the course of people's lives in a cinematic way. We capture information regarding uncertainties, habits, altruism, capital market imperfections and myopia. If a family does not plan for the future, for example, it will reap the consequences of not doing so over the years.

Flows and stocks of money may or may not bring happiness. In our studies we pair the assessments and expectations of people in relation to their lives as

developed in the literature on subjective well-being, which has lately caught the attention of economists.

**From Relative Income Groups to Absolute Income Classes** - Figure 3 presents a simple and straightforward relative measure of economic classes by looking at three income groups between 1985 and 2011: the bottom half of the income distribution (50 per cent -), the top decile (10 per cent +) and the intermediary group (the others 40 per cent).

**Figure 3: Evolution of Income Groups Participation (Bottom 50 per cent, Mid-40 per cent and Top 10 per cent)**



Source: PNAD/IBGE microdata

In 1989, the historic peak of Brazilian inequality, the poorest 50 per cent earned 10.56 per cent of total income while the richest 10 per cent earned 50.97 per cent; the intermediary group earned a little less than its 40 per cent share in the population. During the 1970s, 1980s and 1990s, Brazilian inequality remained steady: the poorest 50 per cent received around 10 per cent of income, mirroring the richest 10 per cent, who received close to 50 per cent of the aggregate income. Group shares begin to systematically change only after 2001. In 2011, the 40 per cent intermediary group share overtook the top 10 per cent share.

Indeed, according to this approach Brazil's middle group (mid 40 per cent) is bordered on one side by an 'India' (the bottom half), and on the other by a 'Belgium' (top 10 per cent), inspired by the "Belindia" acronym created by Edmar Bacha in the 1970s. The absolute definition of middle class proposed below shares some attributes with this relative definition, as both gives us a group that is above the median income of the distribution and earns on average close to the mean income of the Brazilian society.

The categorization of the Brazilian relative income distribution reported above is inspired by earlier studies on Latin American inequality carried out in the second half of the 1990s, coordinated by Sam Morley. From these studies we note the high gross contribution of the top 10 per cent in Brazilian and Latin American income inequality as measured by Theil-T index decomposition<sup>5</sup>. The initial choice of absolute income brackets for the definition of economic classes used in this work followed this lead. Income cut-offs points were chosen so to maximize the explanatory power of the contribution of the respective income classes proposed to the Brazilian inequality, using data from the 2002-2003 period. Indeed, table 1 shows that our economic class categorization has a better explanatory power, using several databases, relative to a definition based on three groups with the same initial size.

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<sup>5</sup> See Neri and Camargo (2000). David Lam studies makes observations on similar lines based on the relative status of income of the highest decile in Brazil vis-à-vis the rest of the distribution as compared to the USA, which is not a particularly egalitarian country.

## Table 1: How Much Income Inequality is Explained by Economic Classes?

*Contribution between income groups in total inequality THEIL-T*

	ECONOMIC CLASSES CPS/FGV	EQUAL GROUPS (1/3)
PME 2002-2003	76.71%	59.34%
PNAD 2003	79.71%	59.91%
PNAD 2009	74.29%	57.96%
POF 2008-2009	71.40%	59.29%

