

Brazil's Middle Classes

Marcelo Côrtes Neri

**ESCOLA DE PÓS-GRADUAÇÃO EM ECONOMIA DA FUNDAÇÃO GETÚLIO VARGAS (EPGE/FGV) E
SECRETARIA DE ASSUNTOS ESTRATÉGICOS DA PRESIDÊNCIA DA REPÚBLICA (SAE/PR)**

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 Neri¹

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 class², 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.

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

¹ 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.

² Refer to 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

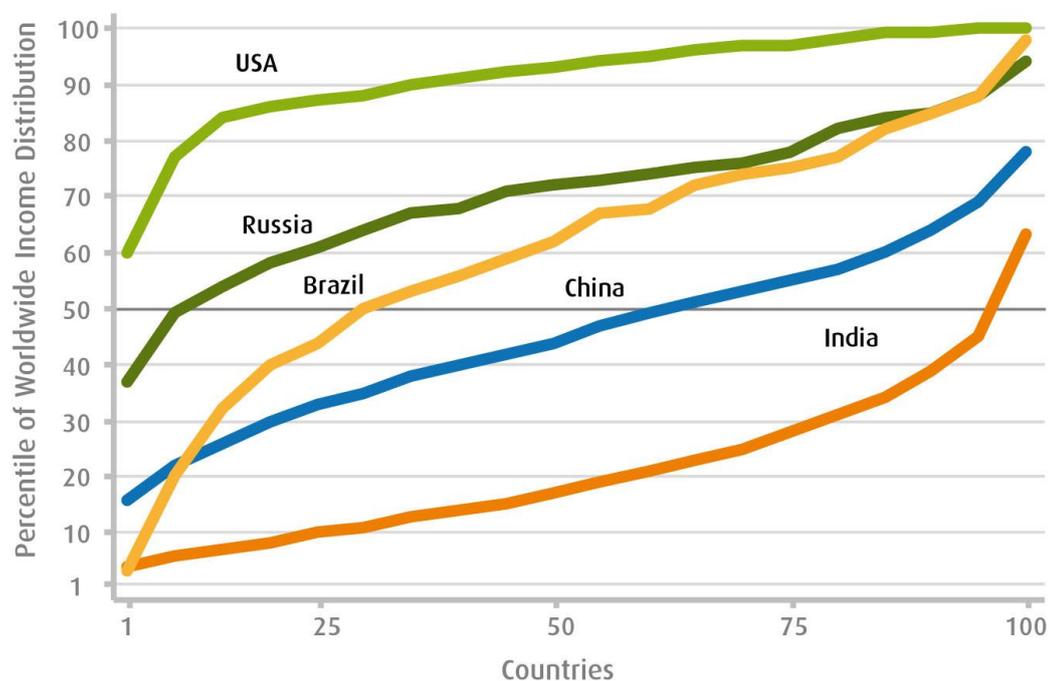
account the roles played by human, physical and social capital in the production factors, in terms of income generation and temporal allocation of resources. In all cases, income is the chosen numeraire by which all dimensions analyzed are projected. In the end of the article, all forms of measurement proposed – current income, consumption smoothing (permanent income), productive assets and subjective aspects – are combined to discuss the design of public policies aimed at 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 form 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

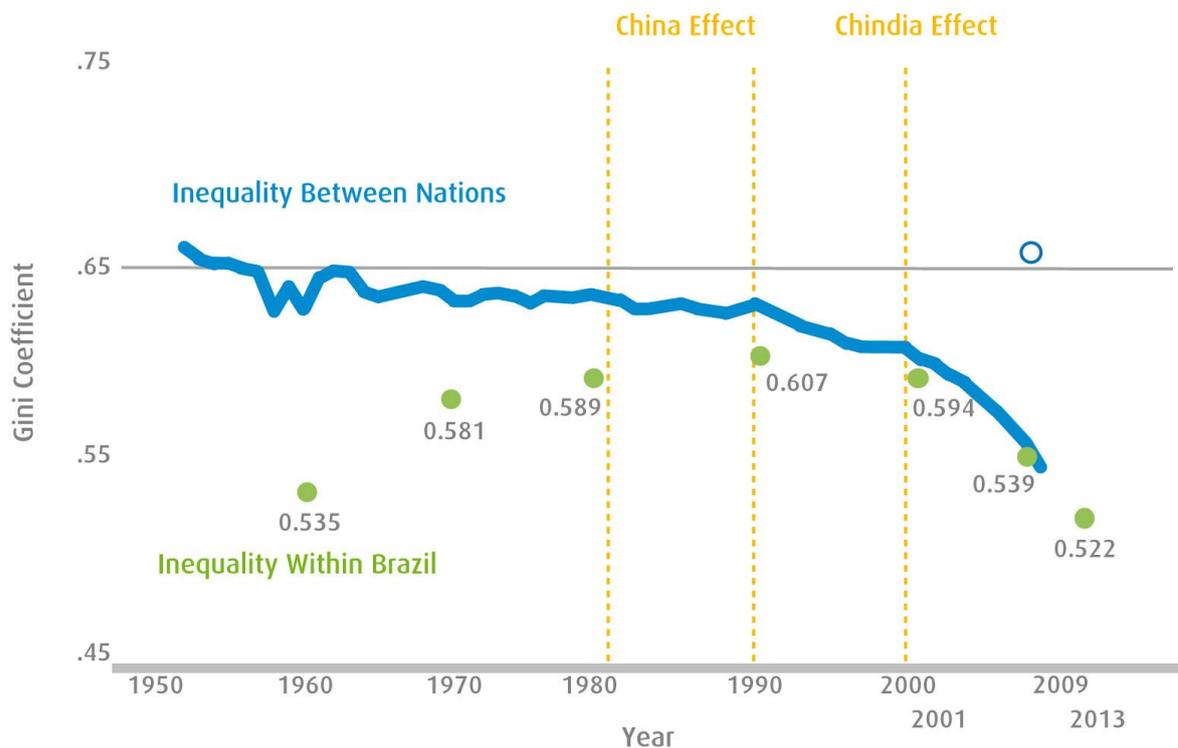


Source: Milanovic (2011)

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.³ 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

³ 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.

the 2001 to 2012 period was also reasonably close, 3.49 per cent for Brazil and 3.58 per cent for the world according to the 2013 World Development Indicators from the World Bank⁴.

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.

⁴ 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.

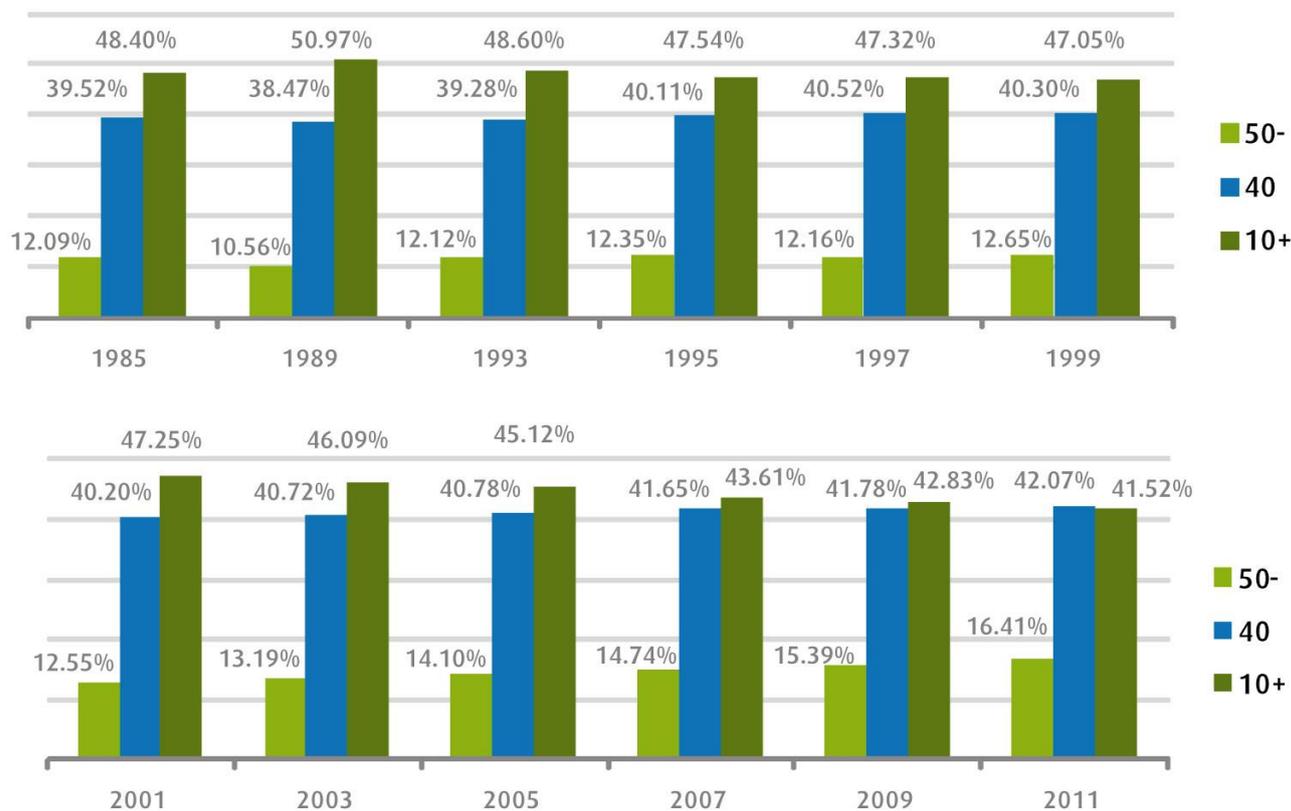
The structural approach pursued here deals with concrete relations between income flows and stocks of assets by looking at households as producers and consumers. The producer's side is based on the field of labor economics, analyzing not only wages and employment but also entrepreneurship. Employers 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 decomposition⁵. 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.

