THE NEW MIDDLE CLASS IN BRAZIL:
THE BRIGHT SIDE OF THE POOR

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# The New Middle Class:
# The Bright Side of the poor

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**Center for Social Policies**

**Fundação Getulio Vargas**

# The New Middle Class in Brazil: The Bright Side of the Poor[1]

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**Preface**

# Preface

Years ago when I first wore a pair of glasses to correct my myopia, I began to notice the depth and clarity of things at the subtle shades and hues of the world around me. Similarly, the possibilities of observing nuance in Brazilian society have evolved through the years. An important landmark in this process was the decision made by the IBGE in 1995 to release its household surveys microdata along with the Institute's tabulations and reports. This small but significant step gave individuals the freedom to look at the Brazilian social data from their own perspective, as opposed to a pre-established one. Nowadays, with the release of each PNAD (National Household Sample Survey, acronym  in Portuguese),  Brazilian society debates its own achievements and drawbacks with increasing interest and knowledge. The more democratic environment in the political arena and the increasing access to information (enabled by the so-called CITs communication and  information technology) has contributed to greater transparency and integrity in the public debate.

I remember reading in The New York Times in 1994 -- around the same time I began wearing those glasses -- articles on social issues, such as the determinants of women's unemployment or the weight of children, and I thought how distant Brazilians were from this type of information. At that time, Brazilians would think first and foremost about inflation rates, with a distorting effect on the senses and concerns of Brazilians' daily life.

The problem faced by analysts is that PNAD is a database with multiple dimensions, a complexity that makes it difficult to summarize its results into simple conclusions like: has (or has not) been an improvement in the life of Brazilians?. This is the challenge the present study intends to deal with. Our strategy is to use the tools provided by literature on poverty and social welfare to synthesize a broad spectrum of PNAD information into only one dimension: income. The promise is that, once integration is achieved, we will be able to divide the whole in its component parts, as if we were undoing a jigsaw puzzle, so that we can determine the relative magnitude of the causes that resulted in the changes observed.

In addition to finding an answer to the "why did it change?"question, we need to know whether the change took place before or after the last international crisis, going

beyond the date of the last PNAD, with factual data until July 2010. In a country like Brazil, large, diverse and with many inequalities, the evolution in country wide averages hides as much as it reveals. It is also necessary to know where the changes happened (region, state, type of dwelling, etc), who changed (women, elderly, African-Brazilians, etc), as well as the economic strata those people were and are now.

The present research analyzes the evolution of Brazilian economic classes A, B, D, E and, most importantly, C, which we called the new Brazilian middle class in a previous paper. In some cases, we use a finer classification than in our previous studies (C1, C2, D1, etc). These classes are defined according to the per capita income from all sources. A core part of the analysis is to divide income sources into work, rent, retirement pay, social programs, etc; another one is to use the visits to people's houses to record their consumer goods (cars, durables, dwelling, etc), their use and access to production assets (education, internet, formal employment card, etc). Those attributes taken together allow an analysis of how sustainable these changes are—an answer to the "to what extent did it change for good?" question. In this context, analyzing the crisis and the way out of it, using fresh data from PME (Monthly Employment Survey, acronym in Portuguese), permits testing the Brazilian social dampers against the great shocks that hit the world economy after September 2008 (i.e., the data of the previous PNAD available).

Some may argue—and they are not entirely wrong— that such reductionist strategy will turn PNAD's colorful picture into a black and white snapshot. We answer that argument quoting the advantages of looking at the trees, without losing sight of forest, which is the core of our strategy. Keep in mind that everyone can refract light to make a rainbow, at the end of which, according to the legend, there is a pot of gold.

In my opinion, the greatest moment for an empirical researcher is not when he confirms what was already known, but when he is surprised with something that was not. The feeling is much like when a boy finds a precious coin in the sidewalk that nobody had seen before. What I can say is that with the lens of household surveys, I found not only a precious coin at the end of this research but also the rainbow itself.

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**The New Middle Class in Brazil: The Bright Side of the Poor**

This present research website www.fgv.br/cps/nmc offers an interactive data set with a vast array of data. There are statistics for up to 2009 with extensions up to July 2010 which allow you to study the recent evolution in income distribution, how and where happened the main changes in poverty and the new Brazilian middle class, its financial possibilities, assets and aspirations.
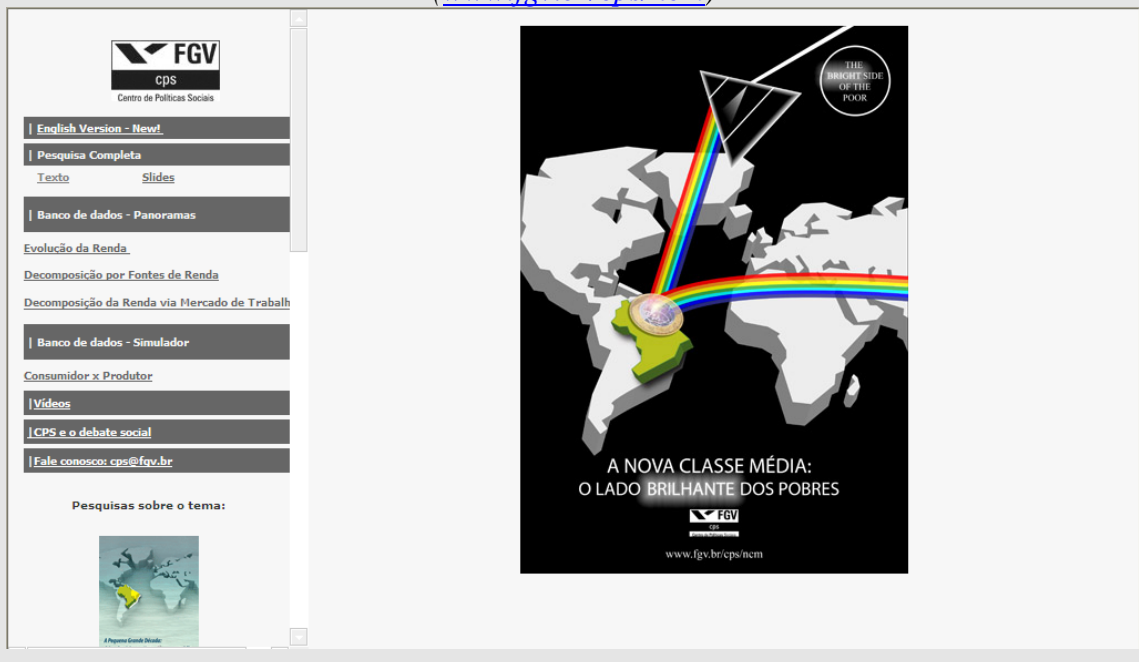


Watch the full presentation in video

*Portuguese version*
(*www.fgv.br/cps/ncm*)

# Vídeos of the New Middle Class

You can access other subtitled content at the videos page: interviews, presentations, and debate on the new middle class on the media.

# Chapter 1 – Brazilian Boom

Brazil is booming. In the first quarter of 2010 per capita GDP growth was 9% compared to the first quarter of 2009, or 11,7% compared to the last quarter of 2009. Growth is picking momentum now but has been going on since the end of 2003 recession. From 2003 to 2009 per capita GDP growth rate was only 2,88% per year. During this period income  directly calculated from national household surveys (PNAD) grew 4,71%  per year. These marked trend differences between GDP and per capita income amounted to 1,83% per year. In China and India happened the opposite during the last years when GDP growth surpassed the growth rates of income data found in household surveys (see chapter 2).

Brazilian income inequality has been falling steadily since (and only after) the very begin of the last decade. Between 2001 and 2009 per capita incomes of the 10% richest grew at 1,49% per year while the incomes of the 10% poorest grew at 6,79% per year.

**Variation of Average Per Capita Income by Deciles - Brazil (2009/2001)**
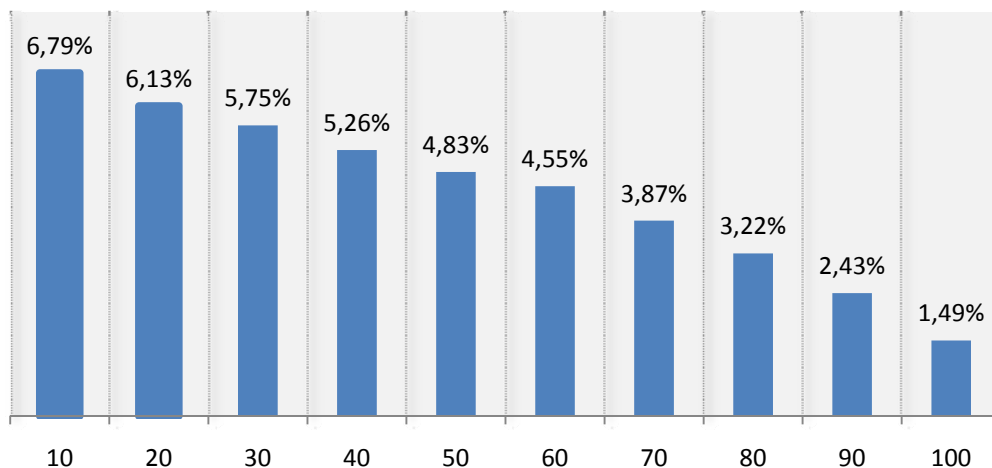


*Source: CPS/FGV from microdata of PNAD/IBGE*

The size of the Brazilian pie is growing faster while providing larger slices for the poor. Inequality in Brazil has been falling steadily since 2001.  Incomes are growing

more in traditionally excluded groups of Brazilian society such as non whites, women, those living in the poor northeast, in *favelas* or in the outskirts of Brazilian cities.

Below we exemplify that with a map across Units of Brazilian Federation of the cumulative growth of the average income between 2001 and 2009 (it corresponds to the Brazilian inequality component between states). The poorest States of the Northeast present the highest growth rates while the São Paulo the richest State one of the lowest.

**Increase of Average household Per Capita Income By States (all sources) – 2001 to 2009**
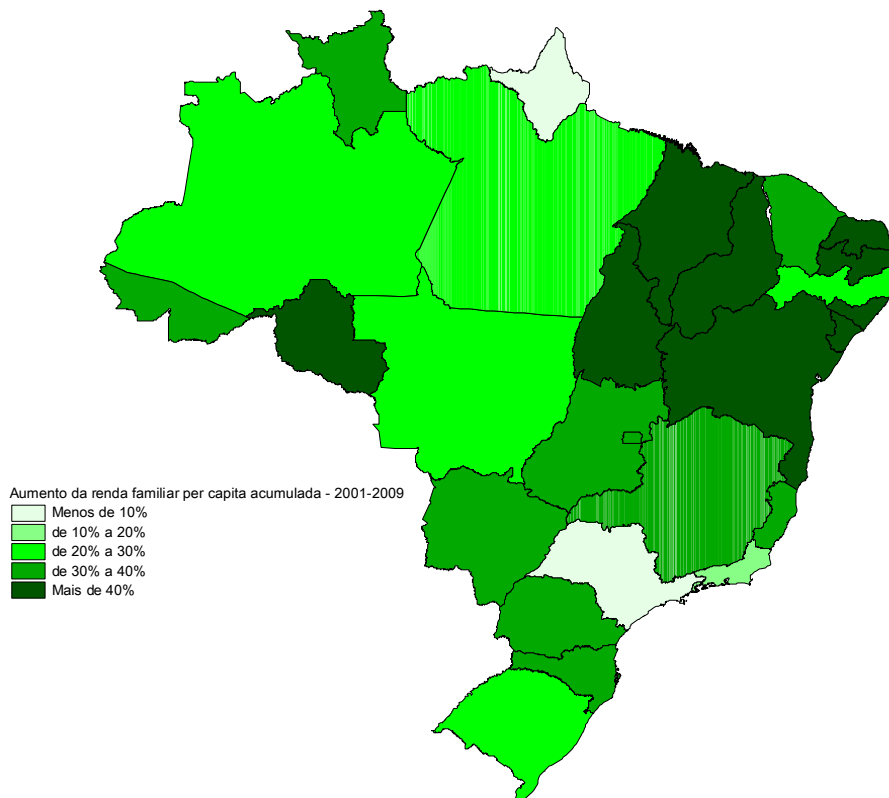


*Source: CPS/FGV from microdata of PNAD/IBGE*

Brazil is about to reach the lowest income inequality level since 1960, when the records started. Actually, inequality in Brazil remains among the top ten in the world, and it would take 30 years at the current growth rate to reach the U.S. levels. On the other hand, that means there is considerable growth potential for the Brazilian poor, possibilities that only started to be explored in the last decade.

## Inequality – Gini's Index
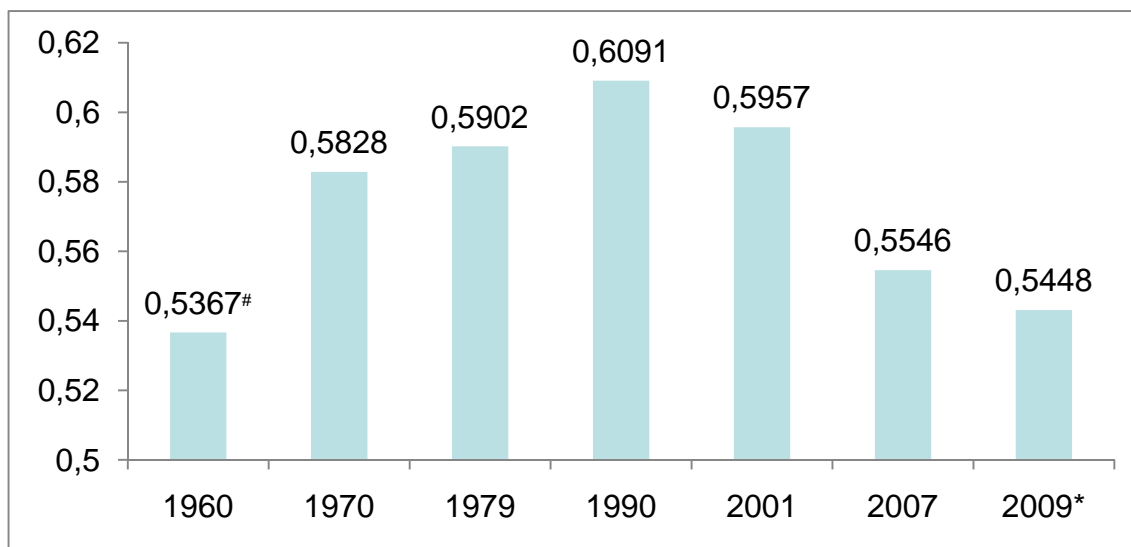


*Source: CPS/FGV from microdata of PNAD/IBGE and Census / IBGE*

\# Based in variation of individual incomes Gini observed between 1960 and 1970 Census extracted from Langoni 1973.

As a consequence of continuous growth and the decrease in inequality, there is also a constant fall in poverty rates, a trend that began at the end of the 2003 recession, when the number of poor, according to FGV's line, was 49 million, corresponding to class E in our economic class stratification methodology. After the recession during the first year of Lula da Silva's government, until 2008, 19.5 million people surfaced out of poverty. Last year, we added another million and got to 28.8 million poor, definitely still a significant amount. The poverty rate fell to 15.32% in 2009 from 16.02% in 2008, a decrease of 4.32% in a year of World crisis.

Looking at a higher point in the distribution, some 29 million people entered the so-called new middle class (Class C), between 2003 and 2009; 3.2 million of them, between the two last *PNAD*s. During the crisis, Class C grew proportionately more

(2.5%) than the other classes, reaching 94.0 million Brazilians in 2009—more than half the population (around 50.5%). In relative terms, classes A and B grew more (30.6%) from 2003 to 2009, with the incorporation of 6.6 million, reaching 20 million Brazilians (approximately 10.5% of the population).

**Economic classes evolution**

|  | 2009-2003 | 2008-2009 |
|---|---|---|
| Class E | -45.50% | -4.32% |
| Class D | -11.63% | -3.00% |
| Class C | 34.32% | 2.49% |
| Class B | 38.51% | 3.49% |
| Class A | 40.99% | 0.18% |

**Population Difference by Economic Classes**

|  | 2009-2003 | 2008-2009 |
|---|---|---|
| Class E | -20,481,069 | -1,022,145 |
| Class D | -2,431,443 | -946,083 |
| Class C | 29,063,545 | 3,172,653 |
| Class B | 3,391,694 | 443,181 |
| Class A | 3,253,636 | 106,487 |

*Source: CPS/FGV from microdata of PNAD/IBGE*

Classes ABC taken together, meaning the middle and upper strata, increased by 35.7 million people between 2003 and 2009, or about 3.7 million more than the 31.9 million in the 2003 to 2008 period. In comparison, the basis of the pyramid, classes D and E, fell from 96.2 million in 2003 to 73.2 million in 2009—2 million of which during the crisis year. It means that, in the last seven *PNAD*s, the equivalent to more than half the population of the United Kingdom was added to classes ABC. The

population pyramids below show the evolution of the Brazilian population, divided into several economic strata.

**The Population Pyramid divided in Economic Classes**



*Source: CPS/FGV from microdata of PNAD/IBGE*

**Economic classes evolution**



*Source: CPS/FGV from microdata of PNAD/IBGE*

Two reflections are possible, according to the numbers above: one is political, and the other, economics. The 94.9 million Brazilians in the new middle class

correspond to 50.5% of the population. That means that the new Brazilian middle class includes the median voter, believed to be the one that decided an election runoff, but also that it could decide the election alone. From the standpoint of economics, this is also the dominant class, because it concentrates over 46.24% of the total Brazilian purchasing power during 2009 (45,66% in 2008), more than classes A and B taken together, which held 44,12%.Classes D and E today hold 9.65% of purchasing power, a decrease from the 19.79% immediately before Plano Real was launched.