Source: IBGE microdata

### Polarization Measures

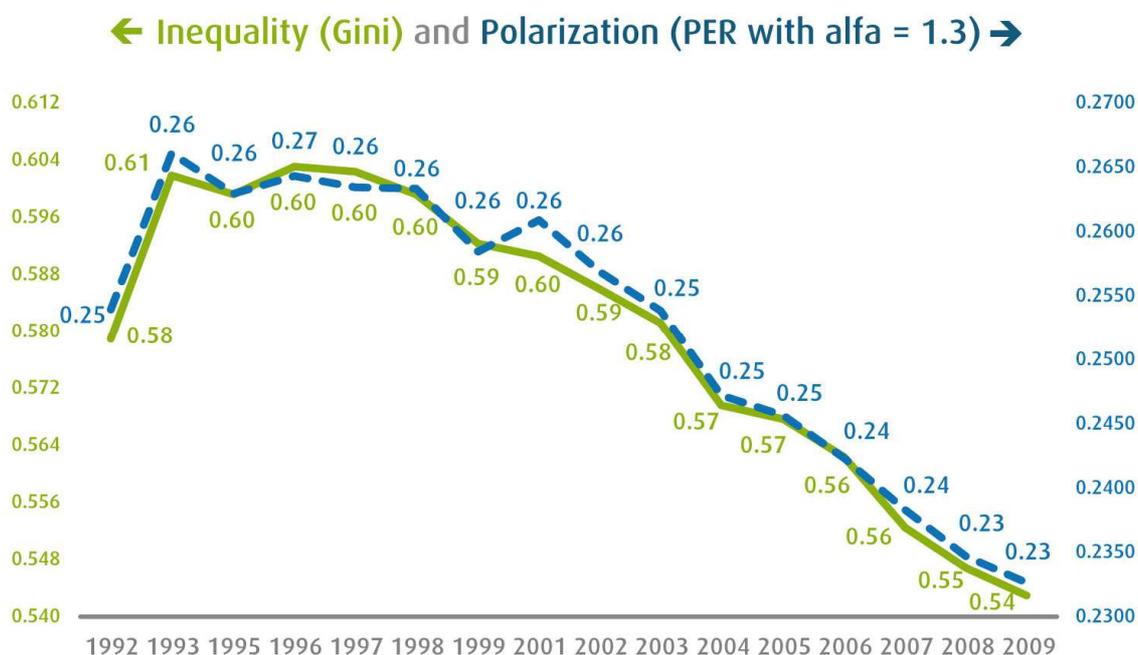
This subsection addresses relative and absolute measures of economic classes. We move from a relative to an absolute measure fixing the lines in real terms for further periods. Our definition of middle class income brackets is theoretically consistent and empirically close to that determined by the extended polarization concept proposed by Esteban, Gradin and Ray (2007, called EGR). The EGR strategy generates, in a more general setting of polarization measures, endogenously cuts of the observed income distribution. The chosen cuts obtained are those that maximize the criterion of polarization. That is, they are the ones that best distinguish the income groups in order to make the internal differences of these groups as small as possible and on the other hand maximize the differences between these groups.

## BOX 1: Polarization and Inequality

In order to differentiate polarization from income inequality per se, consider the following useful example, adapted from Gasparini *et al.* (2008). Consider a simple society with six people called A, B, C, D, E and F, with incomes of R\$ 6, 5, 4, 3, 2 and 1, respectively. Suppose that one Real is transferred from D to F and from A to C. Inequality indices that respect the so-called principle of transfers will necessarily decline<sup>1</sup>. After these distributive changes, we will have a perfectly divided society in two internally homogeneous groups: an income of R\$ 2 for D, E and F and an income of R\$ 5 for A, B and C. Although less unequal, after these progressive transfers, society has become more polarized.

In the figure below, we apply the Esteban and Ray (1994) measure of polarization, labeled PER and shown on the left axis. The graph illustrates that Brazilian society grows less polarized from 1998 onwards. In general, inequality (as measured by the Gini coefficient) and polarization move in the same direction. Polarization (left scale) has a milder fall than the inequality before 2001, but the reverse occurs thereafter.

### <--Polarization (PER with $\alpha=1.3$ ) and Inequality (Gini)-->



Source: PNAD/IBGE microdata

<sup>1</sup> This principle tells us that if we transfer income from the richest to poorest without changing the ranking between people, the measure of inequality should fall.

How does our initial approach (using 2002-03 data) compare to the results derived from the EGR methodology<sup>6</sup>? In first place, the combination of our economic classes D and E results almost perfectly in the bottom EGR stratum, corresponding to the 52.3 per cent poorest against 52.6 per cent in our criterion, a negligible difference. Second, our central economic class based on national household survey data is four percentage points smaller than the intermediate stratum produced by the EGR methodology (34.95 per cent versus 38.95 per cent). As a result, our classes A and B differ from the top EGR stratum. We call this difference residual class B2 to illustrate the move from the C class to the EGR middle stratum.