⁵ 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

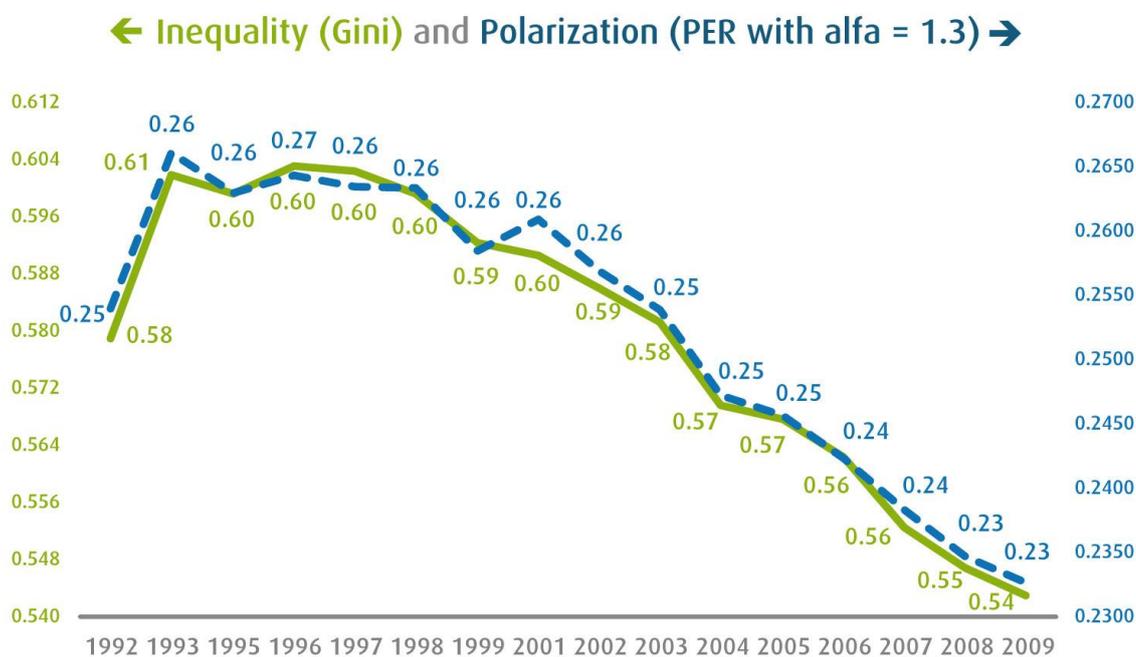
This subsection addresses relative and absolute measures of economic classes. We move from a relative to an absolute measure fixing the lines in real terms for further periods. Our definition of middle class income brackets is theoretically consistent and empirically close to that determined by the extended 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 decline¹. 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

¹ 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 methodology⁶? 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 strata 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.

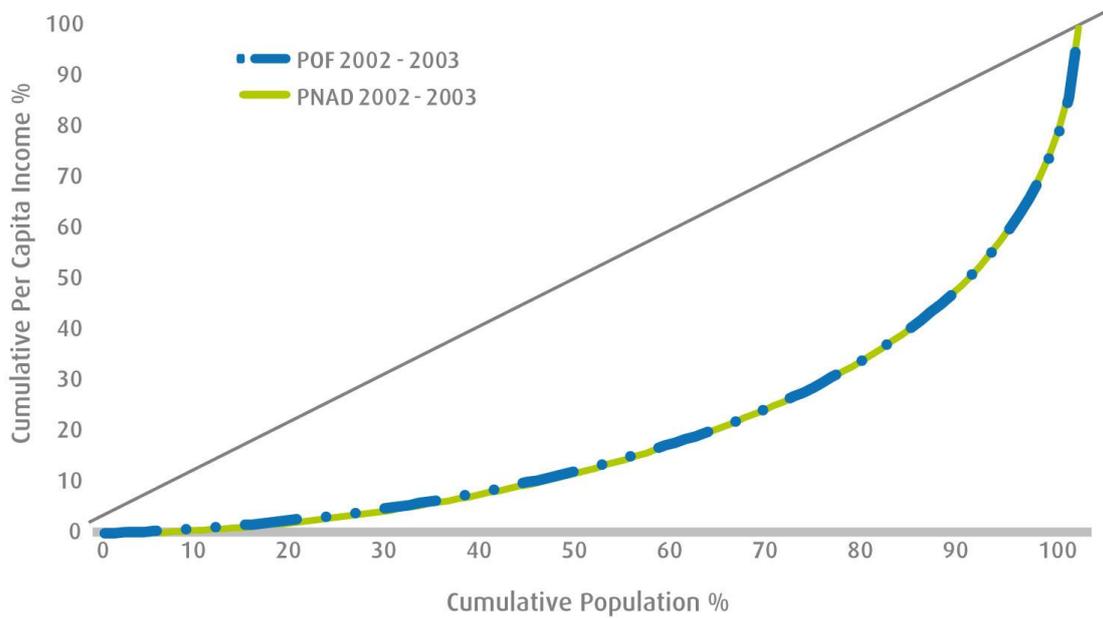
⁶ Cruces, López Calva and Battistón (2009) apply the EGR to six Latin American countries, including Brazil. One difference between their approach and ours is that we use the relative EGR measure to calculate the brackets between classes, and then keep the lines constant in real terms over time to generate 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 4⁷. 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.

⁷ 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)**

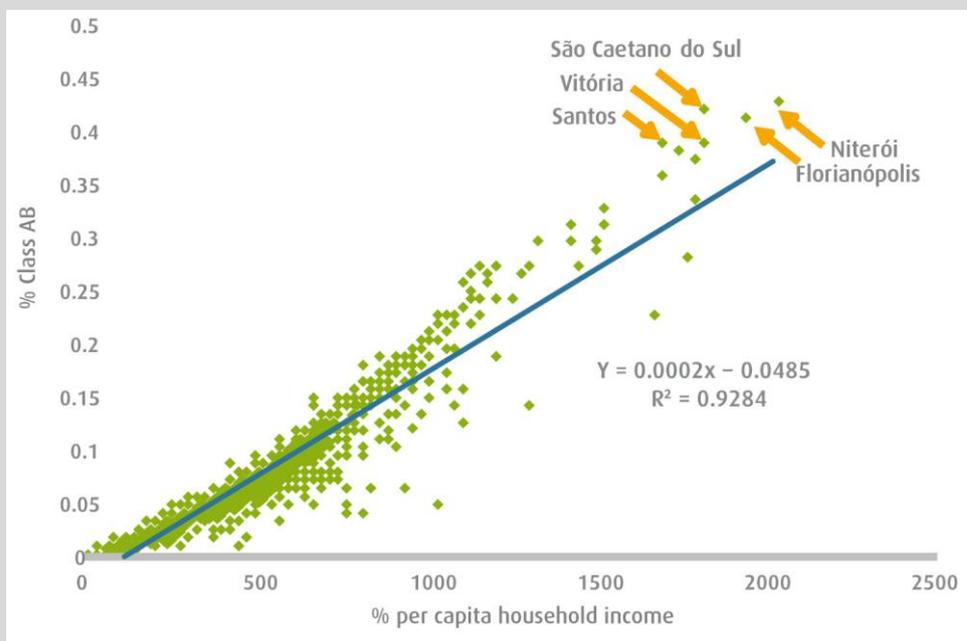
ECONOMIC CLASSES	LOWER LIMIT	UPPER LIMIT
Class E	0	1,254
Class D	1,255	2,004
Class C	2,005	8,640
Class B	8,641	11,261
Class A	11,262	-

* in current R\$ January 2014 prices

Source: PNAD and POF/IBGE

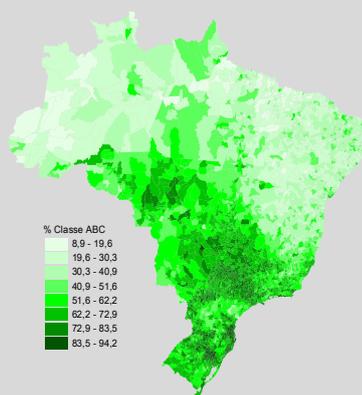
BOX 2: Where is the traditional middle class? – Census 2010

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 Niteroi with 17.1 per cent in this segment. São Paulo municipality is in 17th but holds neighborhoods with the highest share in A class (is the case of Moema with 61 per cent).

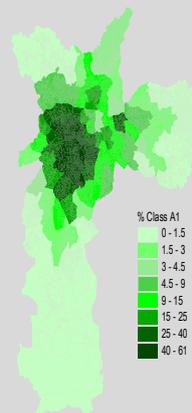


ABC - Westfália, in Rio Grande do Sul, has the highest share with 94.2 per cent in classes ABC. All 30 cities with the highest share of classes ABC are in the southern region and in the State of São Paulo.

ABC classes in Brazil (%)



A1 class in São Paulo municipality (%)



Source: Census 2010/IBGE microdata

3. Economic Classes Performance and Forecasts

We forecast the size of the economic classes in Brazil up to 2014 by extrapolating the available data. During the last years, major changes occurred in social welfare, results of a rare combination in Brazil of sustained growth and inequality reduction.

Forecasts of economic classes' size

We projected both growth and inequality reduction until 2014 based on trends of the 2003-2009 period, adjusted by what was observed in 2012⁸. This allows us to forecast the number of people in each economic class. The last step is to adjust each growth factor applied to include inequalities in recent income expansions within Brazilian states. For each state, people were arranged by income and then divided by 50 brackets. The initial year of reference was 2003. It was observed how each bracket evolved. The relative (not absolute) changing pace observed was extrapolated for the forecast period.

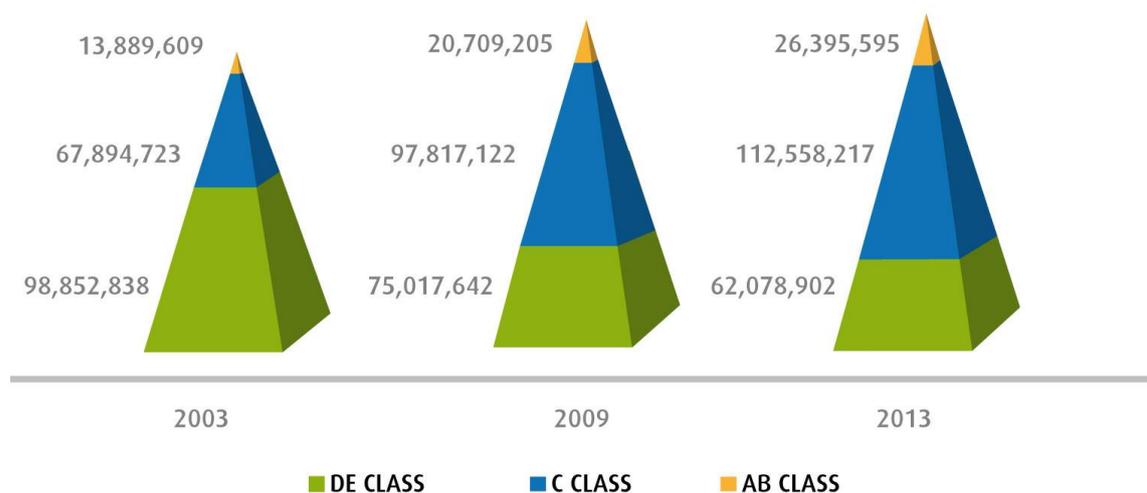
Past and perspectives

Class pyramids, whose height measures population size, can be used to illustrate past and prospective aspects and trends; these are shown for several years in figure 5. If we continue the trend of income growth and inequality reduction observed in each Brazilian state since 2003, we will have around 119 million people in class C by 2014 and 29.5 million in classes AB, compared with the 67.9 million and 13.9 million, respectively, observed in 2003. This means that in the period 2003-2014, 51.1 million people will have joined class C, and another 15.6 million the AB classes. This would total 66.7 million, more than the population of the United Kingdom, new members of the upper classes of the Brazilian income distribution. This is remarkable, considering the shrinking consumer markets in the developed countries as a result of the international crisis still ongoing. Between 2013 and 2014, the population of classes A and B

⁸ A few issues regarding changes in measurement related to historical trends, as well as the magnitude of the resumption of growth in the 2003-2013 period, depend crucially on the database used. Even after upward revisions in gross domestic product (GDP) growth in the national accounts, cumulative growth rates are more modest compared to those observed in household survey data. This will be addressed later in this section.

will grow proportionately more than class C: the cumulative growth rates are 11.86 per cent and 5.72 per cent, respectively. From 2003 to 2014, despite population growth, the absolute population of classes D and E will decrease by 44.6 million, dropping to almost half of their initial size: Brazil in 2003 had around 98.87.8 million in the D and E classes, compared to 54.2 million projected for 2014⁹.