But how did those changes affect Brazilian pocket after the world crisis? Data about family income gains for the six most important metropolitan regions in Brazil indicate that, in January 2009, Brazilian pockets were severely hit, resulting in a 6.8% increase in poverty during that month alone. However, since February 2009, Brazil kept away from the crisis and returned to its pre-crisis growth rate. Taking 2009 as a whole all improvements stagnated but were not reversed.

If we go beyond the last figure available in *PNAD* or even the GPD, Brazil is, right now, doing better than it did during the previous golden period: in the 12 months ending in July, 2010, poverty (i.e., class E) decreased 11,3% and the AB increased 13%. This reflect a combination of a 3.4% growth rate of the new middle class (i.e., class C). All that is due to the fact that income is growing 25% faster and inequality decreasing 50% more than in the years between 2003 and 2008.
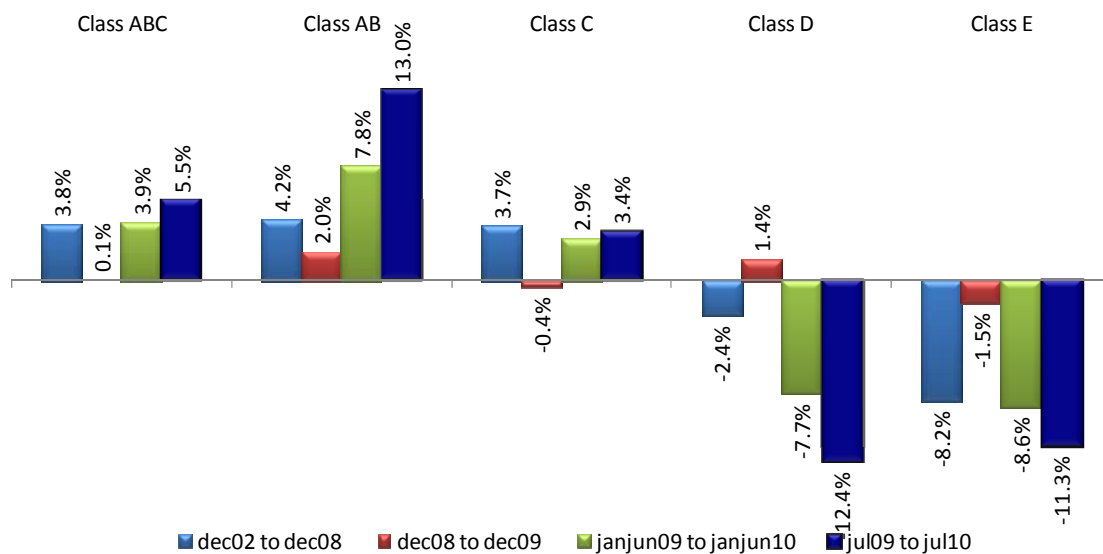


*Source: CPS/FGV from microdata of PME/IBGE*

How sustainable is this inclusive growth process? First, one of its key features is formal employment generation which doubled after 2004 with no labor reforms attached to it. Brazil is currently breaking month after month its previous highest record by 20 to 25%. It generated nearly 1,95 million jobs in the first eight months of 2010 more than any other single year taken as a whole. A conservative forecast for 2010 is 2,3 million net new records of formal employment generation which is perhaps the main symbol of the emergence of a new middle class in the country.

**Net Generation of Formal Employment - BRAZIL Yearly (2000 to 2010*)**



657.596    591.079    762.415    645.433    1.523.276    1.253.981    1.228.686    1.617.392    1.452.204    995.110    1.954.531

2000   2001   2002   2003   2004   2005   2006   2007   2008   2009   2010*
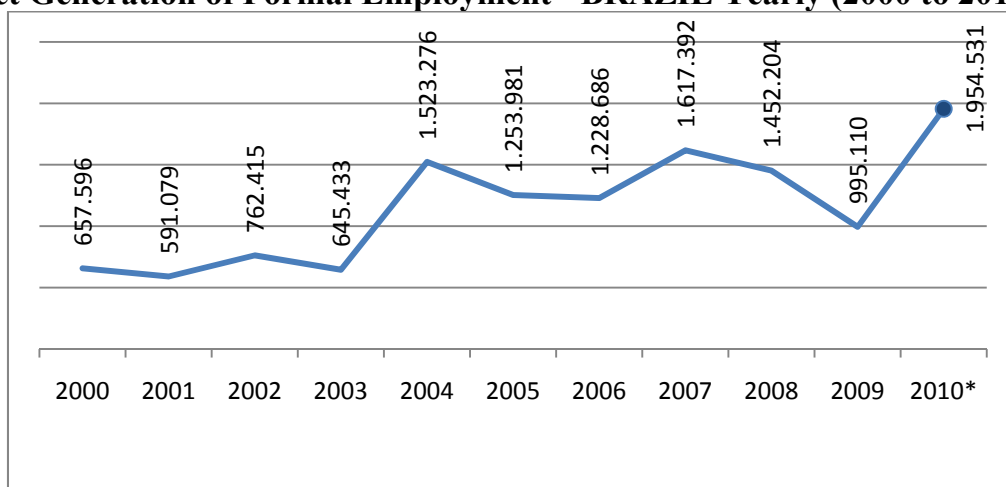
*Source: CAGED / MTE    * up to august only*

Improvements on the distribution of education are the main variable available to explain income distribution. Brazil trends in the level (and inequality) of years of schooling indicate a continuation of this movement towards the future. Increases in the year of schooling explain in the 2003-09 period 65,3% among the 20% poorest mean income increases of 7.95% against 24% of the 20% richest mean income increases of 3,66%. It is true that Brazilian has still many education deficiencies, low savings rates and a vast array of regulatory deficiencies. But for future growth prospects what matters is not the level of these variables but how it changes across time compared to other countries.

**Evolution (years) Average Years of Schooling Brazil - 1992-2008**
**Age 25 years or more**
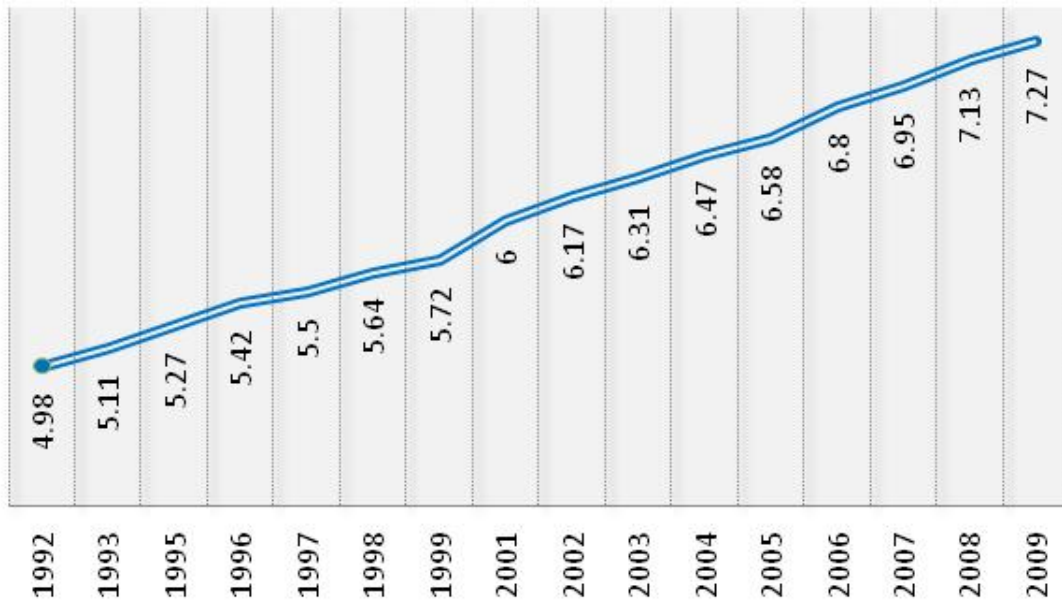


*Source: CPS/FGV from microdata of PNAD/IBGE*

One may also use PNAD to explore the evolution of a vast range of different stocks of different assets and goods, as a basis for a broader view on whether life styles acquired are sustainable, or not. Translating the wealth of data about the evolution of different assets inventories into comparable indexes by using (log) income equations as a basis and per capita incomes as a *numeraire* allows to synthesize different dimensions. These compound indexes grouped two perspectives—consumer and producer sides., using one of La Fontaine's fables as a metaphor, the survey allowed us to divide Brazilians into ants and crickets. We showed that, in the picture, Brazilians are more similar to crickets, but the movie about the last five years shows a gradual metamorphosis towards ants. The progress in the Brazilian ability to generate income increased, according to our index, 31.2% from 2003 to 2009, and the consumption potential increased 22.59%. These data reveal the producer's side increased 38% faster than the consumer's. During the crisis year, these indexes increased 3.05% and 2.49%, respectively. In sum, Brazil is becoming a nation of consumers, buying cars, computers and houses with cash or on credit. But it is not that Brazilians are going mostly to shop using credit but that those who went to school are getting now formal jobs.

By the same token disentangling the relative importance of different income sources for the advance of income based social indicators in the country. Results indicate that, despite the strong growth of income from social programs and retirement pay linked to the minimum wage, the amount due to work is close to the significant income growth of 4.72% during the 2003-2009 period. The average work income increase of 4.61% per year, per Brazilian, which corresponds to 76% of average Brazilian income, provides a sustainability basis for life conditions in addition to official income transfers.

How about per capita income inequality? Once more, the present decade may show us the way to keep this process going, by applying a decomposition methodology of the Gini index variations. Labor earnings explain two thirds (66,86%) of the total inequality reduction between 2001 and 2008, next in come the contribution of social programs with emphasis on the *Bolsa Familia* program (Family Grant) and its predecessor *Bolsa Escola* (School Grant) among others, that explain 17% of the higher degrees of equality obtained  while social security benefits explain 15,72% of overall reduction of income inequality, and the remaining income account for a residue under 1%.

It is interesting to incorporate in the analysis not only the impacts of different income sources, particularly the official transfers from the Brazilian government, on the inequality movements, but also its costs to the public accounts. When we do that we realize that each percentage point obtained from Social Security Benefits expenses costs 384% more the cost obtained from Bolsa |Familia and social programs expenditures. Leaving political considerations aside and possible impacts of the Minimum Wage that are the *numeraire* of most Social Security benefits on income distribution, the unprecedented fall of Brazilian  inequality during the last decade could be higher if there were a shift on the new flows of resources from social security adjustments to better  target programs such as Bolsa Familia.

It is true that Brazilian growth rates still lag behind those of other BRIC countries, especially China. However, Brazilian quality of growth is arguably better than China in several respects: better treatment of the environment and of labor coupled with rising equality. Brazil is a democracy that has learned the hard way how difficult it is to promote sound policy within the messy workings of our system. Historically,

Brazilian main problems were of a collective nature such as inflation, informality and inequality which are not in anymore[2]. Brazil still faces many obstacles, including a weak education system, low rates of savings, and a tangle of regulatory impediments. But for future growth prospects what matters is not the absolute level of these factors, but how they evolve over time. Brazil can advance vertically if picks the right tracks towards its frontiers of possibilities.

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[2] Although, economic stabilization happened in 1994, Brazil presents the highest cumulative inflation rates from 1970 to 2008 in the world, biting Argentina, our traditional rival in this field, loosing only to Congo.

# Chapter 2 – About the Decoupling between Mean PNAD´s Per Capita Income and GDP Growth Rates

The magnitude of the resumption of growth in the 2003-08 period depends on the database used: GDP grows 3.78% in per capita per year, slower than the National Household Sampling Survey (PNAD), 5.26 % per year, also discounting population growth and inflation[3]. According to PNAD 2009 income grows more once gain than GDP: -1.5% of per capita GDP against a positive growth of 2.04% in PNAD. In China and India happened the opposite during the last years when GDP growth surpassed the growth rates of per capita household income found in household surveys. Another advantage of PNAD is to allow one to look at the distributional issues. In this aspect in 2009, the income of the 40% poorest grew at 3,15% in the last year against 1,09% of the 10% richest segment.

In order to reconcile this statistical problem, we could look into the growth of GDP elements that are not captured by the PNAD – i.e. consumption movements unrelated to income. The issue here thus concerns the order of magnitude of the observed discrepancy. The problem is that these explanations increase the paradox, instead of reducing it. In particular, consumer credit boom points to an increase in consumption expenses that are larger than increases in income. In addition, the Bovespa index increases suggests that the Brazilian economy has not undergone a strong reduction of income gains that could explain part of this discrepancy in growth rates.

PNAD income is tabulated from nine direct questions about how much people received from different income sources. PNAD, however, with its well-balanced sample of more than 400,000 individual answers, has not undergone a single methodological change, nor has the INPC (inflation index) been used in its adjustment. The Chinese-like appearance of the PNAD statistics is reflected in other indicators for 2003-2009 that

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[3] Or cumulatively in the five years 8,8 percentage points larger than per capita GDP, even after upward adjustments made to the national accounts. In any case, either Brazil is growing more than suggested by its GDP, or poverty is not falling as much as suggested by the PNAD figures.

are put in the appendix , such as retail sales, the number of credit cards  and domestic flights

What appeases us is that, in the total 1995-2007 period, the two series converge to closer numbers up to the third decimal**,** as the index numbers with a 100 basis in 1995 (stability when deflators and changes in the monetary pattern do not constitute a source of noises) show in the graph below

## Per capita household income PNAD* X Per Capita GDP
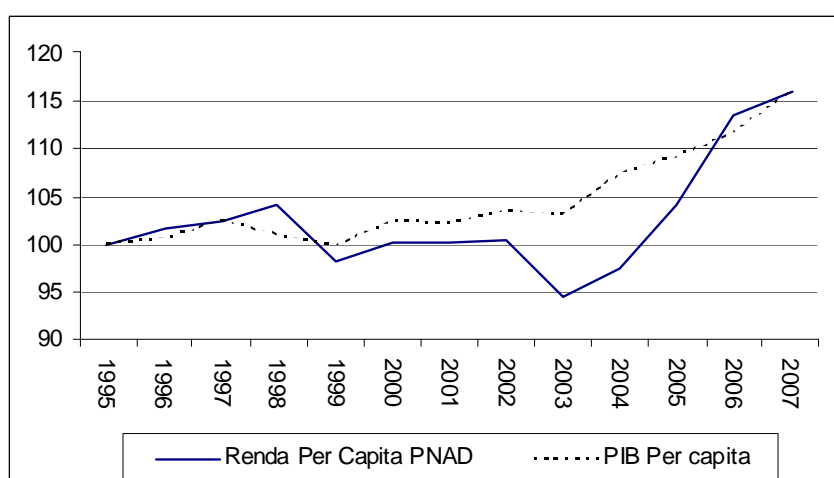


*Source: Banco Central, IPEA e IBGE. * Deflated by INPC centered at the end of the month (see Neri 1995).*

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**Sen-Stiglitz report**

Amartya Sen and Joseph Stiglitz, presented the results of a report commissioned by OECD. The Commission on the Measurement of Economic Performance and Social Progress had another 21 renowned economists, including Angus Deaton and James Heckman.  The importance of this report lies in the warn of the economists themselves about the need to revisit the current measures of economic performance that revolve around the Gross Domestic Product (GDP) so that other figures are also considered when assessing a population's well-being.

Recommendations of the Stiglitz-Sen report resonate in this, namely:

- Emphasize the income and consumption perspective of the household in order to better assess material living standards. This assessment is more precise to the extent that real per capita GDP does not necessarily reflect movements in real household income;
- Income, consumption and wealth measures must be substantiated by indicators that reflect their distribution – a concern of the Center.

Lastly, the authors of the report strongly recommend the combination of objective and subjective measures of well-being, through the use of questions that depict the evaluation of people about their own lives, in order to obtain a more faithful portrait of life quality.

# Chapter 3 - Chronicle of the Crisis: Epilogue

**"2009, the year of the crisis was a sudden stop but all indexes have returned to the pre crisis 2003 to 2008 growth rhythm"**

**"Completing one year after the effects of instability left Brazilian pockets: Year I after the Crisis (A.C.)."**

**"We are about to experience the lowest inequality of our historical records that begun with the 1960's census"**

The research www.fgv.br/cps/c2010 made a retrospect of the main changes of movements in Brazilian budgets in macro terms (the forest, the Brazilian society as a whole), meso terms (the woods, specific sectors, such as industry X finance, capitals X suburbs, etc) and individuals (the trees – this is, tracking each person's movements across time). Looking at the big trends of the Brazilian forest, we started in January 2009 with strong deterioration of all indexes based on per capita income followed by gradual recovery which by chance resulted in finishing the year at a similar level as the previous year. This *"tie with many goals"* happens to a wide range of indexes: average (-0.3%) and income inequality (0%), shares of social classes AB (2%), C (-0.4%), D (1.4%) and E (-1.5%), the last one equivalent to the proportion of the poor. Despite the geographic coverage and source of income data restrictions to its work in the six main capitals of Brazil, PME (Monthly Employment Survey) is a good predictor to PNAD (National Survey of Household Samples). This adherence is not just for covering 80% of PNAD income, but for the fact that income from social initiatives and retirement has followed closely the boom observed in the labour market. Through samples of over 100 thousand people interviewed each month, PME allows an average 17 month anticipation before the release of PNAD data.