Next, we apply the EGR results within these initial classes to further divide them into even finer subgroups, in addition to using other institutional parameters, including the official parameters of poverty and extreme poverty lines. Let us begin with the three large groups (AB, C, and DE classes). Similarly, we applied the EGR methodology of three stratum in our AB class, resulting in B1 class with 4.31 per cent, A2 class with 2.84 per cent and A1 class with 1.28 per cent of the population, respectively. Within the lower stratum of the EGR, taking advantage of the convergence of the values, we subdivided the D and E classes using the traditional Brazilian poverty line, which is close to the highest eligibility income allowed to be a beneficiary of the Bolsa Família Program. We use a similar rationalization adopting R\$70.00 - which is the lowest benchmark value of the Bolsa Família and was adopted as the national poverty line under the Brazil Without Misery Plan - to define the division between the E1 and E2 classes. This value amounted, in mid-2011, for the extreme poverty line of U\$1.25 PPP per day, used in the first of the UN Millennium Development Goals.

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<sup>6</sup> Cruces, López Calva and Battistón (2009) apply the EGR to six Latin American countries, including Brazil. One difference between their approach and ours is that we use the relative EGR measure to calculate the brackets between classes, and then keep the lines constant in real terms over time to generate absolute measures of economic classes.

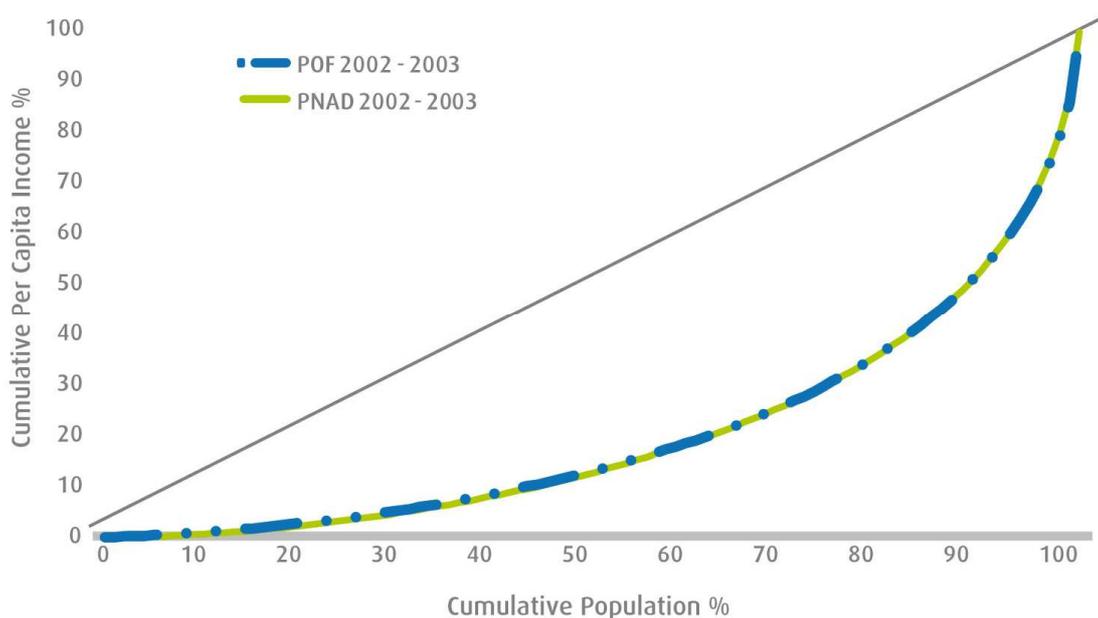
**Reconciling Household and Consumer-Expenditure Survey Data** - This empirical exercise uses the Brazilian National Household Survey (PNAD), correcting for internal differences of cost of living and imputing unreported (missing) income, estimating a separate Mincer equation for each year captured in the data. In this way, we maintain the proportionality of the sample, keeping it comparable to the population from which it is drawn. We can therefore combine these data with actual changes in the population of each class. All calculations are based on per capita household income, excluding non-members (such as domestic servants or their kin living in the household).