Figure 5: Population pyramid and economic classes 2003, 2009 and 2013



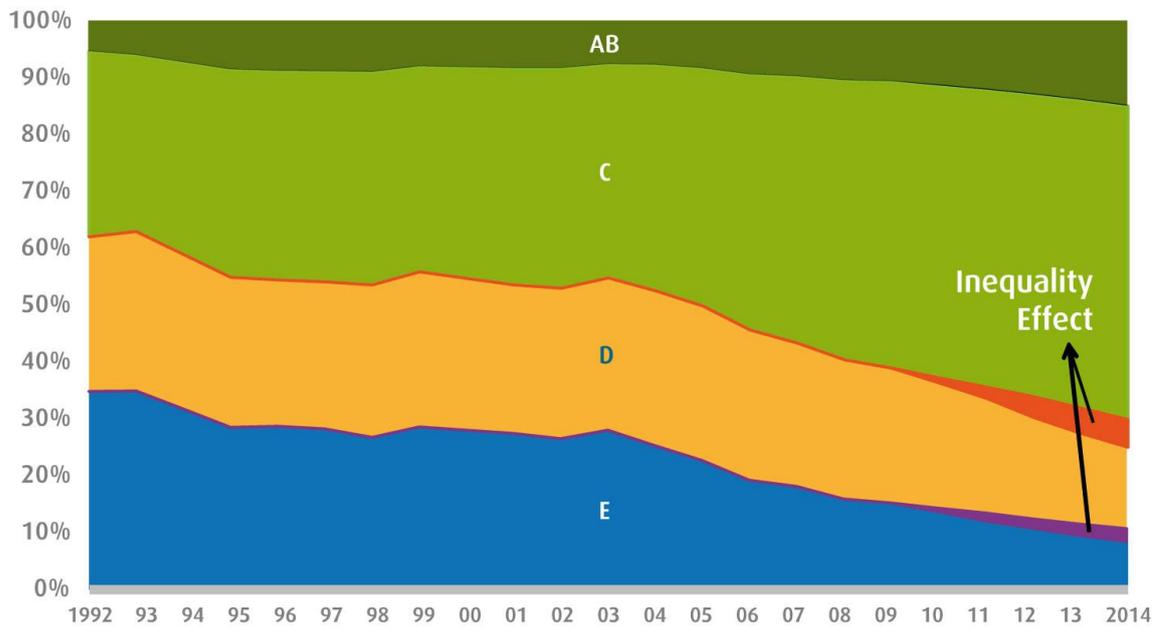
⁹ In the estimation, data from 2003 is adjusted to compensate the lack of rural areas from the North region in PNAD. There were also changes in the sample weights in PNAD and revision of the population forecasts by IBGE.

Evolution of population shares by Economic Class

Our projections take into consideration changes in inequality; namely, we forecast on a differentiated basis the growth for each sub-group of income, and regional trends for each of the 27 Brazilian states. If the state-level rates of inequality reduction observed since 2003 are maintained, the proportion of individuals in C class will have grown from 37.56 per cent in 2003 to 56.89 per cent in 2012. The observed C class share after the release of the PNAD 2012 was 55.47 per cent (totaling 42 million new members of the C class since 2003), a difference of only 1.42 percentage points lower despite the slowdown in the growth of GDP, which leads to a revision of the forecasts going forward. However, we are interested in a longer period, for 11 years. In a neutral scenario with no changes in the income distribution terms within the states, the middle class will increase in 2014 to 56.22 per cent of the population. If however growth in income were to go hand in hand with the drop in inequality, the new middle class will reach 58,68% of the population.

Note that growth rates of AB class are already higher than those of the C class and we forecast that this discrepancy will increase in the future. In the coming years we will be discussing the new AB class just as we are discussing the new C class today. Figure 6 illustrates the broad picture of the evolution of population shares of the various economic classes. The figure shows the composition of the economic classes from 1992 to 2014, adjusted by the changes in inequality. In the same figure we show these same forecasts accompanied by a darker area, indicating the specific effect of maintaining the level of inequality within states keeping the growth rates among Brazilian states. In other words, this is a scenario of balanced state-level growth. That is, we contrast the scenario of uniform income variation within states with one that forecasts changes in inequality within states.

Figure 6: Class composition - 1992 to 2014*

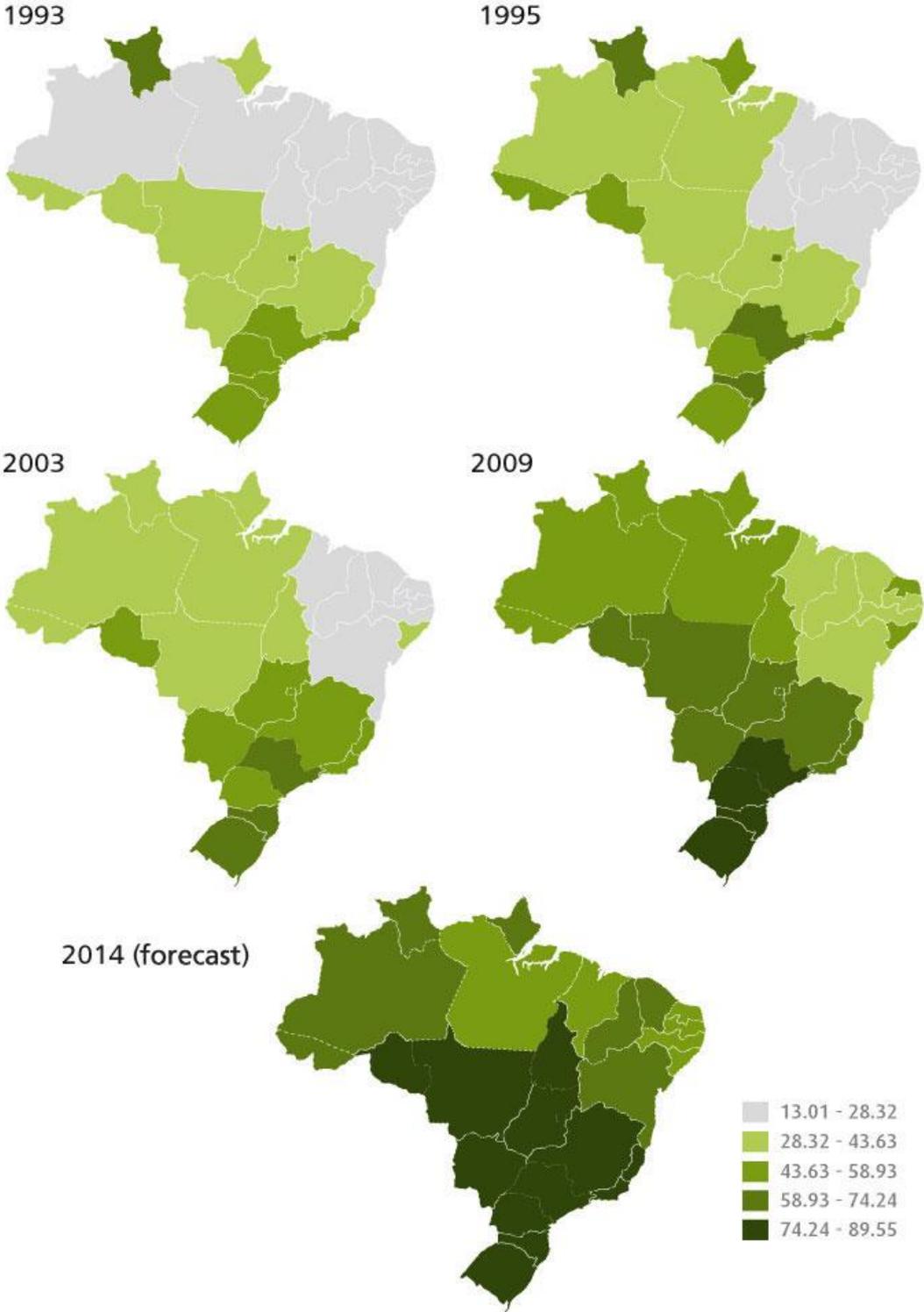


*class growth forecasted from 2010 to 2014

Source: PNAD/IBGE microdata

Figure 7 illustrated below presents state-level maps of the evolution of consolidated ABC classes' population shares, incorporating within-state changes in inequality. The 2014 forecast shown that in all states south of the Northeast and North regions, at least three-quarters of the population is in the new middle class or above.

FIGURE 7: BRAZILIAN STATE MAPS - Evolution of Class ABC shares



Source: PNAD/IBGE microdata

4. Sustainability of Living Conditions

A central question posed by this article - and indeed posed by members of the new middle class - is to what extent this new economic class can drive economic growth by dint of its consumption potential. The answer to this question depends on the new middle classes' capacity to generate income in a sustainable way. We address each of these questions here using PNAD data.

Consumption Potential and Income-Generating Ability

Economic classes E, D, C, B and A can be described in terms of their consumption potential. The so-called 'Brazil Criterion' (*Critério Brasil*) compiles information on the number of consumer durables a household owns (TVs, radios, washing machines, refrigerators and freezers, video cassette or DVD machines), as well as the number of bathrooms and if it has a domestic servant, among other indicators. This criterion estimates the weights based on a classical Mincerian income equation (log of total household income) and classifies people according to their goods and respective weights of each. We thus create a consumption potential index that uses income metrics as a connecting thread and unit of measurement. Income is easy to use as a *numeraire*, because it is part of our daily lives. After defining the model, we quantify the indicator for each characteristic, especially for the economic classes based on current income. A reader initiated in economics may relate the permanent income concept created by Milton Friedman, in 1957, to our potential consumption indicator. Since the seminal work of Robert Hall (1978), we have known that current consumption should contain all the information about future family consumption standards.

People are not intrinsically poor, rich or middle class. They find themselves in these positions in different moments of their life cycle. We must test to what extent income and consumption levels will be sustainable in the future. Besides measuring consumption potential based on a large amount of information from

household surveys, we propose a complementary conceptualization to measure how the Brazilian middle class evolved from the producer standpoint, using an income equation that is a function of the productive assets of all family members. That allows us to observe the ability to maintain a middle-class lifestyle by generating and maintaining an income stream over time. The innovation in our methodology is to observe aspects of middle class behavior beyond consumption, incorporating elements connected to family income generation. Those aspects include, for instance, the moment when husband or wife finds a formal job, or when a child enters college, or when the family buys a computer. We then connect those social markers to the demand for certain public social services that were at some point a near state monopoly, such as social security, education, health and home financing. We quantify the production side using income metrics from the Mincerian income equation, which permits integration with the remaining consumer characteristics and income itself.