**Inflexion –** Returning to the analysis of social conjuncture, not due to the lack of other interesting subjects but because of the inflexion already observed in the begin of 2010: if we compare February 2010 with February 2009, we find very distinct results from the comparison of December 2009 with December 2008, despite having overlap of 10 months in the compared series. As the graph below demonstrates, in annual growth terms, we are back at the rhythm of improvement of the expressed series, similar to the pre-crisis period, between December 2002 and December 2008. Otherwise: class E is reducing in a slightly faster rhythm now (-8.7% against -8.2%) like class D, which is showing a bigger reduction (-4.9% against -2.39%). Looking at the top of distribution, Class C is rising at a slower speed now (2.4% against 3.8%) but class AB faster (7.2% against 4.2%). This means we are out of the inertia of the crisis to the rhythm of the great little decade that occurred between 2003 and 2008.

If we portrait the comparison between January 2009 and 2010, with 11 months of superposition against the other two, December 2008 and 2009, and February 2009 and 2010, it looks more like the latter. The difference is granted by exchanging the passage between December 2008 and January 2009, when the crisis hit with the strength of an undertow, to the December 2009 to January 2010 series. This way we are completing a year after the instability effects have left the Brazilians' pockets. We just completed year one after the crisis (A.C.).

The crisis was not a ripple, nor a tsunami, but an undertow as strong as temporary. From the international start of the crisis on September 15th 2008 until its arrival on the PME series took three and a half months, a similar gap to the arrival of the Asian crisis of September 1997 to the same series. The difference is that the effect of the latter lasted for five years in our series and the one from the recent crisis started to revert after one month.

But what explains the recent improvement (besides the pre-election climate)? The similarity of average and inequality movements together in the last 12 months with the previous period is even closer. The per capita income increased 7.7% last year, compared to 3.8% during the pre-crisis period. Income decentralization measured by the Gini coefficient varies almost the same -1.5% in the two periods. The Gini coefficient worsened in January 2009 (+2.5%) and then stayed leveled from December 2008 to

December 2009. Comparing the last 12 months ended in May, it varies -1.5%, the same rate of the boom in the previous year (-1.4%), the period known in Brazil and elsewhere as the period when inequality fell in Brazil. Both points are relevant: the first one because it goes beyond the recently-published GPD period, ended in June 2010, while none of standard statistics used in conjunctural analysis captured inequality.

Because every measure inequality entails a specific value judgment associated to the idea of social welfare from which it derives, the robustness of results should be carefully checked. The Theil-T index, which is more sensitive to changes at the lower tail of the income distribution, decreased 3.2% per year between December 2002 and December 2008, and 6.2% from February 2009 to February 2010, indicating the decrease in Brazilian inequality is growing faster. It is important to highlight this issue, because income decentralization was possibly the biggest socio-economic Brazilian innovation in the last decade. Data from the post-crisis period suggest the equalization trend will continue.

Obviously, we must take into account the constraints imposed by the geographical coverage and on income concepts used in PME.

**Class ABC** · **Class AB** · **Class C** · **Class D** · **Class E** · **Income** · **Gini** · **THEIL**

Class ABC: 3.8%, 0.1%, 3.2%, 3.4%, 3.7%, 4.8%, 4.2%, 4.4%, 5.5%

Class AB: 4.2%, 2.0%, 5.5%, 7.2%, 5.3%, 9.2%, 10.3%, 9.7%, 13.0%

Class C: 3.7%, -0.4%, 2.5%, 2.4%, 3.3%, 3.6%, 2.5%, 3.0%, 3.4%

Class D: -2.4%, 1.4%, -4.6%, -4.9%, -8.4%, -9.3%, -8.8%, -10.0%, -12.4%

Class E: -8.2%, -1.5%, -7.9%, -8.7%, -7.2%, -10.0%, -8.8%, -9.0%, -11.3%

Income: 3.8%, -0.4%, 0.9%, 3.9%, 3.6%, 5.1%, 4.6%, 3.7%, 7.7%

Gini: 0.0%, -1.6%, -1.8%, -1.5%, -1.5%, -2.2%, -1.9%, -2.2%, -1.4%

THEIL: -4.2%, -1.8%, -7.2%, -6.2%, -3.8%, -5.8%, -3.4%, -4.3%, -2.7%

Legend: ■ dec02 to dec08 ■ dec08 to dec09 ■ jan09 to jan10 ■ feb09 to feb10 ■ mar09 to mar10 ■ apr09 to apr10 ■ may09 to may10 ■ jun09 to jun10 ■ jul09 to jul10

*Source:* CPS/FGV from microdadta of PME/IBGE

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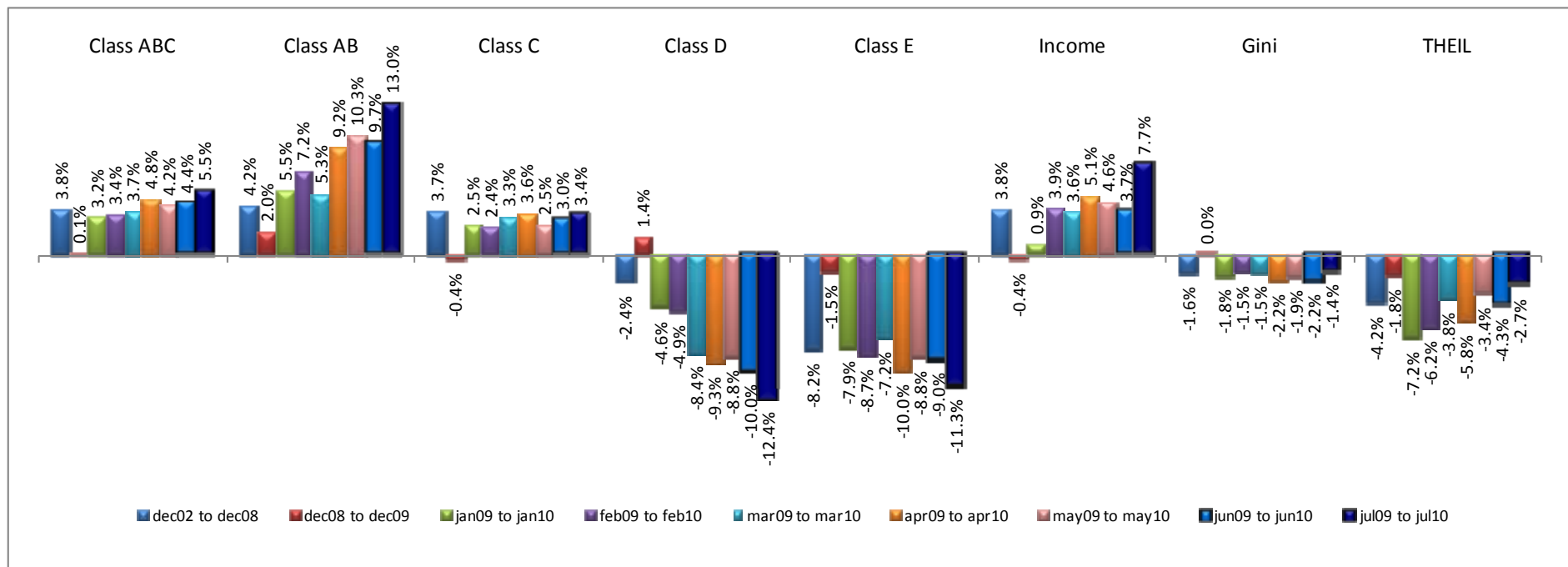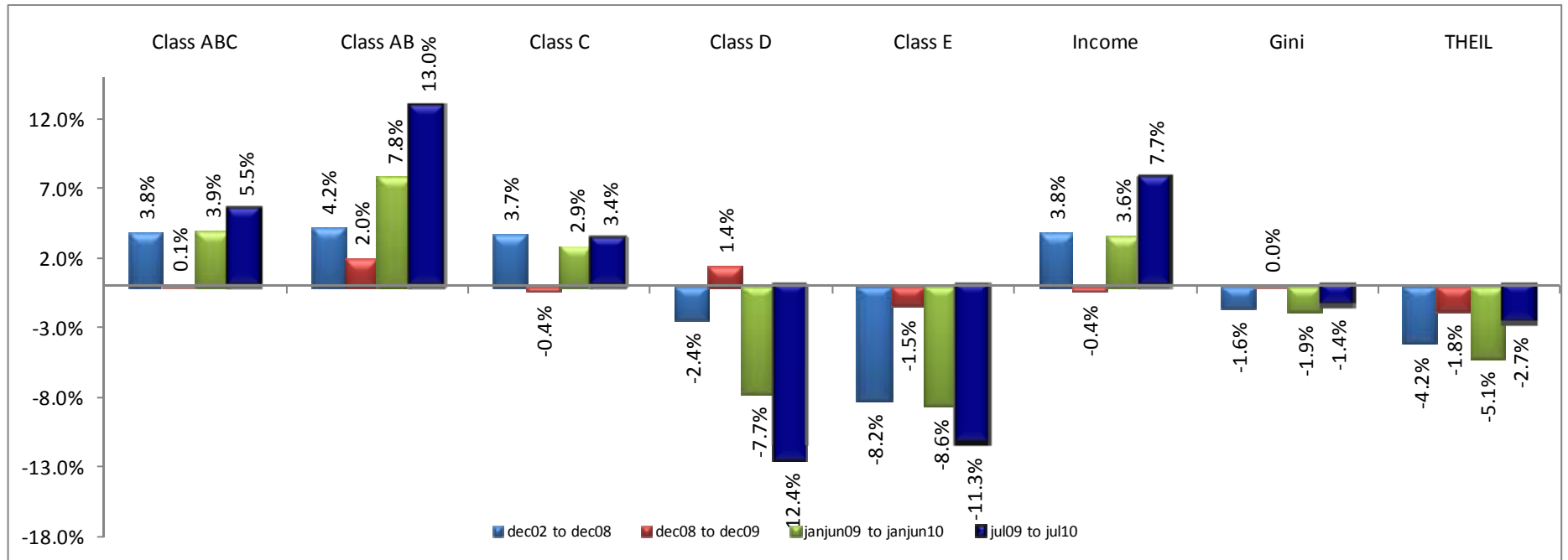
*Source:* CPS/FGV from microdadta of PME/IBGE

# Chapter 4 – Methodological Issues Related to Economic Classes Measurement

**Overview**

There are at least two perspectives to conceptualize economic classes in general and the so-called new middle-class in particular: Objective and subjective approaches. The later one is through the analysis of people's attitudes and expectations. This kind of approach was much developed in the 1950s' and 1960s' by George Katona, a behavior psychologist who was greatly by admired James Tobin. Following the same line of reasoning, Thomas Friedman, international columnist at the New York Times in his best-seller book "The world is flat", defines middle-class more than merely by its present living conditions, but also for its hoping to be in a better position in the future. This ascending social structural mobility would be just like realizing the so-called American Dream, understood as the possibility of social ascension in each country.

We proposed before the use of measures of life quality from the new line of surveys as the Gallup World Poll (IPSOS similar) whose advantage is its high international comparability for applying the same questionnaire to a great number of countries. This advantage is also shared by the regionally based surveys, such the LatinBarometer in Latin America and the EuroBarometer in the old continent. In particular, we suggest the use of direct measures, such as the expectation of happiness five years into the future in comparison with the current level of happiness – by asking questions where the person may attribute a subjective grade from 0 to 10 about their respective satisfaction with life. This kind of analysis was used in the Future Happiness Index (IFF) that we developed for a project with the Inter-American Development Bank, based on a sample of more than 132 countries covered by the 2006 Gallup World Poll. An update of this index for the port crisis period will be released shortly. For now, we can say the data indicate that the index for the middle-class in Brazil, measured by the difference between the current and future happiness levels, was high in relation to other countries.

A second way to define the social classes (E, D, C, B and A) is by its consumption potential, such as the Brazil Criterion in which the middle-class is called C Class. This stratification is implemented according to the impact of goods on measures of access to durable goods and their respective amount (TV set, radio, washing machine,

fridge, freezer, DVD or video player), toilettes, domestic servants and  the level of education of the head of the household[4]. This criterion estimates the weights from a Mincerian equation   (log of the total household income). CPS proposes a complementary conceptualization to measure the evolution of the new middle class in Brazil, also from a producer's point of view – that is, the capacity to keep this consumption potential through time. In this yet unpublished work, apart from testing the measurement of the middle class based on a combination of elements such as income and access to consumer good traditionally used, we also propose to measure the middle class based on the capacity of generation and sustainability of wealth in the longer term. In the first element, there is access to public or private university, access to an education of quality (private?) to aspects of the Information and Communication Technology era, such as computers with Internet connection and beyond the current income, the permanent income based on fixed socio-demographic features (like gender, age, region, etc. but especially education stock). Concerning the sustainable aspect of the family financial situation in the longer term, there is access to formal jobs that ensure a higher level of social protection, access to private pension, to housing credit, lease or freehold (with a minimum standard of quality: toilettes, type of building, etc.), health insurance. This kind of concern with education and work placement is present in the criteria applied in England, Portugal and India. The innovating aspect of this methodology is its capacity to look at symbolic aspects of the middle class, such as the employment registration booklet, university entry, or access to ICT, as well as to combine these with social status aspects related to the private demand for good, which were previously a monopoly of the State, such as social security, health, education and housing credit. Another innovation is the capacity to measure on a national scale each mentioned component, to study its interaction and the aggregation of the same ones into synthetic indexes about the size and distribution of the middle class; as well as to look deeper into the details of its determining factors (for instance, to go beyond the statistics concerning access to education to see how much it costs) and to consider the interaction of these diverse components, monitoring them through time.

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[4] These variables are measured by the demographic Census, which facilitates the spatial classification of the families' purchasing Power, but it is not well covered by the PNAD, for instance. In the hierarchical model that imputes lacking income, as developed by IBGE, in the Census and considered in the Census 2000 microdata, the most relevant variables are the level of instruction of the person taken as a reference for the household and the number of toilettes.

**Using Income as a Criterion**

There are some considerations in defining and using the income criterion, whether to define classes or to translate it into consumption potential and ability to generate (and maintain) income.

First, the class concept refers to family and not individuals, for inner solidarity affects the transformation of income into consumption. A person either belongs to a middle class family or not.

Second, we also follow the social welfare literature: we use per capita income, and not the total income for the family or household, to distinguish families with the same total income and a different number of members. For example, in our classification, a family with total income of R$ 1,700 divided among 13 members will use it only for subsistence of its members and will be considered poor. On the other hand, another family, with the same income but only one member, will be able to buy some superfluous items with the same money. If we used the concept of total unit income, we would be giving equal treatment to people in very different circumstances. Significant classification errors arise when the total household income is used instead of the per capita concept. This error represents, in the different income strata: 29.2% in classes AB, 20.5% in class C, 49% in class D and 12.4% in class E. The greatest problem here is that, with the systematic decrease from 4.4 to 4.04 persons per household between 2003 and 2009, due to the current transition in population trends, the total income growth of 21.09% accumulated during the period underestimates the total income growth of 31.88%. This 10-point difference, or 50% of the total income growth registered, shows the size of the error made in the period.

Third, we avoid using minimum wage ranges, common in Brazilian literature, for at least two reasons: The purchasing power of the minimum wage has changed constantly over time. In 2004, when we launched the study *Mapa do Fim da Fome II*, (End of Hunger Map) based on information from the 2000 Census, our poverty line exceeded half a minimum wage (in 2000 prices, it was 75.5 reais—the minimum wage was R$ 151)—in comparison with R$ 79 in our poverty line). It must be kept in mind that the minimum wage is stated in monthly terms in Brazil. In today prices, our poverty line represents little more than 25% of the minimum wage (about R$ 127.5— minimum wage is R$ 510— and our line, R$ 140, adjusted according to INPC (National

Consumer Price Index, acronym in Portuguese) published by IBGE, the official Brazilian statistics agency. That means the use of minimum wage as cash fails to preserve purchase power constant over time, which could be the first reason to use it as absolute poverty line. The second reason why we avoid using a minimum wage range is that it does not usually take into account regional differences in the cost of living, as it appears in our economic classes and poverty indices.

**Income Based Economic Classes**

Contrary to the analysis of relative income distribution where we map the relative share of each group in the total income (like, for instance, the 10% richest who own almost 50% of the income, etc.), here we focus on the share of the population which is above determined fixed parameters for the whole period. In other words, we are concerned with the absolute income of each person. The current approach is similar to that used in the analysis of absolute poverty, only that we are concerned also with other frontiers, such as those that determine the entry into the middle class and the upward movement towards the upper-class. In the relative approach, the sum of the parts totals 100% of something relative per month, while in the absolute approach applied to the several segments in the social pyramid, they are indexed by an absolute value valid for all months. These absolute values are parameters for what is to live in poverty, in an intermediate group between poverty and the middle class, which we call here the remediated, the middle class and the upper-class. As our work concerns a period of strong growth in the average income, the two approaches, relative and absolute, present truly distinguished results. Each one of these situation tend to happen, respectively, in the beginning and in the end of a period. To use an analogy, in the relative distributive analysis, we may use a graph of a fixed-size cake, where for a group to win, another must loose its share. In the absolute analysis, used here, apart from the distributive dance, the size of the cake can also change. What lies behind the result is that, apart from people with lower income having gained a greater share of the cake (reduction in inequality), the same cake has increased its size (growth). The cake has grown to a medium-sized format; but for the optimists, this is now a large cake. In the present analysis, we are not only concerned with its distribution, but also with the amount of cake owned by the strata in society.