The PNAD is the key reference in studies on the Brazilian income distribution. A better understanding of the economic circumstances of the poor, however, requires building a bridge between the PNAD and the Household Budget Survey (POF), both undertaken by the Brazilian Institute of Geography and Statistics (IBGE). The POF is a less-frequent survey, more complete than the PNAD in terms of its income questionnaire because it includes the non-monetary income, very important to the poor. The income from real and financial assets that affects to a greater proportion the wealthier segments is also better captured by the POF survey. By a fortunate coincidence these misreporting problems cancel each other out in terms of income inequality, so that the POF generates levels of inequality very close to those found using PNAD data, as shown by the near overlapping of the Lorenz curves of the PNAD surveys accumulated from 2002 and 2003 and from the 2002-03 POF survey, illustrated in figure 4<sup>7</sup>. Complementarily, the Gini coefficients of the two surveys are equivalent, with 0.591 for POF and 0.594 for PNAD. A similar result can be found when looking at the Theil-T indexes: 0.7149 for POF and 0.7145 for PNAD. On the other hand, the real per capita household mean incomes (deflated for the same date) are very different - R\$697 for POF and R\$485 for PNAD – a 43 per cent difference.

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<sup>7</sup> Barros and Neri (1995) report a similar result using POFs and PNADs from 1987-88.

**Figure 4: Household per capita income inequality – comparing POF and PNAD 2002-03 Lorenz Curves**



Source: PNAD/IBGE and POF/IBGE microdata

**Class definitions** - Our economic classes were defined by the initial period relative distribution, so given the almost identical inequality, we only need to multiply the PNAD income brackets by a POF factor, since this basis proves to be a more correct source of the level of income. After such adjustments, household income in the middle C class lies between R\$ 2004 and R\$8640, with an average income of R\$4912 at January 2014 prices, adjusted by the local cost of living. Table 2 summarizes the upper and lower cut of income levels for each class.

**Table 2: Economic classes defined by total household income (R\$)  
(calculated originally from per capita household income)**

ECONOMIC CLASSES	LOWER LIMIT	UPPER LIMIT
Class E	0	1,254
Class D	1,255	2,004
Class C	2,005	8,640
Class B	8,641	11,261
Class A	11,262	-

\* in current R\$ January 2014 prices

Source: PNAD and POF/IBGE

## BOX 2: Where is the traditional middle class? – Census 2010

**Ranking AB Class:** The top 5 among 5568 municipalities in percentage of population in AB class are: Niterói with 42.90 per cent, São Caetano do Sul with 42.55 per cent, Florianópolis with 41.61 per cent, Santos with 39.25 per cent and Vitória with 39.22 per cent. These are also among the 6 municipalities with highest coverage of internet access in the household, university diploma and mean income. The indexes of these municipalities are above the regression line of mean income against share of population in AB class, overcoming the country's standard. These cities are among the HDI record holders according to the previous Census, indicating that higher AB class is associated not only with higher income, but also better health and education indicators. These cities also dominate the ranking of A1 class (with incomes above R\$14,500) starting with Niterói with 17.1 per cent in this segment. São Paulo municipality is in 17<sup>th</sup> but holds neighborhoods with the highest share in A class (is the case of Moema with 61 per cent).



**ABC** - Westfália, in Rio Grande do Sul, has the highest share with 94.2 per cent in classes ABC. All 30 cities with the highest share of classes ABC are in the southern region and in the State of São Paulo.

**ABC classes in Brazil (%)**

**A1 class in São Paulo municipality (%)**