Choice of Variables - We explored the wide range of information related to the possession and use of assets based on PNAD data, using a model of variable selection according to the level of statistical significance in explaining per capita household income. The family/household is the basic unit of analysis under the hypothesis of its members' solidarity who generally share their earnings much like the 'all for one and one for all' of Alexandre Dumas' *Three Musketeers*. This assumption therefore elides elements of intrahousehold inequality, which are surely important to the welfare of many individual Brazilians. We omitted socio-demographic and spatial variables in our analysis of per capita income so that we could afterwards infer the equivalent income of households with different characteristics. In terms of statistical significance and explanatory power, the number of toilets, followed by access to mobile telephones, come well before years of schooling of the reference person -- typically the highest explanatory power in researches on income inequality and poverty. Obviously, we are not attempting to establish a causal relation between different variables of stock and income flow, because this is a two-way relation. In our interpretation, we will identify variables that are more related to the generation of income. The exercise helps to gauge the structure of the model that assigns the concept of

equivalent income and its elements in terms of consumption potential and income generation capacity.

Consumers versus Producers: Sustainable or Not?

The wealth of data about asset inventories, grouped under two perspectives — consumer and producer - allows us to divide Brazilians into worker ants and consumerist cicadas, using one of Lafontaine's fables as a metaphor. We showed that, in the picture, Brazilians look more like cicadas, but the movie over the last years shows a gradual metamorphosis towards ants. The progress in the Brazilian ability to generate income increased, according to our index, 31.2 per cent from 2003 to 2009, while potential consumption increased 22.59 per cent. These data reveals that the producer's side increased 38 per cent faster than the consumer's. During the crisis year of 2009, these indexes increased 3.05 per cent and 2.49 per cent, respectively.

As a complement, the survey details the importance of different income sources for the advance in social indicators in the country. Results indicate that, despite the strong growth of income from social programs and retirement payments linked to the minimum wage, the growth of labor income is close to the significant growth in total income (4.72 per cent) during the 2003-2009 period: average labor income increased 4.61 per cent per year per Brazilian, which corresponds to 76 per cent of the mean income in the country, providing a sustainable basis for living conditions in addition to official income transfers.

Box 3: Principal Components Approach

We apply an alternative methodology to define class based on principal components. In essence, the principal component analysis reduces the variables for a group of artificial variables, which is accomplished through turning redundant variables into new variables that may be used in subsequent analysis as forecasting variables in various types of regression. Technically, a principal component may be identified as a linear combination of optimally weighed variables.

The first component extracted from a principal component analysis would be responsible for a maximum amount of the total variance of the observable variables. The second component extracted would account for a maximum variance of the group of data that does not derive from the first component. In ideal conditions, this means that the second component would be correlated with some of the observable variables that do not show strong relations with the first component.

The final result obtained have three components: the first and most significant could be interpreted as the consumer's side – consumption of consumer goods' variables (washing machine, fridge and freezer), and the absolute size of the household captured by the number of rooms and toilettes. The vector captures two items that we also linked to the production as education of the household head and his/her spouse and the possession of goods tied to ICT such as fixed landline, mobile phones and computer connected to the internet. The second vector consists of variables on the housing quality such as the per capita number of rooms, bedrooms and toilettes, the number of members in the household and the presence of teenagers as well as variables such as education quality of the children between 7 to 14 years old and 15 to 17 years old, as well as the type of family structure. Finally, the third factor may be interpreted as effective generation of income, consisting of the participation of income from work in the total income, the type of social security/insurance (public and private, etc.) and job status (private employee, unemployed, self-employed, etc.) of the household head.

5. Class Resilience: Updates and Volatility

Classes - The first update to be considered is the definition of income brackets for the economic classes. Noting that our initial quest was to construct absolute (not relative) measures of economic classes for Brazil after 10 years of fast growth of income, especially in the bottom part of the distribution, it is expected for the aspirations of the middle class to adapt both in Brazil and globally. The parallel between Brazilian and world income distribution pointed before is also true for the movements observed in the period, so we must at some point update the middle class definition. The strategy adopted is to keep real income brackets constant for long time spans and then recalculate economic classes comparing new with old classification. The change of aspirations levels is a key application of subjective data (NERI, 2014).

The reapplication of the EGR methodology to the 2012 PNAD yields a middle stratum of 37.5 per cent, starting in the 49th percentile and ending in the 87th percentile. Ten years before the middle stratum started in the 52.6 percent poorest and ended in the 91st percentile. That is, in both moments they start close to the median, a useful parameter together with polarization measures to assess middle class performance. In the 2003 to 2013 period the rise of real per capita median income was 86.8 per cent in PNAD.

Median – The use of the per capita household median income is another universal way of analyzing the income growth of the middle class. As we said, it grew 86.8 per cent in real terms between 2003 and 2013¹⁰ against 29.6 per cent of the per capita GDP and 101.1 per cent of the income of the 10% poorest for the same period.

Updates of the pre-2009 income trends are a test of sustainability of the new middle class in itself, given the presence of aggregate shocks associated with the

¹⁰ Or 88% if we consider the median income growth according to the Monthly Employment Survey (Pesquisa Mensal do Emprego – PME/IBGE). PME data is limited in the income concepts used and in its geographical coverage (only labor earnings in the 6 main Brazilian metropolitan regions); nevertheless, all main shifts in Brazilian income distribution over the past 30 years were first detected in the PME data.

external crisis and its effects on macro variables such as GDP growth. The PNAD 2013 survey, released three years after the calculations mentioned in this section were made, shows changes relatively consistent with the estimates presented above. The large discrepancy between per capita GDP growth and PNAD's per capita household income growth pointed in Neri (2011) is increasing even further. In the period 2003-2013, while household income in PNAD had an average per capita growth of 4.6 per cent per year, per capita GDP rose 2.6 per cent per year. The main cause of this recent divergence is the discrepancy between their respective deflators. Recalculating real GDP growth using people's cost of living captured by the National Consumer Prices Index (INPC) would give an average GDP growth of 4.4 per cent per year instead of the 2.6 per cent for the period 2003-2013.

Particularly relevant to the study of the middle class, refer to the median income is a simple and direct way to summarize the effects of changes in mean income and income inequality. Thus, while from 2003 to 2013 the GDP and mean PNAD income grew at rates of 2.6 and 4.6 per cent per year, PNAD median income rose 6.4 per cent per year. In other words, in this period the 'median Joe' in the middle Brazilian income distribution experienced growth rates similar to those of the Indian economy. In August 2014, according to PME, the median income rose by 5.05 per cent compared to 12 months before. This means that the median labor earnings reported by households in the PME increased by around 3 percentage points more than observed in the mean income from PME and 5 points more than the per capita GDP growth rates.

The discrepancy between GDP growth rates and household income collected by PNAD, both per capita, was still occurring in 2013: while GDP had a 2.5 per cent increase and per capita GDP a 1.6 per cent increase, the per capita household mean income had an increase of 3.5 per cent in comparison with the same period in the year before. In the biennium 2012-2013, PNAD mean per capita income has grown 5.5 per cent against 0.8 per cent of the per capita GDP.

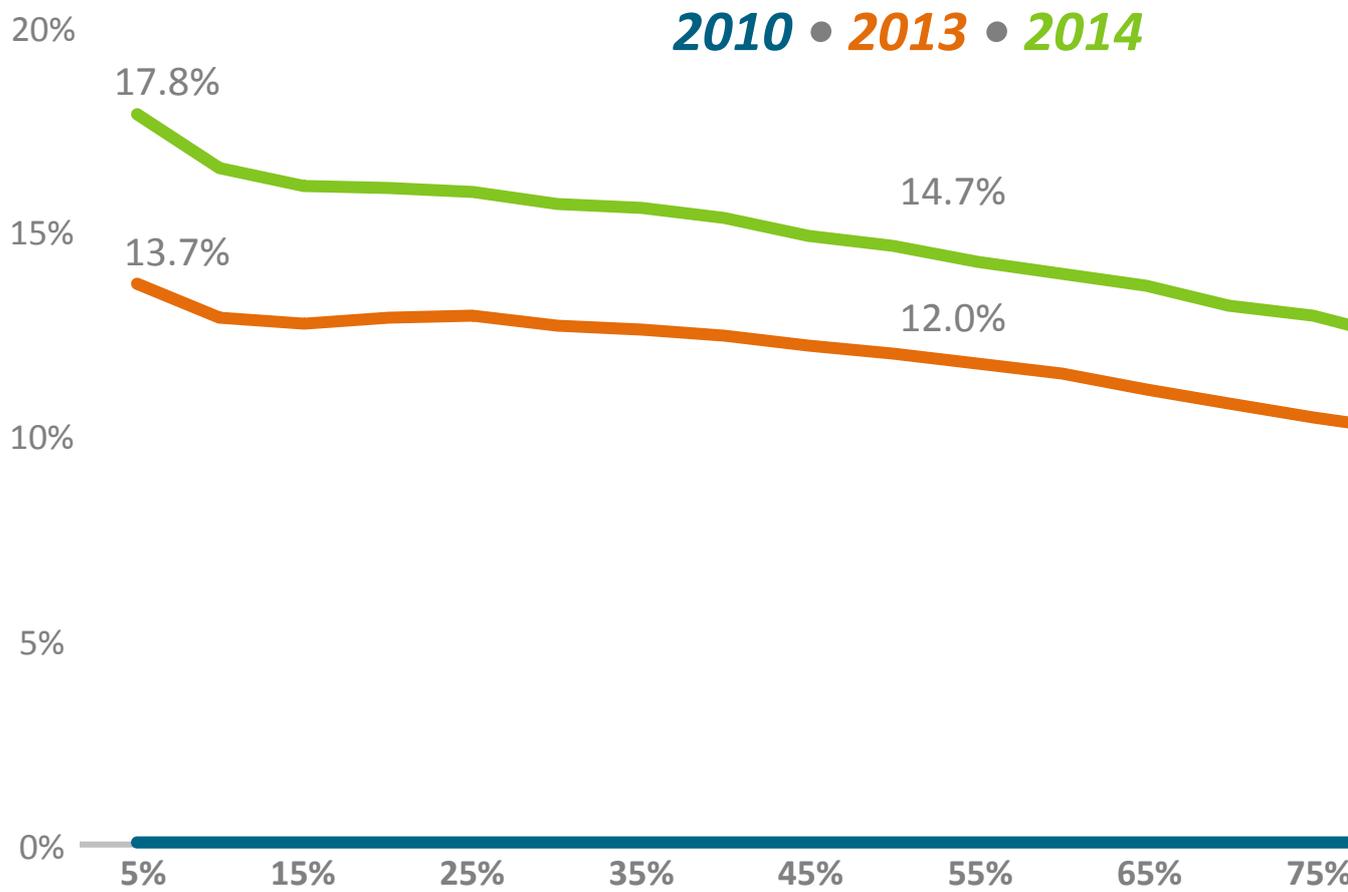
According to PNAD data, labor income corresponds to 76 per cent of total household income in national terms and 81 per cent in the six main metropolitan areas covered by PME. Furthermore, social assistance income was boosted by successive minimum wage increases and by the expansion of the Bolsa Família, with the gradual incorporation of the Brasil Carinhoso program started in May 2012. From July 2013 to July 2014, with inflation and population growth already deducted, the per capita real benefits paid by the National Social Security Institute increased 3.1 per cent¹¹ and the Bolsa Família benefits increased by 6.95 per cent¹². In other words, growth estimates restricted to work income are somewhat conservative.