**Definition of Economic Classes**

Contrary to the analysis of relative income distribution where we map out the relative share of each group in the total income, we focus here on the share of the population that is inside fixed parameters for the whole period. In other words, we are concerned with the absolute income of each person. The present approach is similar to that used in the analysis of absolute poverty, only we are also concerned with the other frontiers likes those that determine the entry into the middle class and the exit of this group towards the upper class.

We could make an analogy in which the relative distributive analysis is a fixed-sized pizza graph where for a group to win, another has to diminish. In the absolute analysis here used, beyond the distributive dance, the size of the pizza can change. What is behind the result is that, not only have the lower income population won a relative greater slice of the pizza (inequality reduction), but the same has increased its size (growth). In the present analysis, we are concerned not only about the relative slice, but about the quantity of the pizza owned by each social strata. Given that our classification is based on income from work, we refer to the group in active age between 15 and 60 years old.

The Class C is the central class, below A and B and above D and E. In order to quantify the layers, we calculate the household per capita income from work, and then express it in terms of total household income from all sources. The central C layer is located between R$ 1126 and R$ 4854 at today's average Brazilian prices (deflated regionally) . Our class C is located immediately above the 50% poorest and 10% richest at the turn of the century. Heuristicaly, the boundaries of class C would be the frontiers to the Indian and Belgian side of our Belindia. Here, we investigate the migrations between these different Brazils. Our class C receives on average the average income in society, that is, it is the middle class in the statistical sense. Class C is the closest image to the average of the Brazilian society.

**Definition of Economic Classes**

**Total Household Income from All Sources**

**Earnings Brackets**

|         | Inferior | Superior |
|---------|----------|----------|
| Class E | 0        | 705      |
| Class D | 705      | 1126     |
| Class C | 1126     | 4854     |
| Class B | 4854     | 6329     |
| Class A | 6329     |          |

Given Brazilian high inequality, the average income in Brazilian is high in relation to the inferior strata of the distribution. In comparison with the rest of the world: 80% of the people in the world live in countries with per capita income levels lower than Brazil's. Brazilian income distribution is close to that observed in the world. We have an adjusted income by purchasing power parity (PPP) similar to the World's and the Brazilian Per Capita Income based Gini is similar to those observed between per capita GDP and PPP among these countries. Our middle class would not be different to that observed in the world using the same methods. One of the most recent study about the World middle class by Goldman Sachs (The Expanding Middle) generates results that are close to our class C, or middle class: their R$ 859 to R$ 4296 against our R$ 1064 to R$ R$ 4591 at the time, both expressed in reais at Great Sao Paulo at August 2008 prices. Other international studies vary greatly about the definition of the middle class from R$ 115 to R$ 516 in the Barnajee & Duflo study from the MIT in 2007 up to R$ 2435 to R$ 10025 from the Banco Mundial (Global Economic Prospects, 2007). The latter is closest to the definition of middle class in the developed countries, according to the Goldman Sachs study. Our class C is within their limits that vary among themselves. Some look at our class C and see it as a low middle class, and to our class B and see it as an upper middle class. The most important is to have a consistent criterion. In any case, a person belonging to our class A, who considers her/himself to be middle class, could look for the words *Made in USA* behind his mirror. According a previous study using PME, the share of class C rose 22.8% from April 2004 to April 2008, in the same period our class A and B rose 33,6%. As we will see, similar results hold for PNAD. Therefore, for those who think that the middle class is richer than our C classc, the conclusion that the middle class grew is not affected – quite the contrary. Long story, short: the numbers below show the boundaries of the economic classes measured in

terms of the total household income from all sources per month (quickly followed by an explanation):

In the present research, we did explored other aspects that are associated with two lines of research: first the above mentioned subjective measures of middle class and labor mobility based on longitudinal data (see both explored in www.fgv.br/cps/2010 ). We explore consumption and income generation approaches in   chapters 7 and  8 explained in the overview  and income based class in the next two chapters.

# Chapter 5 - Monitoring Income Based Economic Classes

Contrary to the analysis of relative income distribution where we map the relative share of each group in the total income (like, for instance, the 10% richest who own almost 50% of the income, etc.), here we focus on the share of the population which is above determined fixed parameters for the whole period. In other words, we are concerned with the absolute income of each person. The current approach is similar to that used in the analysis of absolute poverty, only that we are concerned also with other frontiers, such as those that determine the entry into the middle class and the upward movement towards the upper-class. In the relative approach, the sum of the parts totals 100% of something relative per month, while in the absolute approach applied to the several segments in the social pyramid, they are indexed by an absolute value valid for all months. These absolute values are parameters for what is to live in poverty, in an intermediate group between poverty and the middle class, which we call here the "remediados" (or remediated), middle class and the upper-class. As our work concerns a period of strong growth in the average income, the two approaches, relative and absolute, present truly distinguished results. Each one of these situation tend to happen, respectively, in the beginning and in the end of a period. To use an analogy, in the relative distributive analysis, we may use a graph of a fixed-size cake, where for a group to win, another must loose its share. In the absolute analysis, used here, apart from the distributive dance, the size of the cake can also change. What lies behind the result is that, apart from people with lower income having gained a greater share of the cake (reduction in inequality), the same cake has increased its size (growth). The cake has grown to a medium-sized format; but for the optimists, this is now a large cake. In the present analysis, we are not only concerned with its distribution, but also with the amount of cake owned by the strata in society.

## Class Stratification

We prefer to use references regarding population percentage distribution during a base-year that will remain, over time, as we explain bellow. Contrary to relative income distribution analyses, in which we map the part of each group in the total income, we focus on the part of the population that fits certain parameters for the whole

period. That means we are concerned about the absolute income of each person. This approach is similar to the one used to analyze absolute poverty, but we are also concerned with other borders, such as the ones that determine the entrance to middle class and de way out of it to upper class. To draw an analogy, in relative distributive analysis, we have a pie chart where, for a group to increase, the other has to decrease.

**Definition of Economic Classes**

**Total Household Income from All Sources Earnings Brackets**

|         | Inferior | Superior |
|---------|----------|----------|
| Class E | 0        | 705      |
| Class D | 705      | 1126     |
| Class C | 1126     | 4854     |
| Class B | 4854     | 6329     |
| Class A | 6329     |          |

Classes ABC taken together, meaning the middle and upper strata, increased by 35.7 million people between 2003 and 2009, or about 3.7 million more than the 31.9 million in the 2003 to 2008 period. In comparison, the basis of the pyramid, classes D and E, fell from 96.2 million in 2003 to 73.2 million in 2009—2 million of which during the crisis year. It means that, in the last seven *PNAD*s, the equivalent to more than half the population of the United Kingdom was added to classes ABC. The population pyramids below show the evolution of the Brazilian population, divided into several economic strata.

## The Population Pyramid divided in Economic Classes

**2003**
13,322,409
65,871,283
96,204,328

**2008**
19,418,071
91,762,175
75,260,044

**2009**
19,967,739
94,934,828
73,291,816

■ Class DE    ■ Class C    ■ Class  AB

## Economic classes evolution

— Class AB/C    — Class D/E

62.1
37.9
59.6
61.1
49.22
38.9

1992 1993 1995 1996 1997 1998 1999 2001 2002 2003 2004 2005 2006 2007 2008 2009

*Source: CPS/FGV from microdata of PNAD/IBGE*

Two reflections are possible, according to the numbers above: one is political, and the other, economics. The 94.9 million Brazilians in the new middle class correspond to 50.5% of the population. That means that the new Brazilian middle class includes the median voter, believed to be the one that decided an election runoff, but also that it could decide the election alone. From the standpoint of economics, this is also the dominant class, because it concentrates over 46.24% of the total Brazilian purchasing power during 2009 (45,66% in 2008), more than classes A and B taken together, which held 44,12%.Classes D and E today hold 9.65% of purchasing power, a decrease from the 19.79% immediately before Plano Real was launched.

**The real rise in classes ABC**

The analysis of the maps on the rates of variation in the share of classes ABC in the population shows a distinct distribution of the improvements in poverty (class E) keeping the same scale for all episodes. The highest annual average increases occurred right after the Real Plan (1993-95) and not in the period 2003-09.

**Annual rate of growth in class ABC – 2003/2009**



Taxa Anual de Crescimento das Classes ABC - 2003-2009
Até 5%
de 5% a 7,5%
de 7,5% a 10%
de 10% a 12,5%
de 12,5% a 15%
Mais de 15%
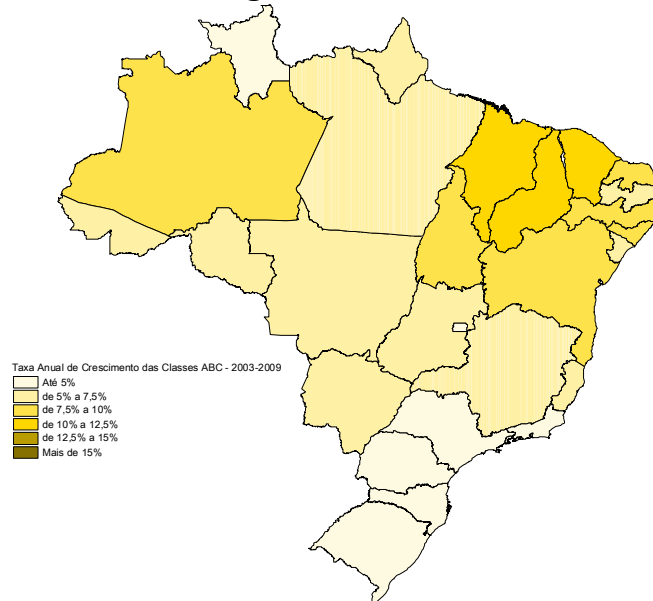
**Annual rate of growth in class ABC – 1993/95**



Taxa Anual
Até 5%
de 5% a 7,5%
de 7,5% a 10%
de 10% a 12,5%
de 12,5% a 15%
Mais de 15%
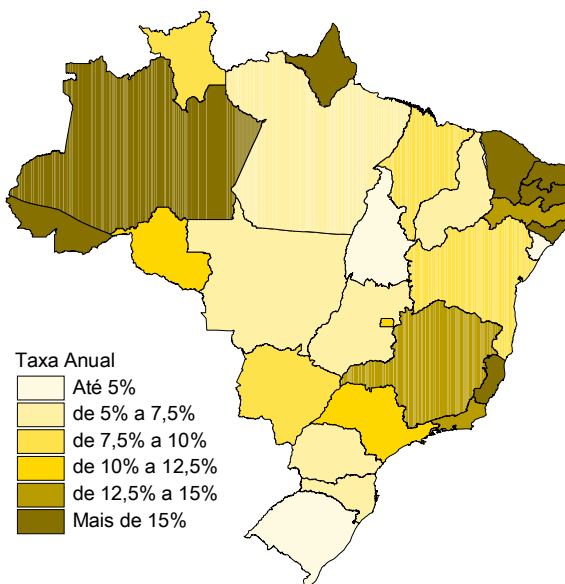
Analyzing what happened with each group.

### Economic classes evolution

|         | 2009-2003 | 2008-2009 |
|---------|-----------|-----------|
| Class E | -45.50%   | -4.32%    |
| Class D | -11.63%   | -3.00%    |
| Class C | 34.32%    | 2.49%     |
| Class B | 38.51%    | 3.49%     |
| Class A | 40.99%    | 0.18%     |

**Class A:** according to the last *PNAD*, the number of people in class A increased 0.18% last year, which represents 106.5 thousand people more in the highest income strata. In the last six years alone, 3.2 million people got into this class, that reached 9.6 million people in 2008.

**Class B:** the number of people in class B (family income between R$ 4854 and R$ 6329) increased 3.5% during the last year alone, representing 443 thousand people more in this class. If we analyze data since 2003, the amount of people getting into class B is 3.4 million. Today, there are 40.4 million people in this class.

**Class C:** With 37.56% of the population in 2003, it comprises 50.45% in 2009, or 94.9 million Brazilians with income between R$ 1126 and R$ 4854 a month; it is the dominant class, in the demographic sense of the word. Such accumulated growth (34.34%) in the period of six years represents, in terms of population, 29 million Brazilians getting into class C in the last five years (3.2 million only in the last year).

**Class D:** Class D represented 23.62% of the population in 2009, or 44.4 million Brazilians with income between R$ 705 and the limit for class C. There was a 0.9 million decrease during a year, or 3%, and 2.5 million if we consider the last six years.

**Class E:** As a result of the 4.32% decrease, meaning that million people are out of the lowest family income group, (R$ 705 a month of less). These are below the poverty line in our methodology. This movement follows a trend that began at the of the 2003 recession, when poverty decreased 45.5%, that is, around 20.5 million people crossed the misery line. As a result, we have 28.8 million miserable people (15.32% of the

population[5]), number that would be close to 50 million if misery had not decreased over the last few years.

## Population Difference by Economic Classes

|         | 2009-2003    | 2008-2009   |
| ------- | ------------ | ----------- |
| Class E | -20,481,069  | -1,022,145  |
| Class D | -2,431,443   | -946,083    |
| Class C | 29,063,545   | 3,172,653   |
| Class B | 3,391,694    | 443,181     |
| Class A | 3,253,636    | 106,487     |

*Source:* CPS/FGV a partir dos microdados da PNAD/IBGE

## Population by Economic Classes

|         | 2003        | 2004        | 2005        | 2006        | 2007        | 2008        | 2009        |
| ------- | ----------- | ----------- | ----------- | ----------- | ----------- | ----------- | ----------- |
| Total   | 175,398,020 | 177,758,060 | 180,001,710 | 182,218,501 | 184,384,292 | 186,440,290 | 188,194,383 |
| Class E | 49,319,851  | 45,147,533  | 41,047,646  | 35,196,724  | 33,659,359  | 29,860,927  | 28,838,782  |
| Class D | 46,884,477  | 48,286,025  | 48,713,422  | 48,006,542  | 46,298,711  | 45,399,117  | 44,453,034  |
| Class C | 65,871,283  | 70,620,183  | 75,266,800  | 81,889,806  | 86,476,548  | 91,762,175  | 94,934,828  |
| Class B | 6,977,329   | 7,100,301   | 7,583,287   | 8,549,859   | 9,271,379   | 9,925,842   | 10,369,023  |
| Class A | 6,345,080   | 6,604,018   | 7,390,555   | 8,575,570   | 8,678,295   | 9,492,229   | 9,598,716   |

*Source:* CPS/FGV a partir dos microdados da PNAD/IBGE

## Economic Classes Evolution
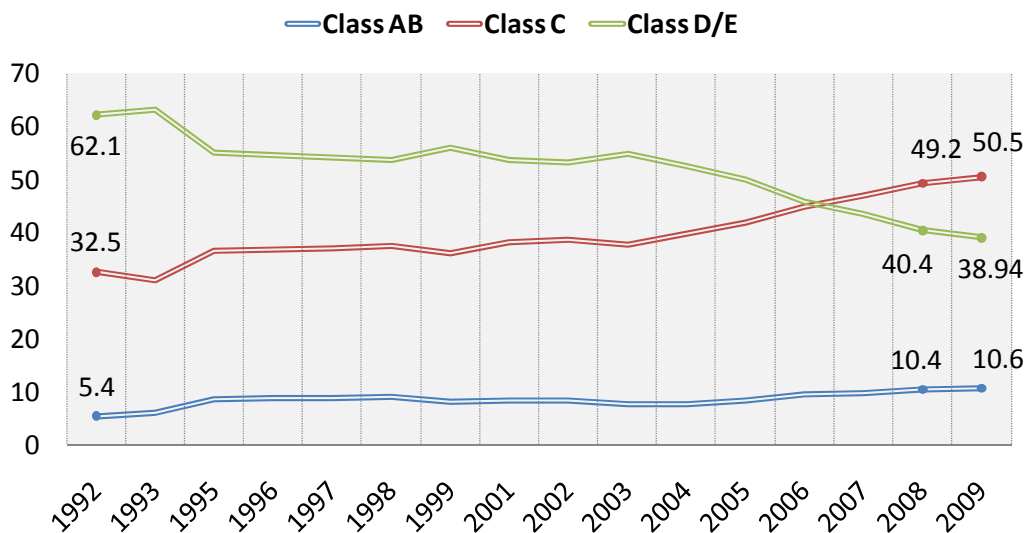


*Source*: CPS/FGV a partir dos microdados da PNAD/IBGE

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[5] Com renda per capita inferior a 137 reais mensais (a preços da grande São Paulo ou 145 reais a preços médios nacionais ponderados pela população de cada estado).