Quantile Regression - We provide an update of the aggregate movements across the per capita income distribution between the years of 2010, 2013 and 2014, characterized by a discrete variable of each year using PME data. We ran a quantile regression for the 2010 to 2014 (until August) period controlled by socio-demographic characteristics such as gender, age, skin color, metropolitan region, position in the household, education and monthly dummy variable in order to control the seasonality effect. The objective was to separate the macroeconomic effects captured by the year variables of the changes across the income distribution from specific socio-demographic characteristics observed. The data presented on figure 8 below show that the rate of changes occurred between 2010 and 2014 decreases in general as we move from the bottom to the top vintiles. The cumulative real per capita growth rate peaks with a value of 17.8 per cent at the bottom 5% reaching values above 14.7 per cent for the bottom half of the income distribution; then there is a monotonic fall of these growth rates reaching 9 per cent in the top 5% of the per capita income distribution. The distances between the 2013 and 2014 curves allow us to capture the evolution in the last period: increase of 4.1 percentage points (p.p.) for the 5% poorest, 2.7 p.p. for the median and 1 p.p. for the 5% richest. I.e., the process of stronger growth in the basis of the income distribution has continued at least until August 2014.

¹¹ Data from the Ministry of Social Security (Ministério da Previdência Social – MPS) from 2014.

¹² Data from the Ministry of Social Development and Fight against Hunger - MSD (Ministério do Desenvolvimento Social e Combate à Fome – MDS) from 2014.

Figure 8: Quantile Regressions - Cumulative Growth Rates 2010 to 2014

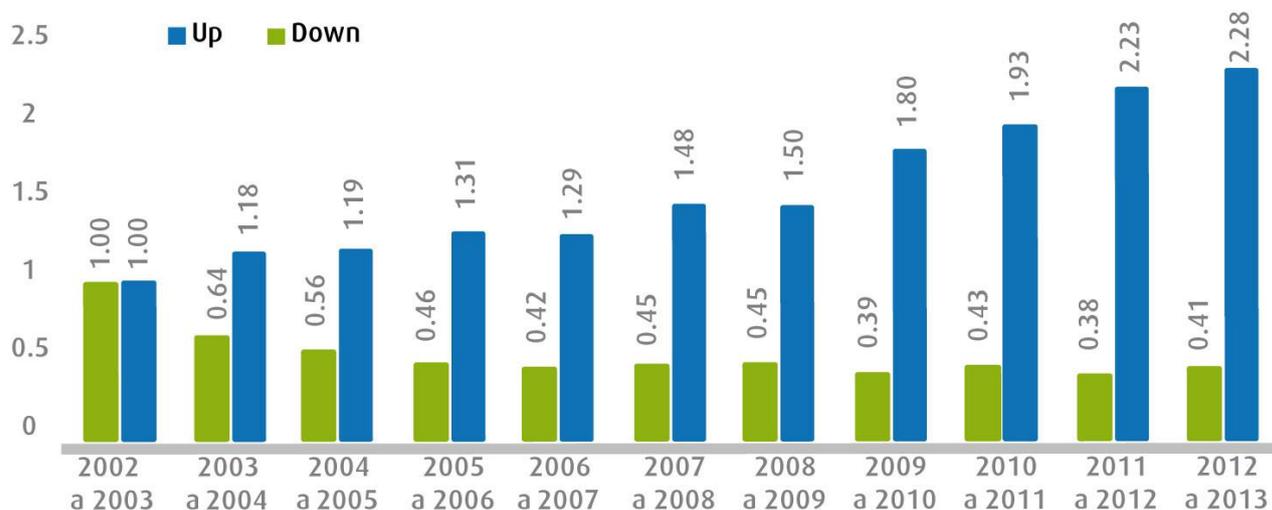


Source: PME/IBGE longitudinal microdata. Household Per Capita Labor Income - 15 to 60 years old without income imputation.

Family income risks - Another possibility arising from the longitudinal structure of the PME, which accompanies the same families across time, is to measure the income risks associated with the newly-acquired living standards. In particular, we verified the proportion of people crossing the median per capita income line across a 12 month-period.

The likelihood of crossing the income median in an upward direction, in the course of a year, generally between the biennia 2002-03 and 2012-13 (figure 9), while the risk of downgrade, measured by the probability of moving downward through the median, is weakening as time goes by. Similar to the quantile regression analysis based on the PME longitudinal data, we examined the probability of displacement of the per capita household income for up and down the median, again controlling for socio-demographic characteristics such as gender, age, skin color, metropolitan region, position in the household and education, in order to separate the time effects from those relative to the observed socio-demographic characteristics. The controlled results demonstrate even more strongly than the uncontrolled results that the transitions to below the median reached their lowest between 2009-10, 2011-12 and 2012-13, while the upward transitions peaked during the last two-year period.

Figure 9: Chances of Going Up and Down across the Median – Odds Ratio (2002=1)



Source: PME/IBGE longitudinal microdata

In short, considering the median as a benchmark, the probability of a drop in income has flat-lined in recent years at the bottom line of the PME series, while the probability of rising has never been so high. In addition to being a period of relative stability of reported income for each individual, the passage from 2012 to 2013 has been characterized by people having the best chances of moving upwards (chances 128 per cent higher than ten years before).

6. Expectation and Classes Perceptions ¹³

To better understand the nature of the new Brazilian economy, after the considerable social ascent of the last decade, we diagnose different economic classes' life details that will also determine its durability: in particular, who is the middle class, what do they do and what do they think, using information from the latest Household Budget Survey (POF).

To better understand the nature of the new Brazilian economy after considerable social progress in the last decade, we diagnose details of the lives of different economic classes that also determine its durability, especially for those who consider themselves middle class and those who were classified as middle class: what do they think of their own actions and of the State, what do expect for the future, among others.

Perceived Policies – We make use of the data from the Household Budget Survey (POF/IBGE) from 2009 and 2003 to draw some perceptions of living conditions and public policies. We make a long story short, presented in more detail in Appendix B. The profile of the middle class in terms of youth and gender is similar to the general population. In relation to education and labor, the middle class has a better profile, particularly with regard to access to productive services provided by the private sector. The perceived quality of private aspects of life, such as the perceived level of income, the quality of food consumed and conditions of the household are higher for the middle class than that observed in the general population. However, the perception of the middle class on the problems of infrastructure and public services such as transport, sports and leisure, education and health, is more on quality than on coverage of these services.

¹³ For additional analysis on subjective indicators see Appendix B.

Self-perceptions - In the field of perceptions, it is interesting to note a statistic that has just been captured in the social perception research realized by IPEA in June 2014 with around 2000 valid questionnaires in over 200 Brazilian cities. The survey asked each Brazilian how does he rank himself in terms of economic class, ranging from extremely poor to the elite, passing by people who call themselves vulnerable and several middle class bands (low, medium and high). The self-perception of the whole middle class by Brazilians is 62.76 per cent, higher than the 58.68 per cent in the 2014 forecast. I.e., in our self-perception of the middle class would enter the whole new middle class and a part of the traditional middle class¹⁴. Despite the proximity of the aggregate data, we must compare in the microdata if some people with the same income put themselves or declare to be in a class of lower income than theirs.

Expectation for the Future - Thomas Friedman, in his best-seller “*The World is Flat*”, views the middle class as looking beyond its present living conditions, towards a better position in the future. This rising social mobility can be seen as the realization of the so-called American Dream, understood as the possibility of social ascent in each country.

According to the Gallup World Poll, Brazilians in 2010 forecast their future life satisfaction in 2015 more optimistically than people in any other country. On a scale from 0 to 10, the Brazilian gives an average grade of 8.6 for his expectation of life satisfaction in 2015, overcoming all other 154 countries in the sample, whose average was 6.7. This interpretation helps us understand the expression 'Brazil: the country of the future', created 70 years ago by Stefan Zweig.

In 2013, year of demonstrations, Brazilians gave a grade of satisfaction with life in 2018 higher than all countries analyzed, more than 150. In fact, it is observed

¹⁴ It is also worth exploring the forecast for the year of the subjective research and the final date of the projection model previously presented. In the latter, the C class would reach 58.68 per cent of the Brazilian population in 2014, number closer to the subjective forecast number, while 66.49 per cent of the population would be in B and C classes taken together.

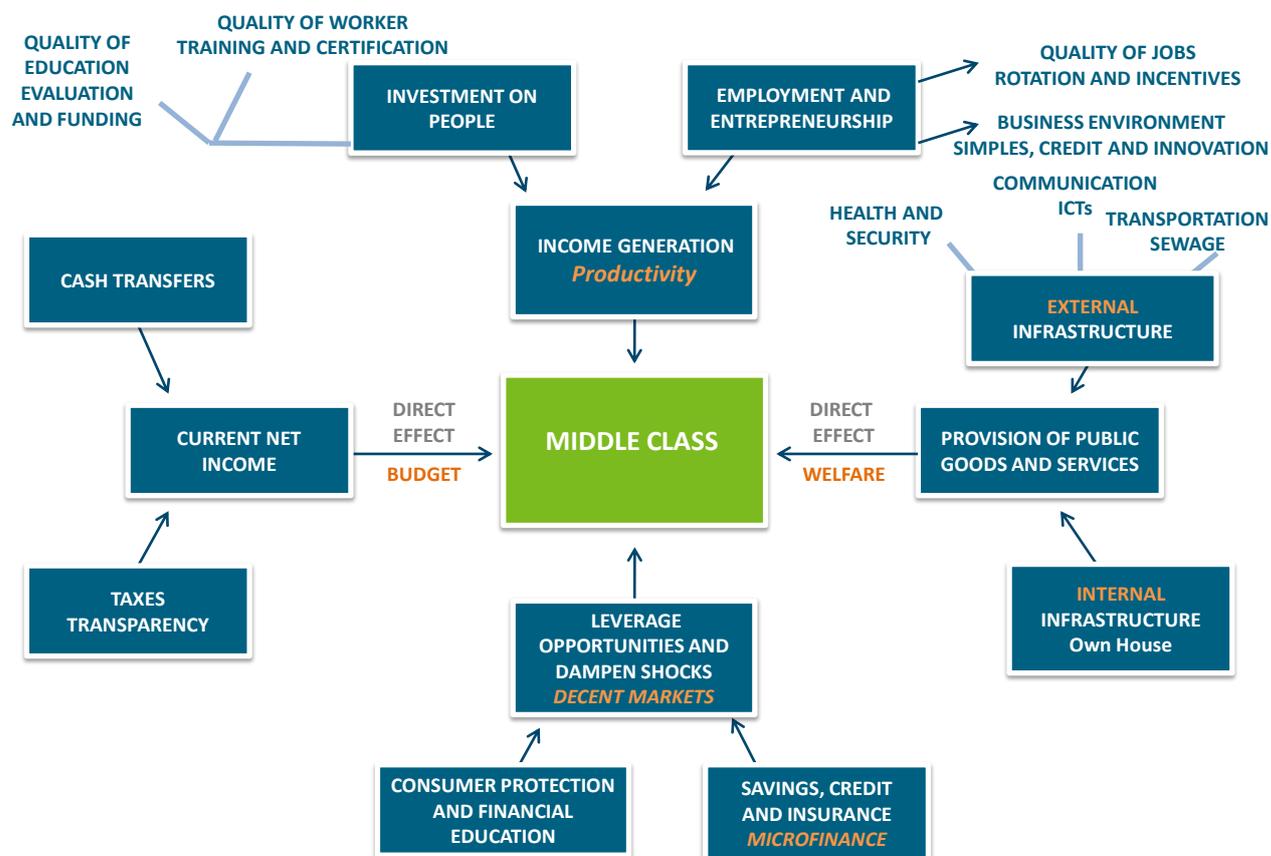
every year that Brazil occupies the highest position in the global ranking of future happiness since 2006, when the survey started being made. I.e., the Brazilians are eight consecutive times world champions of future happiness. This optimism may hinder actions which depend on future expectations like family savings and investment in education, for example.