## Class E Evolution
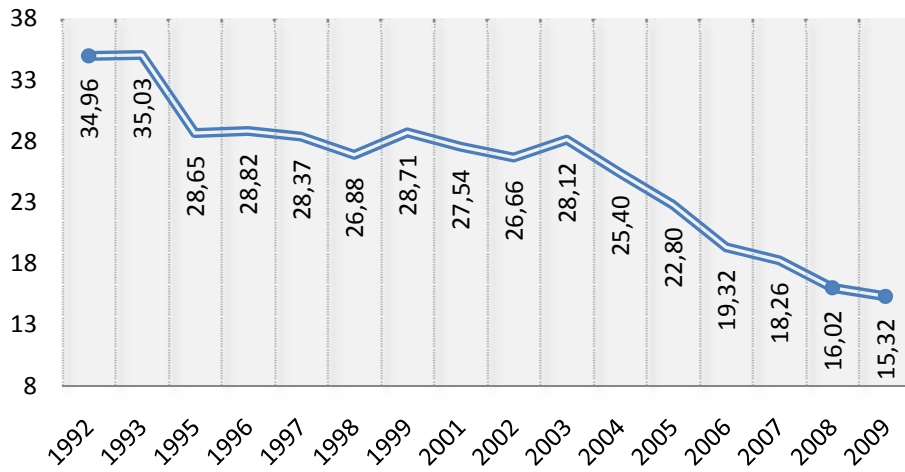


Source: CPS/FGV a partir dos microdados da PNAD/IBGE

## Class D Evolution
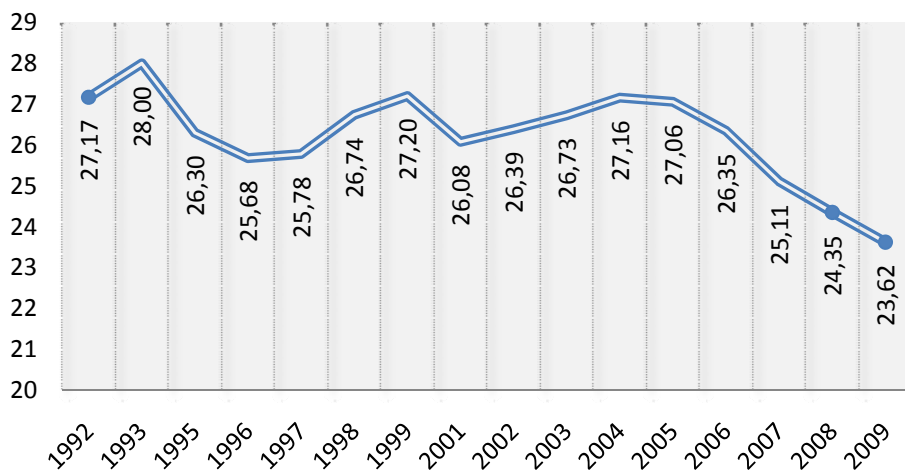


Source: CPS/FGV from microdata of PNAD/IBGE

## Class C Evolution
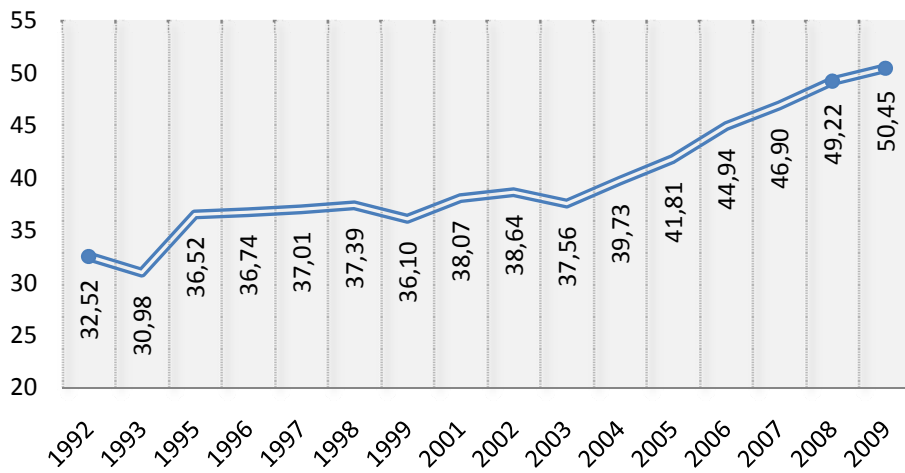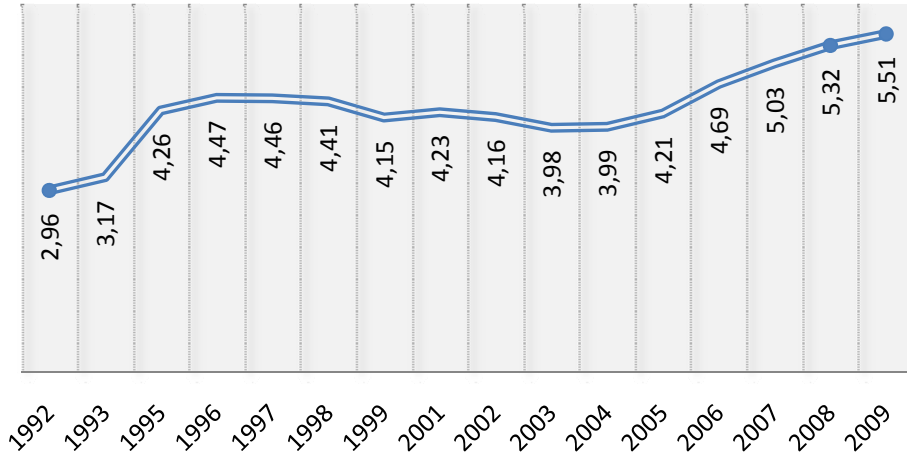
## Class B Evolution



2,96 | 3,17 | 4,26 | 4,47 | 4,46 | 4,41 | 4,15 | 4,23 | 4,16 | 3,98 | 3,99 | 4,21 | 4,69 | 5,03 | 5,32 | 5,51

1992 1993 1995 1996 1997 1998 1999 2001 2002 2003 2004 2005 2006 2007 2008 2009

## Class A Evolution



2,39 | 2,82 | 4,26 | 4,30 | 4,38 | 4,58 | 3,84 | 4,08 | 4,15 | 3,62 | 3,72 | 4,11 | 4,71 | 4,71 | 5,09 | 5,10

1992 1993 1995 1996 1997 1998 1999 2001 2002 2003 2004 2005 2006 2007 2008 2009
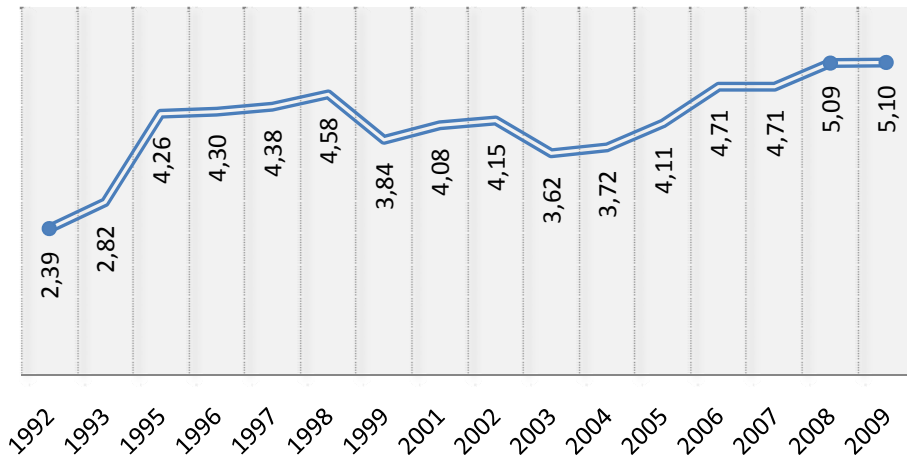
**A More Detailed Economic Class Definition**

We present a more detailed definition (finer brackets) of FGV income classes.

**Economic Classes More Detailed Definition**

Total Household Income from All Sources
Income Brackets limits

|  | Inferior | Superior |
|---|---|---|
| Class E2 | 0 | 420 |
| Class E1 | 420 | 705 |
| Class D2 | 541 | 802 |
| Class D1 | 802 | 1126 |
| Class C2 | 1126 | 1888 |
| Class C1 | 1888 | 4854 |
| Class B2 | 4854 | 4902 |
| Class B1 | 4902 | 6329 |
| Class A2 | 6329 | 9366 |
| Class A1 | 9366 | 0 |



Economic Classes Evolution – More Detailed Classification
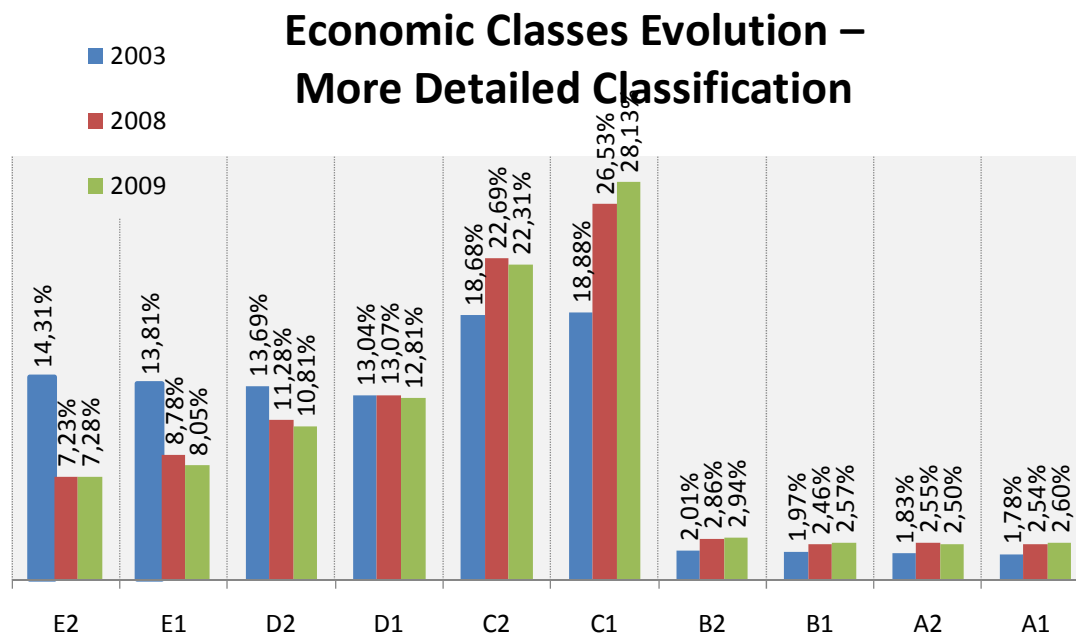
Source: CPS/FGV based on microdata from PNAD/IBGE

**Income Mass by Economic Classes**
**More Detailed Classification**

- 2003
- 2008
- 2009

| | E2 | E1 | D2 | D1 | C2 | C1 | B2 | B1 | A2 | A1 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2003 | 1,4% | 3,1% | 4,8% | 6,6% | 14,3% | 29,2% | 5,8% | 7,1% | 9,1% | 18,6% |
| 2008 | 0,5% | 1,5% | 3,1% | 5,1% | 13,8% | 31,8% | 6,4% | 6,9% | 9,7% | 21,3% |
| 2009 | 0,4% | 1,4% | 2,9% | 4,9% | 13,4% | 32,9% | 6,4% | 7,0% | 9,3% | 21,4% |

Source: CPS/FGV based on microdata from PNAD/IBGE

45
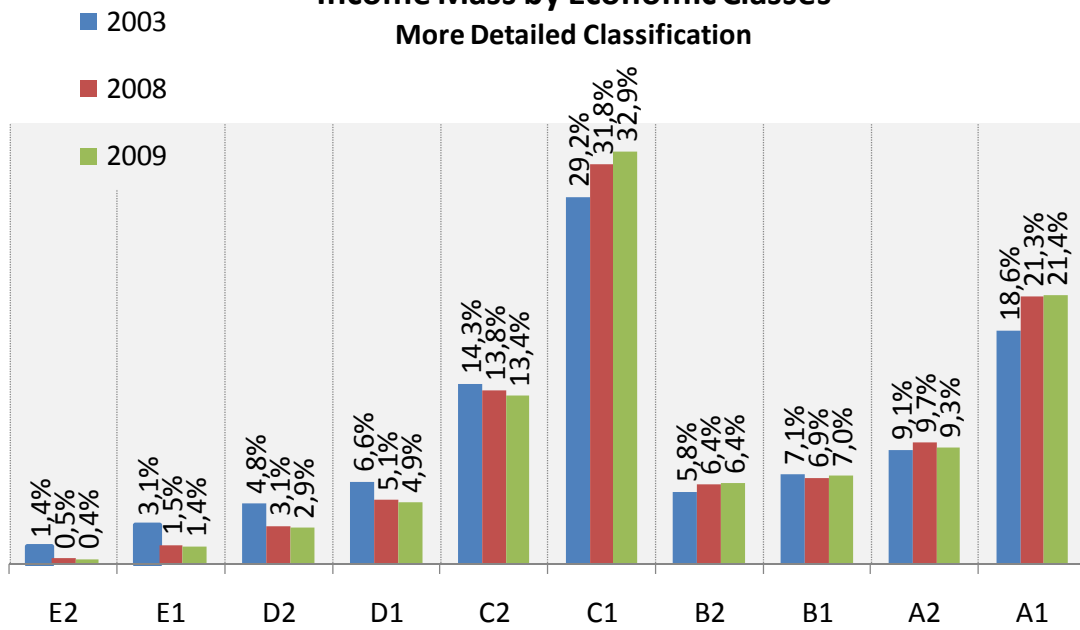
# Chapter 6 – Monitoring Classic Social Indicators based on Income (Inequality, Poverty and Social Welfare)

We describe here the evolution of social indicators based on income such as inequality, poverty, and well-being, analyzing their close determinants and some of their consequences. In other words, we described various aspects of the Brazilian income that would be a very sensitive aspect, according to economists.

**Inequality**

Generally, 2009 just liked the decade so far seen as a whole, stands out less for the overall income growth for all segments of the population, than for the reduction in inequality, as the graph below illustrates:

Source: CPS/FGV based on PNAD microdata/IBGE

Inequality measured by the Gini index drops -0,70% in 2009, falling below presented between 2007 and 2008, with 1.15% (an amount above four of the five years in the decade of inequality reduction). The annual overview of the reduction of inequality since the beginning of the decade was: -1,2% in 2002; -1% in 2003, -1,9% in 2004, -0,6% in 2005, and -1,06% in 2006, - in 2007 and -1,15% in 2008. The decrease is substantial – never in the Brazilian registered statistical history has inequality fallen as much. Lorenz curves below show the dominance, so that for any measure of inequality that repeats the transfer principles, 2009 is more egalitarian than 2001.

**Lorenz Curve – Brazil 2009**

**Household per Capita Income Inequality**
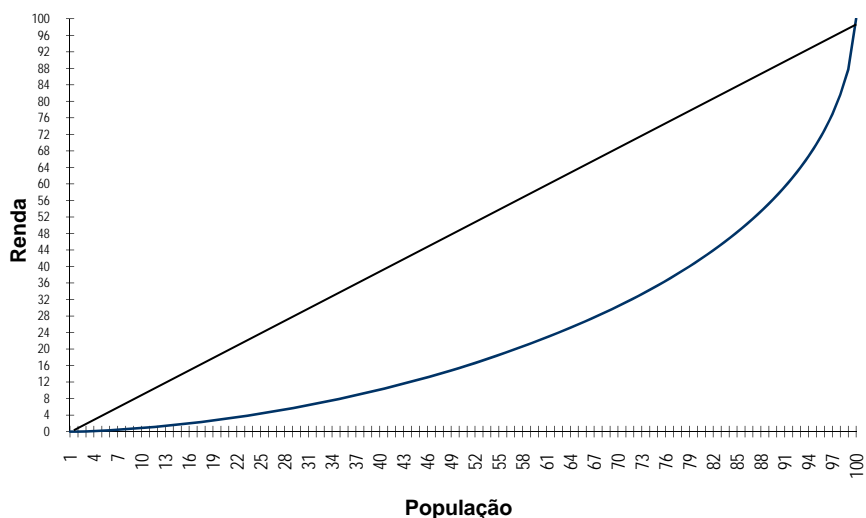
**Income Distribution**

We present next the accumulated income gain between 2001 and 2009 for each decile of the population. The rate of growth decreases as we move from the first (69,08%) to the last decile (12,58%) – this progressive character is not so well translated by the apparently small changes in the series of the Gini index or the Lorenz Curves from which the index derives.