7. Public Policies for the New Middle Class

Brazil still faces many obstacles to the development of its potential, including a weak educational system, low savings rates and a tangle of regulatory hurdles, just to name a few. To the prospects for future growth, however, what matters is not the absolute level of these factors, but how they evolve over time. Brazil can advance vertically if it chooses the right paths towards its possibilities frontier.

Conceptual Diagram – Based on the evidence discussed in the previous three sections, we discuss the design of public policies aimed at the Brazilian middle class. Special focus is given to the main channels of impacts of such policies. We discuss transfers and taxes that affect people’s current net income, as well as other channels that affect the determination of gross income in the productive factors factor market, in particular in the labor market. Then, we discuss how to influence people’s ability smooth their respective purchasing power over time through segments of assets, credit and insurance. Finally, we discuss the role of policies that affect the provision of public goods and services that directly impact people’s welfare. The diagram below conceptually identifies the main channels of impact of policies on the size and welfare of the middle class and exemplifies them with some concrete actions.

Figure 10 – Channels of Impact of Policies for the New Middle Class



The first effect on the left side is given by policies that directly impact the family budget through transfers and taxes in addition to incomes earned in the factors markets. It is expected that the emphasis on the income gains observed since the beginning of the rise of the middle class, in 2003, is gradually divided with the amount of taxes incurred and the efficiency of management in their application, which leads us to a second type of direct effect through policies that influence the provision of public goods and services that directly affect people's well-being, as shown on the right side of the diagram. For this purpose, we separated elements that are shared in people's homes, starting with the house itself, from other external infrastructure elements such as access to sanitation, health, Information and Communication Technologies (ICTs) and culture, for example. The latter have gained prominence in the Brazilian public debate in recent years.

If we want a more structural view of the observed process of changes, one must look at families' income generation through formal jobs and entrepreneurship, as exemplified in the upper part of the scheme. On one hand, the continuous fall in the unemployment rate to new historic levels and the beginning of the final stage of the demographic bonus shift recent years' emphasis from the number of jobs created to improving the quality of work and the productivity gains associated. On the other hand, factors that influence both dimensions are directly related to the quantity and quality of regular education, which also have gained prominence in the domestic public debate. Professional education and the high turnover of jobs are other key elements to be dealt with in the State's agenda of public policies, as well as the business environment of companies. Subsidy policies to formal work for low income workers, such as the Abono Salarial (Wage Bonus), Salário Família (Family Wage) and the lower limit price in the labor market represented by the minimum wage, play a special role in the determination of earnings and in the productivity of labor.

In addition to productivity gains of individuals and firms, we must look at other relevant markets. The rise in the degree of market concentration occurred in Brazil in recent years suggests the growing importance of consumer protection and competition actions. Finally, we emphasize the importance of financial education and regulation associated to savings, credit and insurance instruments. We develop below in more detail the ingredients of the latter block (the lower part of the diagram) and of the markets for factors of production.

Decent Markets – It is necessary to go further and "give the market to the poor", completing the movement of recent years when, due to the fall in inequality, we "gave the poor to markets (consumers)." We should treat the poor as the protagonist of his story, in addition to the demand for the provision of quality public services by the State or regulated by it¹⁵.

The market agenda for the poor is advantageous because it does not result in tax costs, generating Pareto improvements where no one loses and the poor earn different upgrades, as they were more distant from the market. When the markets are very incomplete it is possible to go further the old dilemma between efficiency versus equity and have gains through the harmonious union between these vectors. If well regulated, consigned credit to social security benefits goes in this line, leveraging the gains in welfare of those contemplated also for equity reasons, as on fixing the minimum wage.

Specifically, in the context of public policies on the financial side, we refer to micro insurance and microcredit. The popular production credit is essential to give vent to low-income entrepreneurs' spirits, and we have the example of Crediamigo, a microcredit program of a federal public bank in a poor area, the Bank of Northeast of Brazil (Banco do Nordeste), which runs along the lines of Grameen Bank, using a system of solidarity lending. The program has inspired the creation of the Brazilian federal program Crescer (Grow) in 2011. There is a specific lesson on the labor income increasing with the productivity (efficiency wage) in the case of the loan officers, who may even triple their salary depending on the portfolio performance. This can generate lessons like "private labor market" to other segments of the public sector. Crediamigo covers 60% of the national microcredit market, generating an average profit increase of 13% per annum of its clients, which are informal backyard enterprises such as

¹⁵ Under the Confucian dilemma between "giving the fish" and "teaching how to fish", it means introducing the "fish market" to the poor that learned how to fish. The socialist version of this process would be the redistribution of the fish, although the image of the fishing net (social capital, cooperatives, etc.) fits in more structurally in the Piscean metaphor.

grocery stores, money changers, private schools, etc. The probability of a customer who was poor to get out of poverty in 12 months after the credit is 60% versus 2% of the probability of moving in the opposite direction - all this without subsidies because the program generates a profit of R\$50 per year per client. Crediamigo was elected in 2010 the best experience of microcredit on the American continent by the major rating agency of microfinance, Mix Market. There is richness in poverty, and the state can interact synergistically with the private sector in this search.

An agenda that has been developing late in Brazil is the one related to self-employed workers and small urban producers, which consist in giving access to the poor, as producers, to the consumer markets. Around 65% of the urban micro entrepreneurs say that their main problem is the lack of clients or fierce competition, which are demand and not supply problems such as formalization, infrastructure, access to credit, etc.

Policies aimed at improving the access to consumer markets such as export through small producers' cooperatives, access to electronic commerce (*e-commerce*) and government procurement, operate in this direction. In relation to government procurement stand out the municipalities that buy school desks and food in the local production through the Food Acquisition Program (Programa de Aquisição de Alimentos – PAA).

Macroeconomic stability creates fertile ground for the development of the markets at the base of the pyramid, as well as for the reduction of violence. The Pacifying Police Units (Unidades de Polícia Pacificadora – UPPs) from Rio de Janeiro are a living example of how the “shock of order” can lead to a “shock of progress”, especially those located in richer areas that used to suffer with more losses of capital. Allowing us a more literal view of an aspect related to the growth of slums, where 85% of the Brazilian population lives, a good urban

transport policy should follow this line. Particularly, in the cases of São Paulo and Rio.

Agenda – “Give the market” means above all to improve people’s access to the labor market, which is integrating the upper block of the diagram. The foundations of the economic growth and its associated reforms are extremely important here. The agenda of labor, pension and tax reforms (exemption of payroll, etc.) boosts the relation between growth and labor market but it turns difficult to speak of them when we are generating more than one million formal jobs per year. The question that remains is how many jobs we would generate if the institutions were more favorable.

Education serves as a passport to formal work: we refer to all levels of formal education and professional education. The agenda of rewarding teachers with increasing wages depending on the student grades is another recent example of efficiency wage, as prevailing in the state of Pernambuco and in the city of Rio de Janeiro. As the public sector is or should be closer to the poor, it can pave their access to the market. The evaluation of school proficiency brings transparency to the parents in relation to the quality of education of their children’s school, improving the functioning of the public sector. Social goals complement this movement, incorporating efficiency of the private sector to the public sector through a pseudo-market, as there are no prices. The education goals of the Brazilian Education Development Index (Índice de Desenvolvimento da Educação Básica - IDEB), of the Movement All For Education (Movimento Todos Pela Educação) and from Dakar are good examples. If the choice is to go beyond “give market to the poor” using the State as a bridge, it is worth to incorporate in the agenda the connection between the distribution of the resources from the public budget and the performance of different resource receiving units, measured by social indicators. In this case, we must take care with the provision of social insurance that protects the school from idiosyncratic shocks – for example, insurance against inclement weather

such as floods that impact the educational performance for reasons unrelated to management efforts and teaching undertaken.

Some would like an agenda friendlier to the private sector; while others would prefer a more State oriented provision. The collective of Brazilians basically want the two things: respect for market rules with quality regulation and active social policies by the State. The challenge is to combine the virtues of the State with the virtues of the markets, not forgetting to avoid possible failures from both sides.

Conclusions:

The concept of "middle class" has not always carried positive connotations in the Brazilian social context. The new middle class differs in spirit from the term 'nouveau riche', which above all discriminates people for their socio-economic origins. The new middle class gives a positive and forward-looking vision, meaning for someone who has achieved better living conditions to continue to move ahead. More important than where you came from is where you will go and plan to get to. A new middle class is not defined by *having*, but by *being*, and by taking decisions today with a view toward tomorrow.

Consumer credit and social benefits are part of the Brazilian new middle class scene, but they play supporting roles. The main role is played by the producer side, formal employment in particular. The miracle of expansion of formal jobs (*carteira de trabalho*) is the most potent symbol of social ascent as a consummated act, more than just a platonic object of desire. Many subsistence entrepreneurs have been absorbed into formal jobs (NERI, 2003 and 2008). The small entrepreneur with prospects of capital accumulation and growth, on the other hand, is still relegated to the backstage here, given the difficulties of bureaucracy, tax, credit and their respective values and attitudes. Contrary to legend, Brazil is not a granary of little big entrepreneurs but of large Fordist firms, who after flourishing in a hostile Brazilian business environment, aspire to compete in their own global segments.

There is a chronic deficiency in the public policies aimed at supporting productive activities in Brazil, from professional training courses to accessible productive credit. This difficulty strongly counteracts the attitude summarized in the title of a well-known play: *Brasileiro, Profissão Esperança* ('Brazilian, profession hope'). The key instrument to release the productive potential of our workers is education. And education, although still at a class E level, has improved in quantity, quality¹⁶ and importance, a fact captured by the priorities

¹⁶ For example, in the international ranking of PISA (Programme for International Student Assessment), developed by OECD (Organization for Economic Co-operation and Development) and that investigates the school proficiency among 15 year-old students, Brazil was the in the last position of the ranking in 2003 among the same countries also observed in 2012, but it was the country with the highest improvement in the period.

expressed by the population (the SIPS survey from IPEA, replicating the questions from the My World survey, confirms that education is only behind health in terms of priority of the population, rising from seventh to second in the list of the Brazilians' concerns). The indifference to education policies in the past has placed our economic elite in the worst of the worlds. The new middle class moreover looks to consume better-quality public services in the private sector, including private schools, health care and private pension funds.