## Gini's index Evolution
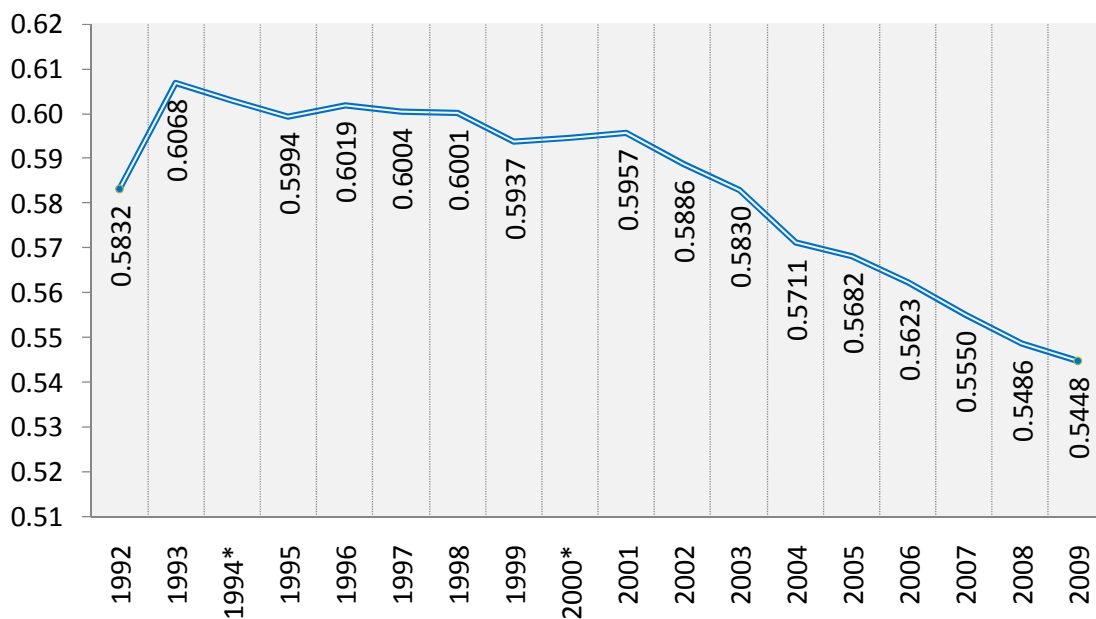
## Accumulated Variation of Average Income by Income Tenths - Brazil (2009/2001)
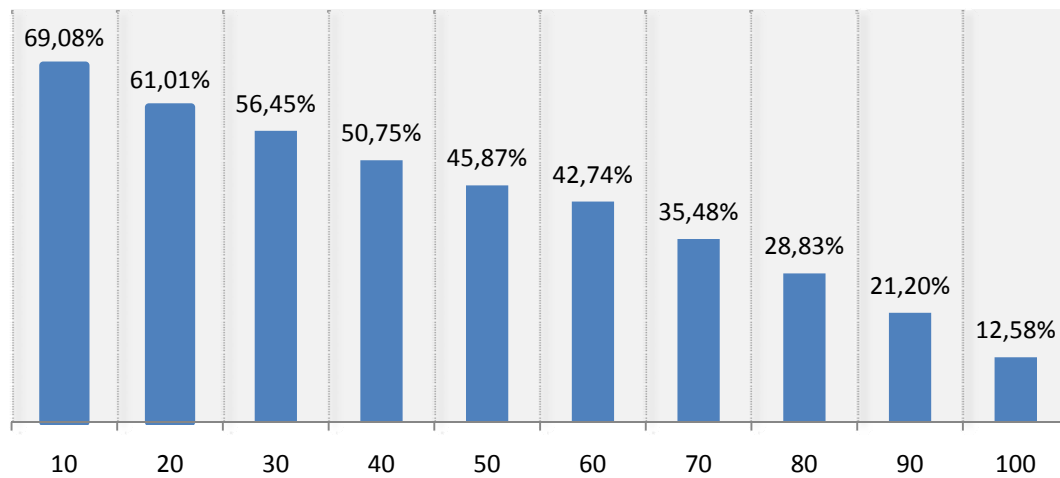


Source: CPS/FGV based on PNAD microdata/IBGE

### Sen's Social Welfare Measure

In order to provide a final synthesis, we added the effects of the average and inequality to a social welfare function proposed by Amartya Sen, Nobel Prize laureate. This function multiplies the average income by the equity measure, given as one less the Gini index (Mean*(1-Gini)). Inequality thus works as a reducing factor of welfare in relation to the mean income. For instance, the average income of 630 monthly reais per Brazilian would be the value of social welfare according to Sen's simple measure, if equality were total. But in truth it corresponds to 45,52% of this value, 287 reais, given the extreme current level of inequality in Brazil. This was even higher when the index was only 41,7% of the average income in 2003. We present in the graph below the year-on-year evolution of the average income, inequality and their combination, given by this welfare measure.

# Indicators Based on Household Income Per Capita

## Average per capita income evolution – R$ at 2009



| Year | Value |
|------|-------|
| 1992 | 385.5 |
| 1993 | 407.95 |
| 1994* | |
| 1995 | 506.70 |
| 1996 | 514.75 |
| 1997 | 518.96 |
| 1998 | 527.24 |
| 1999 | 483.99 |
| 2000* | |
| 2001 | 506.53 |
| 2002 | 507.72 |
| 2003 | 477.89 |
| 2004 | 492.45 |
| 2005 | 524.75 |
| 2006 | 572.69 |
| 2007 | 585.50 |
| 2008 | 617.65 |
| 2009 | 630.25 |
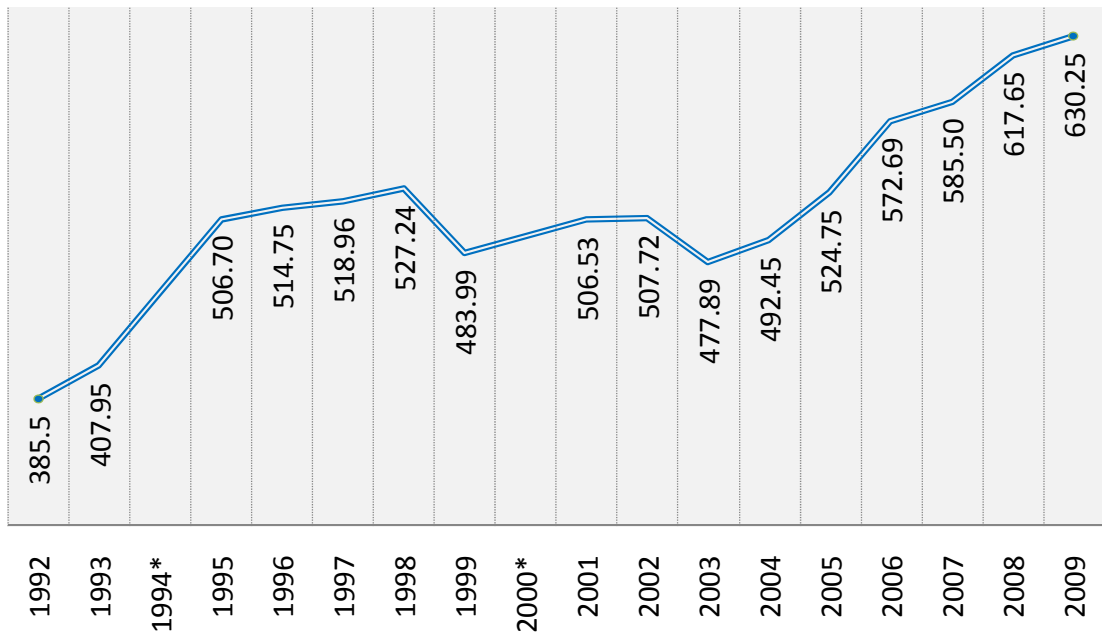
Source: CPS/FGV based on PNAD microdata/IBGE

## Welfare evolution – R$

Sen´s 1976 Measure
= Average * (1 – Gini)



| Year | Value |
|------|-------|
| 1992 | 160.68 |
| 1993 | 160.41 |
| 1994* | |
| 1995 | 203.00 |
| 1996 | 204.93 |
| 1997 | 207.36 |
| 1998 | 210.84 |
| 1999 | 196.67 |
| 2000* | |
| 2001 | 204.79 |
| 2002 | 208.87 |
| 2003 | 199.29 |
| 2004 | 211.21 |
| 2005 | 226.57 |
| 2006 | 250.68 |
| 2007 | 260.54 |
| 2008 | 278.81 |
| 2009 | 286.92 |
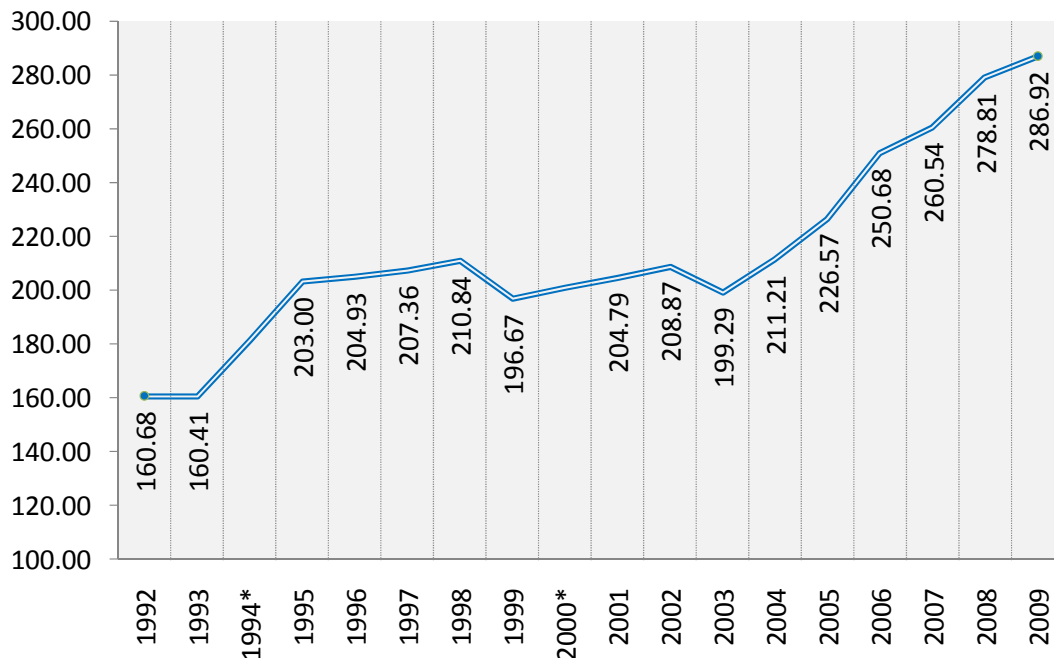
Source: CPS/FGV based on PNAD microdata/IBGE

**Poverty**

The last two PNADs reveal a -4.32% reduction in poverty, that corresponds to the exit of 1 million people out of poverty. This trend marks the movement since the end of the 2003 recession, when poverty fell 45,50% or around 20,5 million people crossed the poverty line and have been successively shown by the CPS studies, launched in the same periods in previous years, immediately after the launch of the PNAD microdata. These studies indicated two marked changes in the poverty levels: in 1993-1995, the proportion of people below the poverty line drops 18,47% and in 2003-08, the same falls 43%. These two episodes were 10 years apart in a relatively stable period for poverty interrupted only in 1998 and2002.

The existing parallel between the two episodes of permanent poverty reduction, just as the transitory fluctuations in election years, may be seen in the graph below. In net terms, we have 28,8 million poor people (15,32% of the population[6]) that would be nearly 50 million people, had poverty not fallen in the last years.

**% Poor Population (P0 -** Household per capita income below R$144**)**
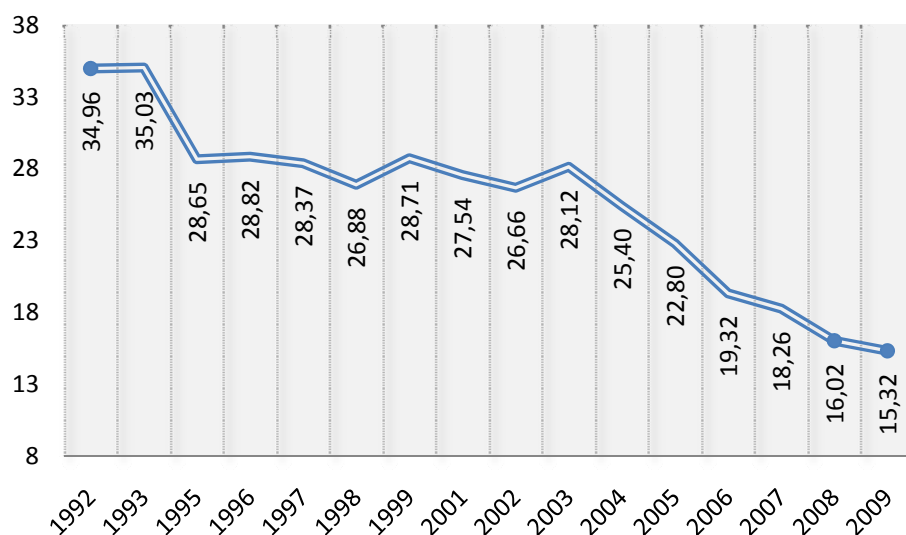


*Note: 1994 and 2000 are averages. In those years the PNAD was not the field*

Source: CPS/FGV based on PNAD microdata/IBGE

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[6] People who live in households with a per capita income lower than 144 reais per month (at national average prices pondered by the population of each state or 152 reais at São Paulo prices).

Below we present the map of different states between these two periods of marked poverty reduction between 1993 to 1995 and 2003 to 2009, expressed in annual rates of poverty reduction to enable a comparison between them. In Brazil, between 1993 and 1995, poverty decreased 9,6% per year, while the annual average of the last six years was 9,6%. In regional terms, except for some states such as Amazonas, Acre, Roraima and Rio de Janeiro, the annual pace of poverty reduction now tends to be stronger in other states. In the case of Rio de Janeiro State, the fact that the Real boom through exchange rate valuation may have benefited the non-transaction sector may explain the phenomenon, given the relative importance of the service sector in the state (see Neri 1996).

**Annual Rate of Poverty Reduction (Class E) – 2003/2009**



Taxa Anual de Redução da Pobreza 2003-2009
Até 5%
de 5% a 7,5%
de 7,5% a 10%
de 10% a 12,5%
de 12,5% a 15%
Mais de 15%
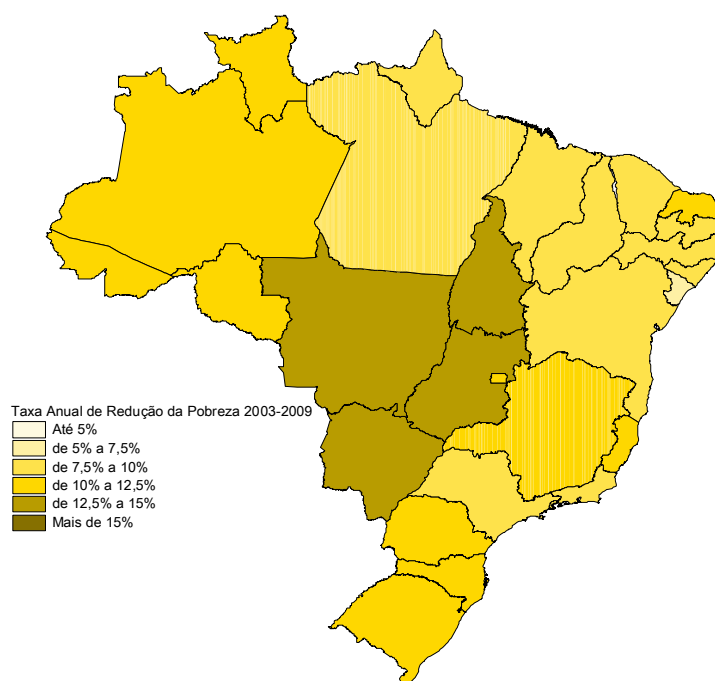
**Annual Rate of Poverty Reduction (Class E) – 1993/1995**

Taxa Anual
- Até 5%
- de 5% a 7,5%
- de 7,5% a 10%
- de 10% a 12,5%
- de 12,5% a 15%
- Mais de 15%
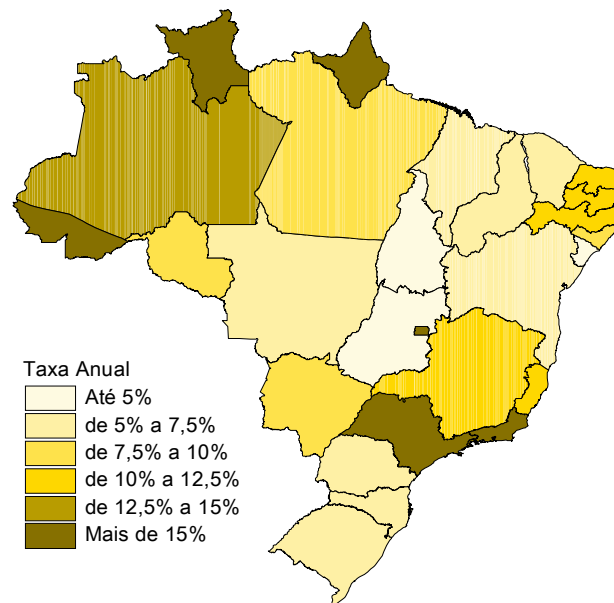
**Poverty Eradication Costs**

Another useful measure in the design of public policy is the income gap (P1). That is, how much income the poor lacks, on average, to meet their basic needs in the market. Using as a basis our income insufficiency line, the average deficit expressed in monetary terms of each poor Brazilian would be R$ 60,89 monthly at mean prices across Brazilian regions. In 2008, the same statistics was R$ 58,71. Captured by the index known as P2 (increases from 4.34 to 4.45) we observe an increased in the severity of poverty. Data on income fall in the first decile indicates that the poorest of the poor were not those that won in the last year.

Going back to the calculation of the eradication costs in 2009, as just part of the Brazilian population is below the line, data shows that it would be necessary R$ 9,33 on average, per person (versus R$ 9,40 in 2008 and R$ 16,96 in 2003), to relief poverty totally in Brazil, a total cost of R$ 1,7 billion reais per month and R$ 21 per year. Information reveals how much it would cost to complete the income of each Brazilian up to the line of R$ 144 nationally, that is, the lowest value of sufficient transfers to lift each poor person to the floor of their basic needs. This exercise should not be read as a defense of specific policies, but as a reference to the social opportunity cost of adopting unfocused policies. Data is useful to indicate the target of policies and organize their sources of finance.

## Poverty's Quadratic Gap (P²)



10,79% 10,48% 7,69% 8,38% 7,86% 7,40% 7,98% 7,90% 6,89% 7,55% 6,52% 5,54% 4,84% 5,11% 4,34% 4,45%

1992 1993 1995 1996 1997 1998 1999 2001 2002 2003 2004 2005 2006 2007 2008 2009
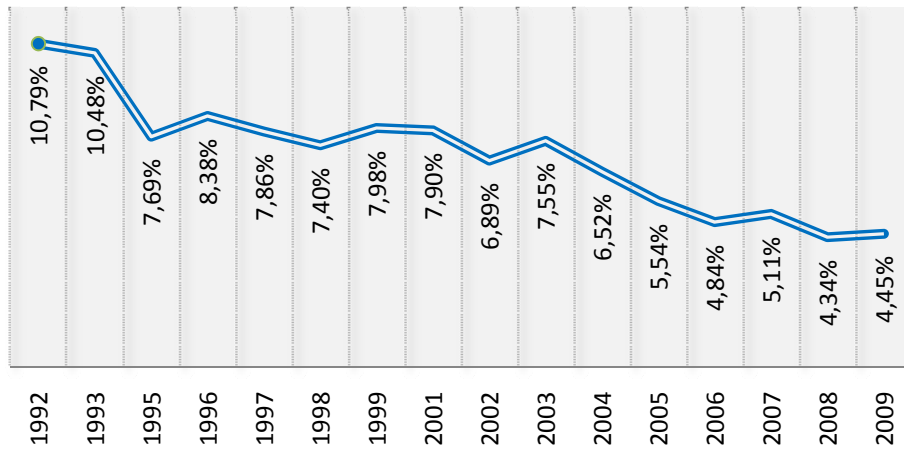
Source: CPS/FGV a partir dos microdados da PNAD/IBGE

## Poverty Cost - per poor (R$)



66,25 65,26 60,36 63,15 61,36 61,64 61,76 62,80 59,29 60,33 58,48 56,51 56,92 59,86 58,71 60,89

1992 1993 1995 1996 1997 1998 1999 2001 2002 2003 2004 2005 2006 2007 2008 2009
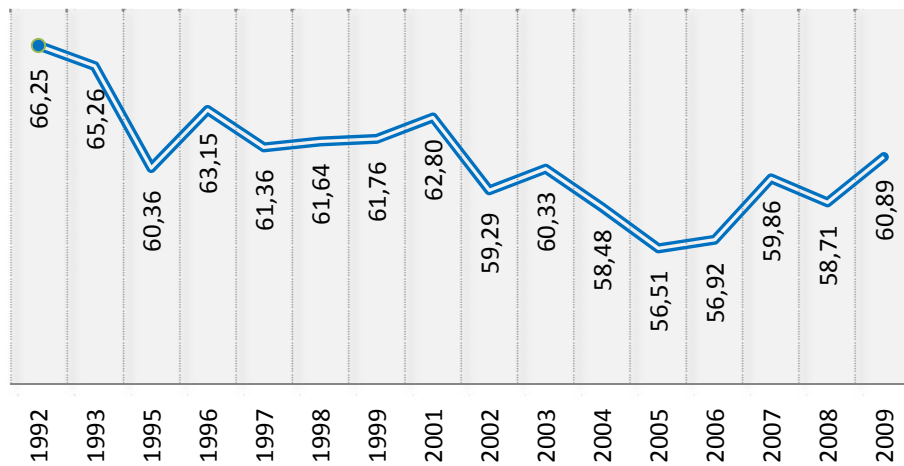
Source: CPS/FGV a partir dos microdados da PNAD/IBGE

# Chapter 7 – Consumers, Producers and Class Markers

**Overview**

The problem faced by analysts is that PNAD is a multisided database, a characteristic that makes it difficult to summarize its results into simple conclusions like: there has (or has not) been an improvement in the life of Brazilians. This is the challenge the present study intends to deal with. Our strategy is to use the tools provided by literature on poverty and social welfare to synthesize a broad spectrum of PNAD information into only one dimension: income. The promise is that, once integration is achieved, we will be able to divide the whole in its component parts, as if we were undoing a jigsaw puzzle, so that we can determine the relative magnitude of the causes that resulted in the changes observed.

**Income Policies and Income Distribution**

Inequality Decomposition

How do we reduce inequality? Once more, the present decade may show us the way, by applying a decomposition methodology of the Gini index variations. Labor earnings explain two thirds (66,86%) of the total inequality reduction between 2001 and 2008, next in come the contribution of social programs with emphasis on the *Bolsa Familia* program (Family Grant) and its predecessor *Bolsa Escola* (School Grant) among others, that explain 17% of the higher degrees of equality obtained while social security benefits explain 15,72% of overall reduction of income inequality, and the remaining income account for a residue under 1%.

It is interesting to incorporate in the analysis not only the impacts of different income sources, particularly the official transfers from the Brazilian government, on the inequality movements, but also its costs to the public accounts. When we do that we realize that each percentage point obtained from Social Security Benefits expenses costs 384% more the cost obtained from Bolsa |Familia and social programs expenditures. Leaving political considerations aside and possible impacts of the Minimum Wage that are the *numeraire* of ,most Social Security benefits on income distribution, the unprecedented fall of Brazilian inequality during the last decade could be higher if

there were a shift on the new flows of resources from social security adjustments to better  target programs such as Bolsa Familia.

**Reasons for Change: Mean Income**

If something changed, the second struggle is to find out: why has it changed? How has it changed? These last questions suggest the two complementary lines of answers explored here, knowingly: the first one looks at the approximate determinants of the income distribution and the primary components of people's income, the role of pensions, social programs and work (and its components) in the various synthetic measures.

Disentangling the relative importance of different income sources for the advance of income based social indicators in the country. Results indicate that, despite the strong growth of income from social programs and retirement pay linked to the minimum wage, the amount due to work is close to the significant income growth of 4.72% during the 2003-2009 period. The average work income increase of 4.61% per year, per Brazilian, which corresponds to 76% of average Brazilian income, provides a sustainability basis for life conditions in addition to official income transfers.

| Per Capita Household Income - Different Sources: Total Population | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | Ano | All sources income | All jobs income | Other private income | Other Public Transfers | Bottom Social Security - SM* | Social Security Post-bottom > SM* |
| | | 2009 | 100.00% | 76.04% | 2.02% | 1.69% | 5.16% | 15.08% |
| **Total** | Total | 2003 | 100.00% | 76.53% | 2.47% | 1.07% | 4.44% | 15.50% |

Source: CPS/FGV based on PNAD/ IBGE microdata.

Between 2003 and 2008, the average per capita income of Brazilians increased 5,26% in real terms (i.e., population growth and inflation have been discounted) going from 458 to 592 reais per month. Income sources that increased more were social programs (20,99%) influenced by the expansion of the Family Grant, created in 2003. Next, came the share of pension income attached to the minimum wage (6,64%). The effects of minimum wage readjustments, as it increased more than 45% in the period,

put a pressure on the basic value of benefits and the number of elderly, as a result of the population's aging process. Income from social security above the minimum amount grows less than the general income growth. It is worth pointing out that income from work has had an average increase of 5,13% per year, which grants a sustainable support for the living conditions beyond the official income transfers. Income from work corresponds to 76% of the average income perceived by the Brazilians and 75% of the income gain observed has come from there.

In the last year, the growth of per capita income from work and pensions bound with the minimum wage is a little lower, and social programs reach 30,8%. In any case, in both periods − although there has been a strong increase in income from social programs and pensions tied to the minimum wage − the share of income from work remains close to the impressive growth in income in this phase of boom.


**Composition of Income per Economic class**

In the period from 2003 to 2008, we noticed that the share of income associated with social programs, such as the Family Grant, doubled. This corresponds to the poor groups by the national average line of CPS − after the increases announced by the government and the new entry criterion for the Family Grant, the share of these programs in the respective incomes increased from 4,9% to 16,3%.

The analysis of the participation of different income types per economic class may be useful to assess the prospective impacts of different public policy tools on income distribution, such as for example the measures adopted with the external crisis context in September 2008, namely:

Increases in the Family Grant and other programs not related to the social security tend to benefit predominantly class E that has 16,25% of its earnings from this type of income.

It is interesting to separate income from social security benefits as individual earnings up to one minimum wage and benefits above this minimum, because distinguishing among such increases was stressed in 1998. The major beneficiary of the increase in the social security minimum (basic) benefit is class D, with 12,66% of income tied to it. Finally, the increase in pensions above this  minimum value benefits

above all class AB as 18,94% of its earnings derive from this source. This measure is being discussed today.

| | | Ano | All sources income | All jobs income | Outras rendas privadas | Other private income | Bottom Social Security - SM* | Social Security Post-bottom > SM* |
|---|---|---|---|---|---|---|---|---|
| | | **Per Capita Household Income - Different Sources ::: Total - Total** | | | | | | |
| | | **Economic Class** | | | | | | |
| **Class E** | | 2009 | 100.00% | 68.83% | 1.82% | 18.53% | 9.95% | 0.86% |
| | Total | 2003 | 100.00% | 77.85% | 2.56% | 4.87% | 12.74% | 1.97% |
| **Class D** | | 2009 | 100.00% | 75.77% | 1.08% | 6.04% | 13.44% | 3.67% |
| | Total | 2003 | 100.00% | 78.61% | 1.43% | 1.36% | 12.37% | 6.23% |
| **Class C** | | 2009 | 100.00% | 75.75% | 1.48% | 1.39% | 8.02% | 13.36% |
| | Total | 2003 | 100.00% | 76.57% | 1.93% | 0.58% | 5.38% | 15.53% |
| **Class AB** | | 2009 | 100.00% | 76.70% | 2.77% | 0.52% | 0.49% | 19.52% |
| | Total | 2003 | 100.00% | 75.74% | 3.32% | 1.10% | 0.25% | 19.59% |

*Source:* CPS/FGV from microdata of PNAD/ IBGE.

**Strategy to widen the scope of economic classes**

Our strategy is, at each update of our traditional series based on household per capita income such as poverty, inequality, social welfare and now income classes, to include a new dimension to the analysis of the various economic classes: entrepreneurship (www.fgv.br/cps/crediamigo2), microcredit (www.fgv.br/cps/crediamigo3), micro-insurance (www.fgv.br/cps/ms). (www.fgv.br/cps/crediamigo2), exploring in each research a new perspective. In the current research we will explore a multidimensional view from the rich data offered by PNAD. Still exploring the rich microdata of the PNAD/IBGE we applied a model of sequential variable selection according to the level of statistical significance related to household per capita income, always based on the household/family as the basic unit. We look to the producer and consumer sides. In the case of the consumer, a range of information on access to consumer goods, housing and public services are provided by PNAD. In the case of the producer, the focus is on the inclusion in the labor market that reflects human physical and social capitals, not only the education level of the household's person of reference and his/her spouse, but also the investment on the future of their kids open by age groups and types of school.

**What are the Main Stocks Associated to Income Flows?**

**i.      Technical Aspects**

This subsection begins with a discussion of a series of models used to estimate economic class determinants.

**Access and Use of Different Assets by Economic Classes**

**Production Assets**

In this section, we present the production assets access and use, and consumption profiles for the Brazilian population. The results are presented first by graphics measuring how the indicator evolved over time so that we can analyze the recent boom of income gains since 2003. We endeavor to measure, with the help of tables and graphs, items related to consumption and production of the Brazilian population, and conclude with by presenting basic characteristics like gender, race, age, family status and others. As a complement, we distributed access among the different economic classes with a punctual analysis in 2009.

**Use of Productive Assets**



Occupied - 1992 to 2009
10 years or more*

Source: CPS/FGV from microdata of PNAD/IBGE

58

## Occupied - 2009
## 10 years or more*



67.33% class AB
61.29% class C
49.24% class D
41.84% class E

*Source: CPS/FGV from microdata of PNAD/IBGE*

| Profile of Economic Classes - 2009 | | | |
|---|---|---|---|
| Position on the Occupation | | | |
| Category | CLASS AB | CLASS C | CLASS D | CLASS E |
| Unemployed | 2.14% | 3.86% | 7.20% | 10.11% |
| Inactive | 30.53% | 34.84% | 43.56% | 48.05% |
| Agricultural employee | 0.29% | 2.33% | 4.49% | 4.68% |
| Domestic employee | 0.57% | 4.53% | 5.95% | 4.27% |
| Formal Employee | 21.11% | 22.96% | 11.77% | 4.31% |
| Informal Employee | 4.85% | 6.75% | 6.68% | 4.47% |
| Self-employed | 11.89% | 11.85% | 11.00% | 11.05% |
| Employer | 9.81% | 2.14% | 0.55% | 0.55% |
| Public Employee | 16.84% | 7.09% | 3.19% | 1.61% |
| Unpaid | 1.95% | 3.65% | 5.62% | 10.90% |

*Source: CPS/FGV from microdata of PNAD/IBGE*

## Occupied - 2009
## 10 years or more*



*Source: CPS/FGV from microdata of PNAD/IBGE*

| Profile of Economic Classes - 2009 | | | | |
|---|---|---|---|---|
| Position on the Occupation | | | | |
| Category | CLASS AB | CLASS C | CLASS D | CLASS E |
| Unemployed | 2.14% | 3.86% | 7.20% | 10.11% |
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| Agricultural employee | 0.29% | 2.33% | 4.49% | 4.68% |
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| Formal Employee | 21.11% | 22.96% | 11.77% | 4.31% |
| Informal Employee | 4.85% | 6.75% | 6.68% | 4.47% |
| Self-employed | 11.89% | 11.85% | 11.00% | 11.05% |
| Employer | 9.81% | 2.14% | 0.55% | 0.55% |
| Public Employee | 16.84% | 7.09% | 3.19% | 1.61% |
| Unpaid | 1.95% | 3.65% | 5.62% | 10.90% |

*Source: CPS/FGV from microdata of PNAD/IBGE*

**Social Security and Private Pensions Contribution**

|  | 2003 | 2008 | 2009 |
|---|---|---|---|
| Contributes to Social Security |  |  |  |
| Contributes Soc. Sec. Pub. & Priv | 2.11 | 2.02 | 2.17 |
| Contributes Soc. Sec. Public | 35.62 | 38.31 | 38.65 |
| Contributes Soc. Sec. Priv | 0.75 | 0.89 | 0.96 |
| Unemployed | 3.98 | 2.67 | 3.25 |
| Inactive | 18.90 | 22.23 | 22.16 |

*Source: CPS/FGV from microdata of PNAD/IBGE*

**Digital Assets**

# Computer with internet at Home
# 1992 a 2009



| 8,22% | 10,01% | 11,10% | 12,06% | 13,65% | 16,96% | 20,52% | 24,78% | 28,46% |
|---|---|---|---|---|---|---|---|---|
| 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
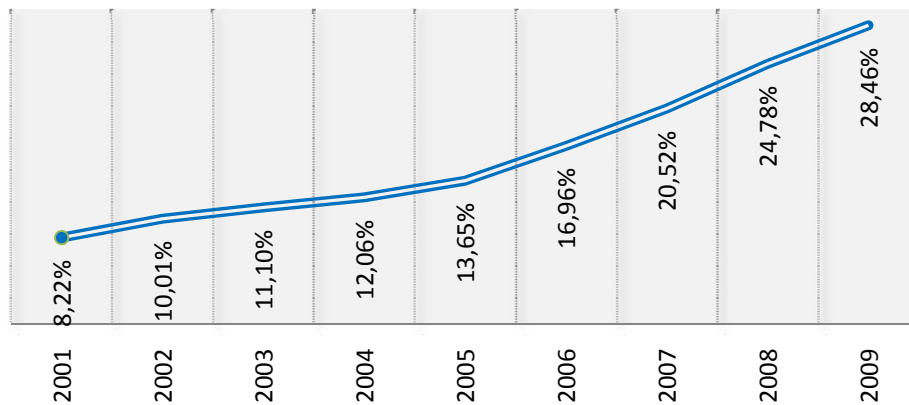
# Cellular Phone (at lest one at Home)
# 1992 a 2009



| 30,79% | 34,46% | 38,57% | 48,88% | 61,40% | 65,81% | 70,04% | 78,58% | 81,55% |
|---|---|---|---|---|---|---|---|---|
| 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
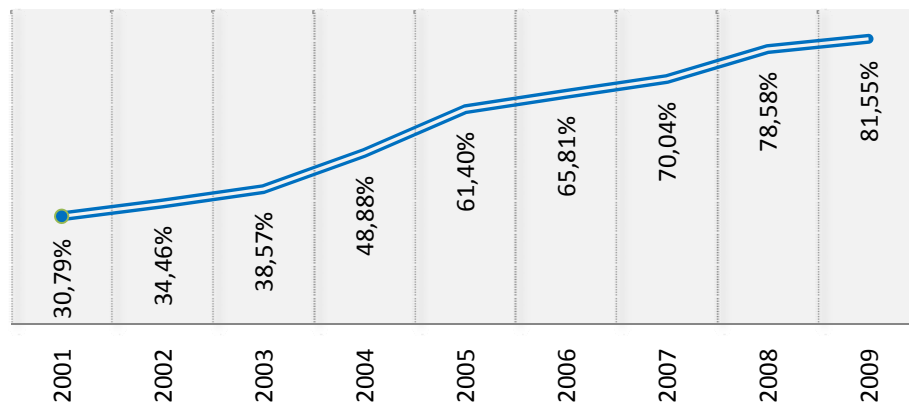
*Source: CPS/FGV from microdata of PNAD/IBGE*

|                                  | 2003  | 2008  | 2009  |
|----------------------------------|-------|-------|-------|
| COMPUTER                         |       |       |       |
| Have computer with Internet      | 11.10 | 24.78 | 28.46 |
| Have computer                    | 3.93  | 7.80  | 7.92  |
| Doesn't have computer            | 84.85 | 67.20 | 63.45 |
| Unknown                          | 0.13  | 0.22  | 0.16  |
| TELEPHONE                        |       |       |       |
| Have fixed and Cellphone         | 27.50 | 39.22 | 38.68 |
| Have fixed                       | 22.11 | 4.86  | 4.19  |
| Have Cellphone                   | 11.07 | 39.36 | 42.87 |
| Doesn't have fixed and Cellphone | 39.20 | 16.35 | 14.10 |