The empirical strategy of this paper was to define an income-based middle class to measure its level and evolution and then to combine this definition with a subjective approach that measures expectations and attitudes of people, taking into account the roles played by different assets in order to assess the sustainability of the process of expansion of the middle class. Our main results are as follows:

Measurement - We have shown a clear parallel between income distribution among Brazilians and inequality across countries both in levels and changes occurred in the 2000s. For our purposes the definition of a new middle class in the Brazilian context in fact delivers a global middle class according to the same criteria. We identify here two ways of measuring the middle class based on income: the so called new middle class, or C class, and other more fortunate and close to the American standards that inhabit the imagination of many in Brazil and elsewhere, here called the traditional middle class, or AB class.

- Between 2003 and 2013 around 44.7 million Brazilians joined the so-called new middle class (C class) and 12.5 million joined the A and B classes, which grew proportionally more and will grow even more than the C class as the inclusive process continues, so that we could speak of a new AB class the same way we speak of the new C class in the recent period.

- Using 2003-9 trends of state-level growth and inequality reduction, we predict that until 2014 the C class will comprise 58.68 per cent of the population, substantially above the 37.59 per cent in 2003 and 55.99 per cent in 2013. AB class increased from 7.69 per cent of the population in 2003 to 13.13 per cent in 2013 and we forecast 14.56 per cent in 2014.
- The self-perception of the whole middle class by Brazilians is 62.76 per cent, above the 58.68 projected for 2014. I.e., in our self-perception of the middle class would enter the whole new middle class and a part of the traditional middle class, which suggests updating the definition of economic classes, as addressed in section 2.
- The progress in Brazilians' ability to generate income increased, according to our synthetic index, 31.2 per cent from 2003 to 2009, and the consumption potential index increased 22.59 per cent. These data reveal that households' 'producer side' increased 38 per cent faster than their 'consumer side'.
- The use of the per capita household median income is another universal way of analyzing the income growth of the middle class, which grew 86.8 per cent in real terms between 2003 and 2013 against 29.6 per cent of the per capita GDP and 101.1 per cent of the income of the 10% poorest for the same period.
- Similarly, quantile regressions for the recent period show that the rate of changes occurred between 2010 and 2014 falls as we move from the bottom to the top of the income distribution. The cumulative real per capita growth rate peaks with a value of 17.8 per cent at the bottom 5 per cent reaching values above 14.7 per cent for the bottom half of the income distribution; then there is a monotonic fall of these growth rates reaching 9 per cent in the top 5 per cent of the per capita earnings distribution.
- Using individual longitudinal data, the chances of an individual crossing the income median in an upward direction, in the recent period, increased 128 per cent from 2002-03 to 2012-13, while the risk of downgrade, measured by the chances of moving downward through the median, fell 59 per cent in the same period.

Policy Implications – Each form of measurement proposed (current income, smoothing consumption (permanent income), productive assets and subjective aspects) is then coupled to a set of public policies aimed at providing durable prosperity and welfare of the Brazilian middle class. Consider the following:

- Middle class profile in terms of youth and gender is close to the overall population. Its education and work profile is generally higher, in particular in terms of access to productive services provided by the private sector. The perceived quality of private aspects of life such as perceived income level adequacy, quality of food consumption and housing conditions in the middle class is higher than the one observed in the overall population. On the other hand, the middle class perception of the coverage problems in public infrastructure and public services such as transport, sports and leisure, education and health is normally perceived smaller than the lack of good quality perceived in the same respective services. The exception is sewage. In general, quality aspects of life within households are given a better evaluation than public infrastructure and services found outside their homes.

The fall in the unemployment rate and the beginning of the final stage of the demographic bonus point to the need for policies that improve the quality of jobs and productivity in the economy, which is directly linked to the quantity and quality of the regular education, which has also gained prominence in the public debate. Professional education and the high turnover of jobs are other key elements to be attacked in the State's agenda of public policies, as well as the business environment of companies. Likewise there is a qualitative change between C and AB classes from the monetary point of view, the "quality" prefix shall follow the main concerns of the emerging classes, such as education and labor.

- In addition to productivity gains of individuals and firms, we must look at other relevant markets. The rise in the degree of market concentration occurred in Brazil in recent years suggests the growing importance of consumer protection and competition actions, as well as financial education and regulation associated to savings, credit and insurance

instruments. Consolidate decent markets where private decisions are taken is another goal of the public action.

- As people rise in life and given the Brazilian tax structure, it is expected that the emphasis on income gains observed since the start of the rise of the new middle class in 2003 is divided with the amount of taxes incurred and the efficiency of the management in their application.

It is necessary to go beyond the objective conditions of life and focus on subjective aspects contained in people's aspirations and perceptions. Qualitative aspects of living conditions within the households generally receive better evaluations than infrastructure and public services provided outside the home. In this aspect, we need to separate shared elements within people's homes (starting with the house itself) and in their workplaces from those who should be offered by State policies. In the center of the main dreams realized by the class C, with respect to the attainment of the "own house" and employment certificate, there is the nightmare of deficient public transport as the main symbol of the new challenges.

- The perception of the middle class on the problems of infrastructure and public services such as transport, sports and leisure, education and health, is more on the quality than on the coverage of these services. The latter have gained prominence in public debate in recent years.

Some authors look at the definition of middle class as the very possibility of changing the life in the future. In 2013, year of demonstrations, Brazilians gave a grade of satisfaction with life in 2018 higher than all countries analyzed, more than 150. In fact, it is observed every year that Brazil occupies the highest position in the global ranking of future happiness since 2006, when the survey started being made. I.e., the Brazilians are eight consecutive times world champions of future happiness. If on one hand this optimism may hinder actions that are related to such high expectations, as the incentive to family savings, investment in quality education and improvement in the productive competitiveness in the labor market, on the other hand this high individual expectations about the future changes also entails a greater probability of frustration.

The Brazilian belief that life will get better helped me to understand what the big household surveys allowed me to learn about the new emerging classes and my field visits allowed me to recognize in locus. More than the gold, forest and wood that gave color and name to Brazil, the greatest wealth is the glow reflected in the eyes of Brazilians¹⁷.

¹⁷ In relation to the colors of the Brazilian flag this is the interpretation of playful meanings. Historically, the colors refer to the combination of green of Don Pedro I's Royal House of Braganza with the golden color of Princess Leopoldina's Royal House of Habsburg.

REFERENCES

BARROS, R. P. de; NERI, M. C.; MENDONÇA, R. An Evaluation of The Measurement of Income and Expenditures in Brazilian Household Surveys: POF X PNAD. *In: ENCONTRO DA SOCIEDADE BRASILEIRA DE ECONOMETRIA XVII*, 1995, p. 105-129. **Anais...** Salvador: SBE, 1995.

BRASIL. SAE/PR – Secretaria de Assuntos Estratégicos da Presidência da República. **Comissão para a Definição da Classe Média no Brasil**. Brasília: SAE/PR, 2012. Disponível em: <<http://www.sae.gov.br/site/?p=13425>>. Acesso em: 1 jul. 2014.

CAMPELLO, Tereza; NERI, Marcelo Côrtes (Orgs.). **Programa Bolsa Família: uma década de inclusão e cidadania**. Brasília: Ipea, 2013. 494 p.

CRUCES, G.; LÓPEZ-CALVA, L.F.; BATTISTÓN, D. Down and Out or Up and In? Polarization-based measures of middle class in Latin America. *In: Working Papers 113*. La Plata: CEDLAS/Universidad Nacional de La Plata, 2011.

ESTEBAN, J.; GRADÍN, C.; RAY, D. An extension of a measure of polarization with an application to the income distribution of five OECD Countries. **Journal of Economic Inequality**, v. 5, n. 1, p. 1-19, 2007.

ESTEBAN, J.; RAY, D. On the Measurement of Polarization. **Econometrica**, v. 62, n. 4, p. 819-852, jul. 1994. Disponível em: <<https://www.econometricsociety.org/issue.asp?ref=0012-9682&vid=62&iid=4&oc=&s=>>>.

FRIEDMAN, M. **A theory of the consumption function**. Princeton: Princeton University Press, 1957.

FRIEDMAN, T. **The World is Flat: a brief history of the globalized world in the 21st century**. London: Penguin; Allen Lane, 2005.

GASPARINI, Leonardo *et al.* Income, Deprivation, and Perceptions in Latin America and the Caribbean: new evidence from the Gallup World Poll. *In*: INTER-AMERICAN DEVELOPMENT BANK. **IDB Publications 45618**. La Plata: CEDLAS/Universidad Nacional de La Plata, 2008. Disponível em: <<http://ideas.repec.org/p/idb/brikps/45618.html>>.

HALL, R.; CARLTON, Dennis W. Distribution of Permanent Income. *In*: GRILICHES, Zvi; KRELLE, Wilhelm; KRUPP, Hans-Jürgen; KYN, Oldrich. (Eds.). **Income Distribution and Economic Inequality**. New York: Halsted Press, 1978.

MILANOVIC, B. **Worlds Apart**: measuring international and global inequality. Princeton: Princeton University Press, 2005.

_____. **The Haves and the Have-Nots**: a short and idiosyncratic history of global inequality. New York: Basic Books, 2011.

NERI, Marcelo Côrtes. **Inflação e Consumo**: modelos teóricos aplicados ao imediato pós-Cruzado. Rio de Janeiro: BNDES, 1990.

_____. **Cobertura Previdenciária**: diagnóstico e propostas. Brasília: Ministério da Previdência Social, 2003.

_____. **Microcrédito, o mistério nordestino e o Grameen brasileiro**: perfil e performance dos clientes do Crediamigo. Rio de Janeiro: Fundação Getúlio Vargas, 2008.

_____. **A Nova Classe Média**: o lado brilhante da base da pirâmide. São Paulo: Editora Saraiva, 2011.

NERI, Marcelo Côrtes; CAMARGO, J.M. Distributive effects of Brazilian structural reforms. *In*: BAUMANN, Renato. (Org.). **Brazil in the 1990s**: an economy in transition. Basingstoke: Palgrave, 2001.

NERI, Marcelo Côrtes; CARVALHAES, L.; SACRAMENTO, S. **Superação de Pobreza e Nova Classe Média no Campo**. Rio de Janeiro: Fundação Getúlio Vargas, 2012.

NERI, Marcelo Côrtes; SCHIAVINATTO, Fábio (Orgs.). **SIPS 2014**: percepções da população sobre políticas públicas. Brasília: Ipea, 2014.

OECD – Organisation for Economic Co-operation and Development. **Latin American Economic Outlook 2011**: how middle-class is Latin America? Paris: OECD Publishing, 2010.

_____. **PISA 2012 Results in Focus**: what 15-year-olds know and what they can do with what they know. Paris: OECD Publishing, 2013.

SOUZA, A.; LAMOUNIER, B. **A Classe Média Brasileira**: ambições, valores e projetos de sociedade. Rio de Janeiro: Campus; Elsevier, 2010.

SOUZA, J. **Os Batalhadores Brasileiros**: nova classe média ou nova classe trabalhadora? Belo Horizonte: Editora UFMG, 2010.

APPENDIX I

Marginal contribution of stocks to inequality of flows

The table presented below (Table I.1) provides all relevant information for the contribution of each specific variable to the household's income calculated using the microdata from the National Household Survey (PNAD) by the Brazilian Institute of Geography and Statistics (IBGE). It should be read by not considering the magnitude of each category's coefficient, but the power of the categories taken together to explain the household income. Thus, when looking at the magnitude of extreme coefficients in each variable, we note that the equivalent income of a person who lives in a household with one bathroom, if doubled (that is, two bathrooms for four people instead of one bathroom), increases 27.5 per cent in relation to the baseline scenario. Meanwhile a person with a fixed landline and a mobile telephone at home has, *ceteris paribus*, an income 38.5 per cent higher than a person with none of these communication technologies at home. The 'spouse' variable is more significant than the reference person, as it refers not only to the impact of education, but to the composition of family income which is more or less diversified by virtue of potential income earners. (The same does not happen to the education variable of the reference person, because each household has at least one reference person.) A household with a spouse with at least partial university (12 or more years of schooling) has a 28 per cent higher income than one with a spouse with an unknown educational level (regression basis, zero coefficient), which in turn has an income 14 per cent higher than those without spouse.

Following the order of statistical relevance of the variable selection model, we have a variable on the 'type of family' composition where a family consisting of a couple with all children under 14 has a per capita income around 30 per cent lower than a family with two adults and no kids. The fifth variable with higher predictive power is the one which captures the nature of the public or private social insurance of the household head or none of the above, that is, inactive or

unemployed household heads, where the households in which the reference person pays both types of insurance has a family/household per capita income around 30 per cent higher than those where the heads are inactive or unemployed. The remaining variables may be analyzed in the same way.

We explored the contribution of each variable of stock on the variance of inequality in household per capita income. We calculated the marginal contribution of each variable on the total R² of the regression taking them one by one out of the complete regression and calculating the relative difference such as its contribution to the margin for the income inequality:

Table I.1: Marginal Contribution of Income Inequality

	WITHOUT THE RESPECTIVE VARIABLE		
	R ²	DIF R ²	DIF R ² /R ² ORIG PER CENT
All variables (R2 original)	0.6924	-	
Telephone	0.6813	0.0111	1.60
Spouse's job position	0.6825	0.0099	1.43
Children's school attendance (7 to 14 years old)	0.6860	0.0064	0.92
Washing machine	0.6868	0.0056	0.81
Education of the head of the household	0.6870	0.0054	0.78
Type of family	0.6871	0.0053	0.77
Head's job position	0.6874	0.0050	0.72
Computer	0.6876	0.0048	0.69
Children's school attendance (0 to 6 years old)	0.6884	0.0040	0.58
Type of household (owned, financed and rented)	0.6888	0.0036	0.52
Children's school attendance (15 to 17 years old)	0.6890	0.0034	0.49
Fridge	0.6892	0.0032	0.46
Freezer	0.6896	0.0028	0.40
Spouse's education	0.6897	0.0027	0.39
Head pays social security tax	0.6898	0.0026	0.38
Head belongs to union	0.6916	0.0008	0.12
per capita number of toilettes	0.6919	0.0005	0.07
per capita number of bedrooms	0.6920	0.0004	0.06
per capita number of rooms	0.6921	0.0003	0.04
Sewerage system	0.6921	0.0003	0.04
Radio	0.6921	0.0003	0.04
Number of members	0.6922	0.0002	0.03
Television set	0.6922	0.0002	0.03
Age when head started working	0.6923	0.0001	0.01

Source: PNAD/IBGE microdata

APPENDIX II

Class Gradients and Perceptions – an analysis from the Household Budget Survey (POF)

Since the overall population mean is in general close to the middle C class, we compare the upper A and B classes (the top 10 per cent) and bottom E class (the 15 per cent poorest) gradients to emphasize the contrasts between the Brazilian riches and poor using the data from the latest Household Budget Survey (POF).

What do they do? – Education is a luxury asset: 47.46 per cent of the adult elite have at least full university education and 3.17 per cent have a master's or doctorate. Among the poor this drops to 0.78 per cent and 0 per cent, respectively (meritocracy?). Among those who presently attend school 73.4 per cent of the elite attend private institutions against 3.33 per cent of the poor. The IDEB (Index of Basic Education Development) shows that pupils' learning proficiency in private schools is 66.7 per cent higher than in public schools. Students in private schools have average learning levels similar to those observed in the OECD countries. This is not a mere photography of the Brazilian Belindia but a trailer of the life to be lived on both sides of the border.

Table II.1: Individual characteristics, Education and Work by Economic Classes

INDIVIDUAL CHARACTERISTICS BY ECONOMIC CLASSES	TOTAL POPULATION	ECONOMIC CLASS				GRADIENT AB/E
		CLASS E	CLASS D	CLASS C	CLASSES AB	
Female	51.23%	50.24%	51.07%	51.63%	51.75%	103%
Youth (20 to 29 years)	17.30%	15.79%	17.30%	18.00%	16.98%	108%
Black	7.73%	9.31%	9.59%	6.87%	3.86%	41%
Rural	17.03%	35.99%	19.63%	10.56%	4.14%	12%
Metropolitan Core	23.16%	13.59%	19.46%	24.88%	42.55%	313%
Metropolitan Periphery	12.69%	8.45%	14.38%	13.98%	10.53%	125%
Covered by Bolsa Familia	4.99%	12.66%	7.38%	1.54%	0.14%	1%
Attends Private School	6.80%	1.41%	3.07%	8.39%	19.15%	1358%
Attends Public School	24.56%	40.87%	31.26%	17.93%	6.92%	17%
Has College Education	8.76%	0.75%	1.82%	9.89%	36.19%	4825%
Social Security Coverage	37.43%	10.23%	25.58%	44.18%	56.09%	548%
Private Employee	18.64%	7.10%	14.85%	24.60%	23.09%	325%
Public Employee	5.43%	0.98%	2.81%	6.71%	14.63%	1493%
Employer	1.03%	0.08%	0.15%	1.19%	4.38%	5475%

Source: POF/IBGE 2009 microdata

The probability of some adults in class AB having a public job is 1491 per cent higher than that of the poor, and occupied people contributing to social security is 548 per cent higher. The probability of a poor person receiving the Continuing Provision Benefit (BPC), a non-contributory benefit for the poor elderly or

disabled, is 489 per cent higher for the poorest than in the elite. This class gradient in the Bolsa Família Program is 9022 per cent in favor of the most vulnerables. The reverse is seen in the ownership of a special checking account, a differential of 5442 per cent in favor of class AB. The gradient in the case of the health plan and credit card possession is 4493 per cent and 102 per cent, respectively. Plastic money is the least elitist of those financial instruments.

What do they think? – Let us move on to class perceptions. Note that the poor tend to have a less restricted subjective assessment. However, as Caetano Veloso, a popular Brazilian singer says, 'each one knows the pain and pleasure of being oneself'. The elite have a probability of having their incomes lasting until the end of the month 1139 per cent higher than the poor. The elite's perception of having sufficient quantity of food to eat is 302 per cent higher, while always having food that they want is 704 per cent higher. As expected, the reason why this happens in relation to the insufficient income is 277 per cent greater amongst the poor. In general, the requirements associated with the perception of food quality are more biased towards the elite than food quantity.

Table II.2: Public Services Quality and Individual Perceptions by Economic Classes

PUBLIC SERVICES AND STANDARD OF LIVING PERCEPTION BY ECONOMIC CLASSES	TOTAL POPULATION	ECONOMIC CLASS				GRADIENT AB/E
		CLASS E	CLASS D	CLASS C	CLASSE-SAB	
STANDARD OF LIVING PERCEPTIONS						
Enough family income	21.70%	5.11%	10.58%	26.93%	58.20%	1.139%
Always consumes type of food wanted	31.39%	9.83%	19.22%	38.99%	69.24%	704%
Has special cheking account	13.66%	0.97%	2.48%	13.18%	52.52%	5414%
Delay in debt payments	33.15%	43.25%	39.45%	29.30%	16.88%	39%
Good overall housing conditions	49.25%	33.46%	39.86%	55.36%	75.78%	226%
Public Services Coverage and Perceived Quality						
Good public transport services	63.40%	59.81%	60.32%	64.85%	67.86%	113%
No public transport services	25.18%	45.98%	28.55%	17.76%	10.61%	23%
Good educational services	68.96%	68.64%	66.94%	69.41%	72.76%	106%
No educational services	2.70%	2.61%	2.68%	2.70%	2.85%	109%
Good health services	43.49%	49.58%	39.10%	44.70%	56.39%	114%
No health services	4.03%	5.77%	4.58%	3.14%	3.31%	57%
Good leisure and sports services	51.33%	47.33%	45.51%	51.48%	64.92%	137%
No leisure and sports services	42.85%	56.82%	48.75%	38.20%	22.23%	39%
Good sewage services	77.48%	65.36%	71.20%	80.64%	86.11%	132%
Not covered by sewage services	36.80%	61.98%	43.77%	27.57%	12.95%	21%
Good quality of gabage collection services	86,09%	78,40%	82,61%	88,64%	92,79%	118%
No garbage collection services	13,90%	33,24%	16,08%	7,05%	2,65%	8%
Violence in the neighborhood	31,07%	28,87%	33,08%	30,76%	31,44%	109%

Source: POF/IBGE 2009 microdata

Owning a decent home is one of the main aspects of people's quality of life. There is a 226 per cent higher probability of living in a good house in class AB compared to class E. The problem of the poor is not only that they have no access to public services but that the quality amongst those who do have access is worse. In the worst of all services, sanitation, the probability of someone from class AB having access to a good sewage and garbage collection service is 132 and 118 per cent higher than for the poor, respectively. Even without taking into account that the poor have less coverage and/or more clandestine connections in supplying a variety of public services, the gradient of the delay in water, electricity or gas bills is 338 per cent higher amongst the poor. In the case of public services subject to externalities: to subsidize or not subsidize, that is the question.

On the matter of perceptions about different public policies, despite the disparities of effective education proficiency mentioned above, the perceived good quality gradient is only 106 per cent higher in the elite vis-à-vis the poor. Between 68 per cent and 73 per cent of these classes considers education as good. In the health services, which occupy the top of the ranking of the concerns of Brazilians¹⁸, there are problems of coverage and in perceived quality. Despite the supposed universalization of health care in the SUS (National Health System), there is a 174 per cent higher gradient of lack of services for the poor and 114 per cent favorable for the elite in assessment of quality considered at least good.

Differentials in coverage and quality are significant in the assessment of collective transport. The poor perceive a 433 per cent lower access to public transport than the elite, but with respect to quality the elite who have access perceives at least 113 per cent better quality than that of the poor. Leisure and

¹⁸ The Brazilian Institute for Applied Economic Research (IPEA), through a household survey entitled "Social Perception System of Indicators" (SIPS), conducted a fieldwork in August 2013, whereby a series of questions from the My World survey (<http://www.myworld2015.org>) were replicated. Looking at the priorities chosen by the Brazilian people through the SIPS research by IPEA, the most important one was a Better Healthcare (in 87.64% of the answers, this preference was among the 6 chosen priorities).

sports services are 256 per cent less available amongst the poor and 137 per cent higher in quality amongst the elite.

Lastly, the probability of a class AB person perceiving problems of violence in the area where they live is 109 per cent more than that of a poor person, consistent with the idea that violence is less associated with poverty and more with inequality itself.