Source: CPS/FGV from microdata of PNAD/IBGE

## Computer with internet - 2009
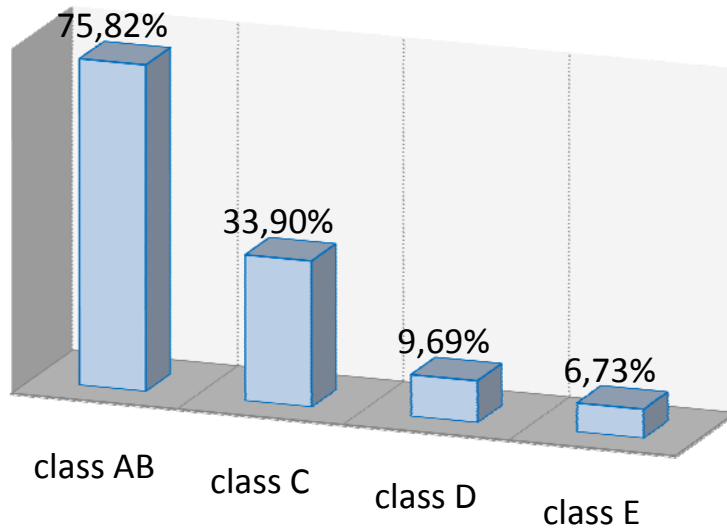


Source: CPS/FGV from microdata of PNAD/IBGE

**Cellular Phone - 2009**

95,92%

86,23%

77,23%

62,81%

class AB

class C

class D

class E
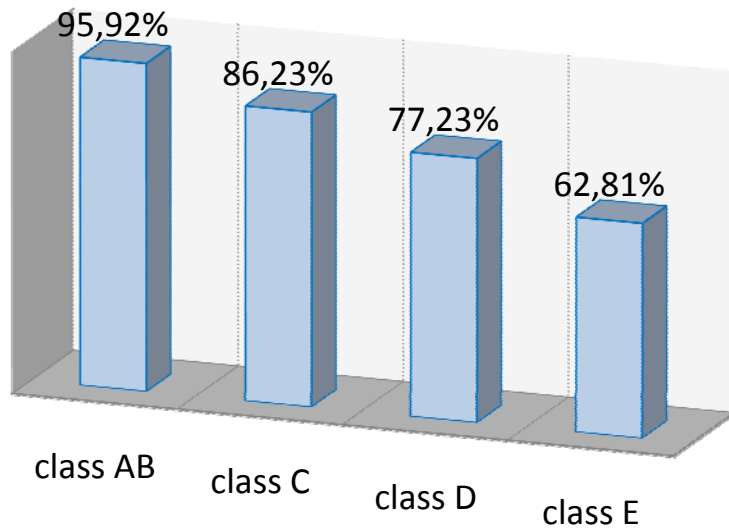
*Source: CPS/FGV from microdata of PNAD/IBGE*

**Education**

**Evolution (years) Average Years of Schooling  Brazil - 1992-2008**

**Age 25 years or more**

4,98    5,11    5,27    5,42    5,5    5,64    5,72    6    6,17    6,31    6,47    6,58    6,8    6,95    7,13    7,27

1992  1993  1995  1996  1997  1998  1999  2001  2002  2003  2004  2005  2006  2007  2008  2009
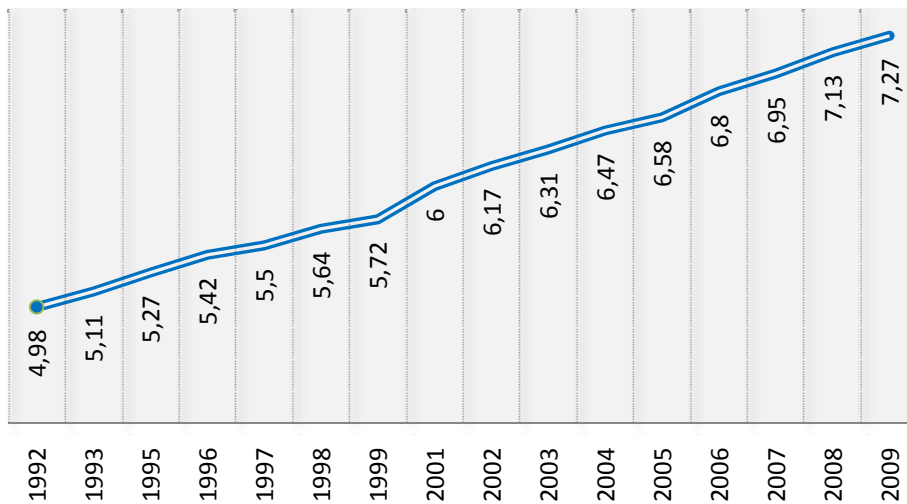
*Source: CPS/FGV from microdata of PNAD/IBGE*

**Evolution (%) of the population by Educational Level**

|  | 2003 | 2008 | 2009 |
|---|---|---|---|
| **EDUCATION OF THE HEAD** | | | |
| Without education or less than 1 year | 18.41 | 15.09 | 14.05 |
| 1 to 3 | 15.77 | 12.99 | 12.89 |
| 4 to 7 | 29.90 | 26.64 | 26.77 |
| 8 to 11 | 26.82 | 33.72 | 33.59 |
| 12 or more | 8.64 | 11.21 | 11.72 |
| **EDUCATION OF THE SPOUSE** | | | |
| Without education or less than 1 year | 10.80 | 8.72 | 8.08 |
| 1 to 3 | 11.92 | 8.96 | 8.59 |
| 4 to 7 | 24.16 | 20.67 | 20.58 |
| 8 to 11 | 23.08 | 27.81 | 27.65 |
| 12 or more | 6.53 | 8.66 | 9.11 |

*Source: CPS/FGV from microdata of PNAD/IBGE*

# Completed Years of Schooling (pop. with 25 years or more)

## 2009
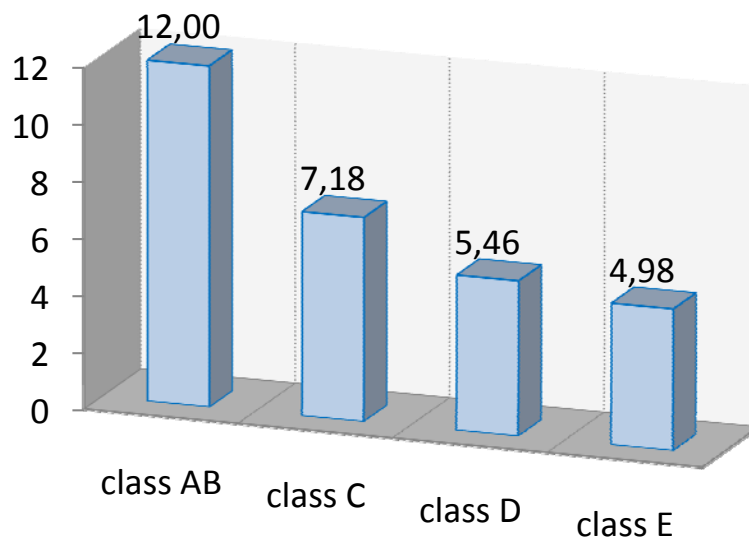


*Source: CPS/FGV from microdata of PNAD/IBGE*

**Attends or attended Schools**

**2009**



class AB — 47,67%
class C — 10,47%
class D — 2,07%
class E — 2,44%
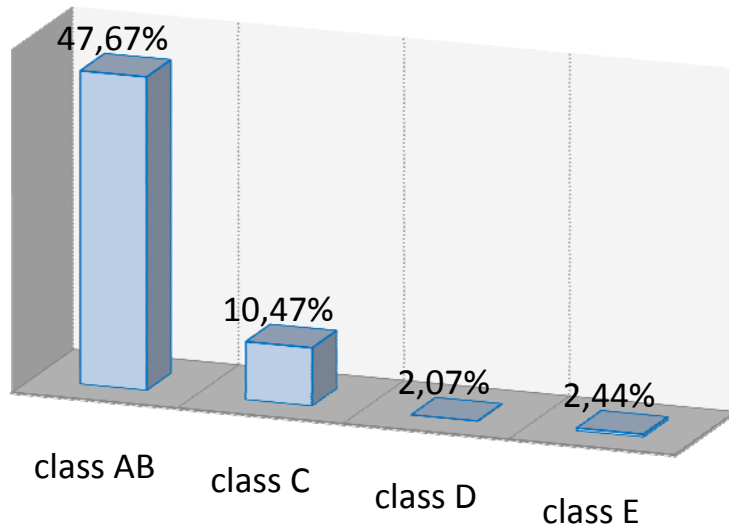
*Source: CPS/FGV from microdata of PNAD/IBGE*

## Consumer Characteristics

We present now a similar procedure to the list of public services and consumers goods found in PNAD.

## Public Services

**Sewage - 1992 to 2009**



| 1992 | 1993 | 1995 | 1996 | 1997 | 1998 | 1999 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 36,02% | 36,07% | 36,83% | 37,77% | 38,52% | 40,08% | 41,20% | 43,02% | 43,83% | 45,38% | 46,10% | 46,20% | 46,54% | 49,18% | 50,92% | 51,04% |

## Garbage collected directly- 1992 to 2009



58,82% 61,23% 62,87% 63,17% 66,31% 67,95% 69,85% 73,56% 74,44% 76,17% 76,22% 77,64% 78,77% 79,12% 79,09% 81,89%

1992 1993 1995 1996 1997 1998 1999 2001 2002 2003 2004 2005 2006 2007 2008 2009
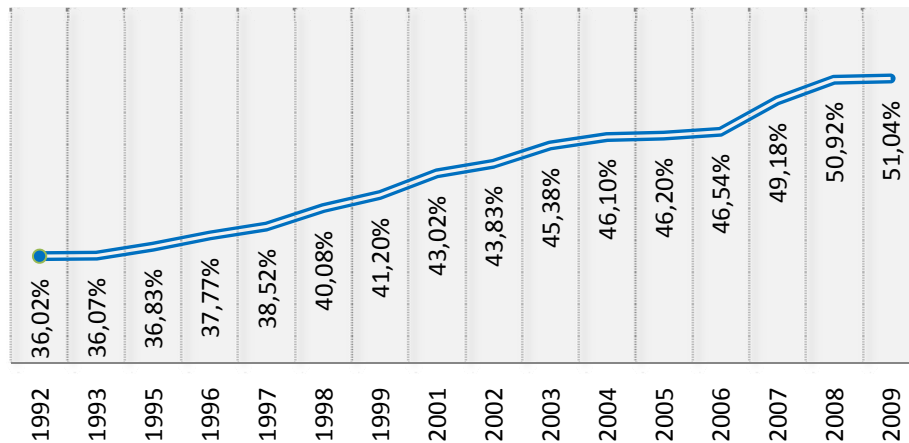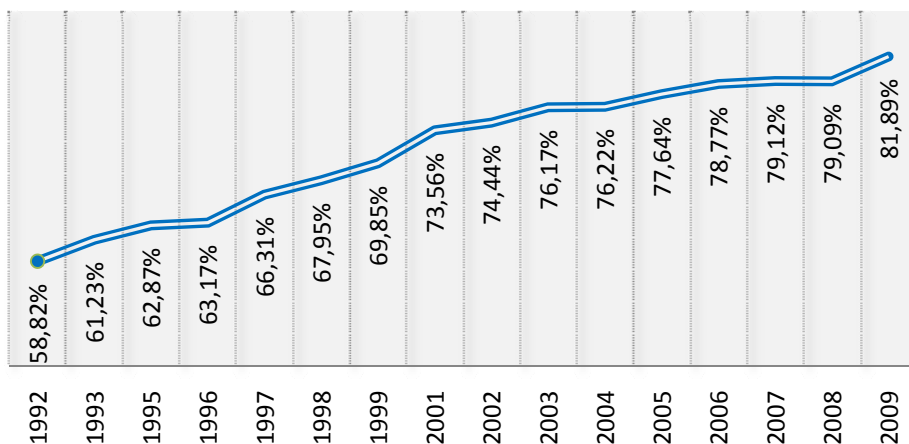
*Source: CPS/FGV from microdata of PNAD/IBGE*

## Sewage – 2009
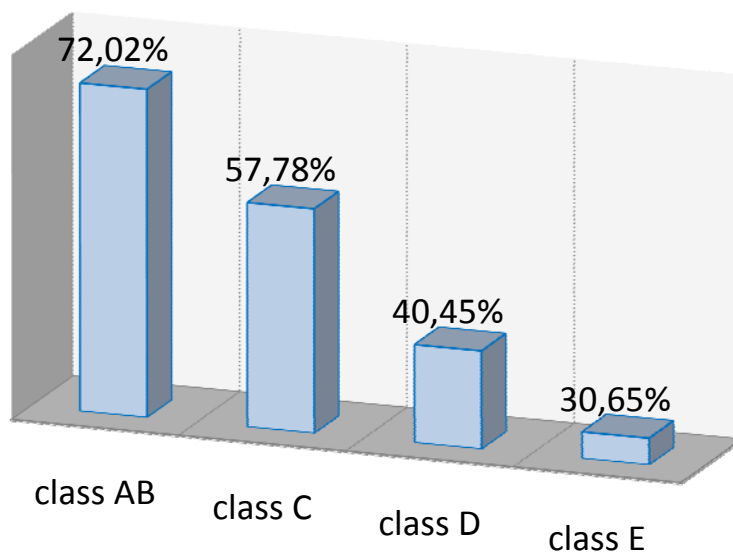


72,02%

57,78%

40,45%

30,65%

class AB    class C    class D    class E

65

**Garbage collected directly – 1992 to 2009**



class AB — 91,85%
class C — 87,46%
class D — 76,97%
class E — 64,20%
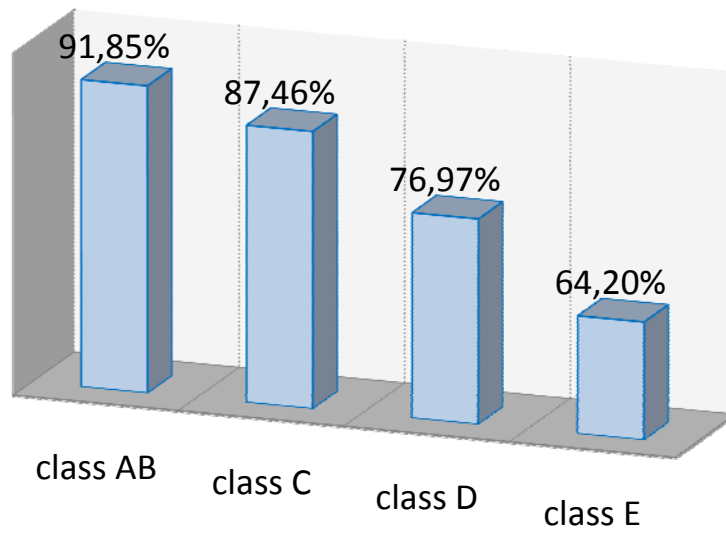
*Source: CPS/FGV from microdata of PNAD/IBGE*

**Consumer**

**Washing machine – 1992 to 2009**



| Year | Value |
|------|-------|
| 1992 | 23.09% |
| 1993 | 23.15% |
| 1995 | 25.43% |
| 1996 | 29.35% |
| 1997 | 31.00% |
| 1998 | 31.45% |
| 1999 | 31.92% |
| 2001 | 32.78% |
| 2002 | 32.93% |
| 2003 | 33.46% |
| 2004 | 33.65% |
| 2005 | 35.03% |
| 2006 | 36.87% |
| 2007 | 38.77% |
| 2008 | 41.32% |
| 2009 | 44.37% |
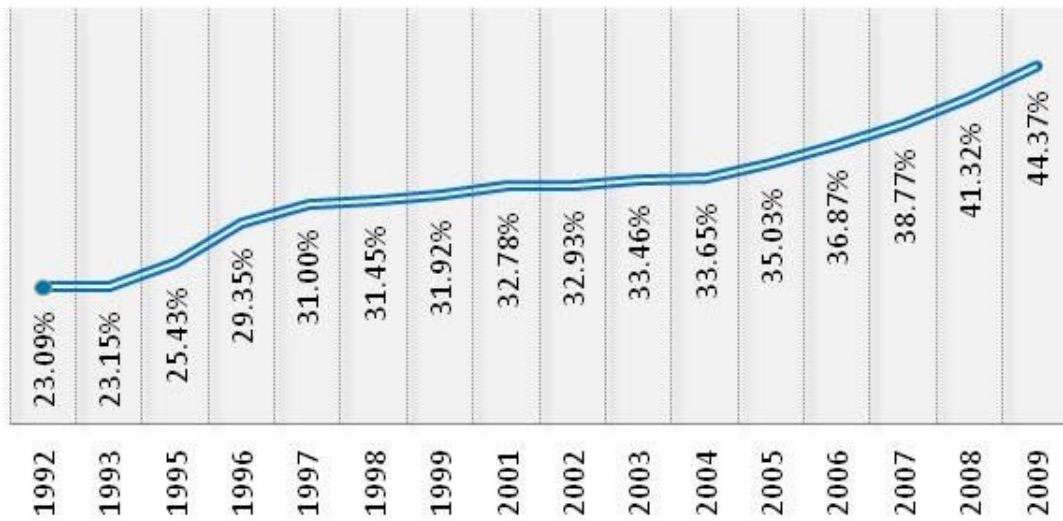
## Refrigerator– 1992 to 2009



69.88%  69.89%  73.23%  76.86%  79.22%  80.80%  81.77%  84.25%  85.77%  86.57%  87.33%  87.92%  89.20%  90.83%  92.40%  93.85%

1992  1993  1995  1996  1997  1998  1999  2001  2002  2003  2004  2005  2006  2007  2008  2009

## Television – 1992 to 2009
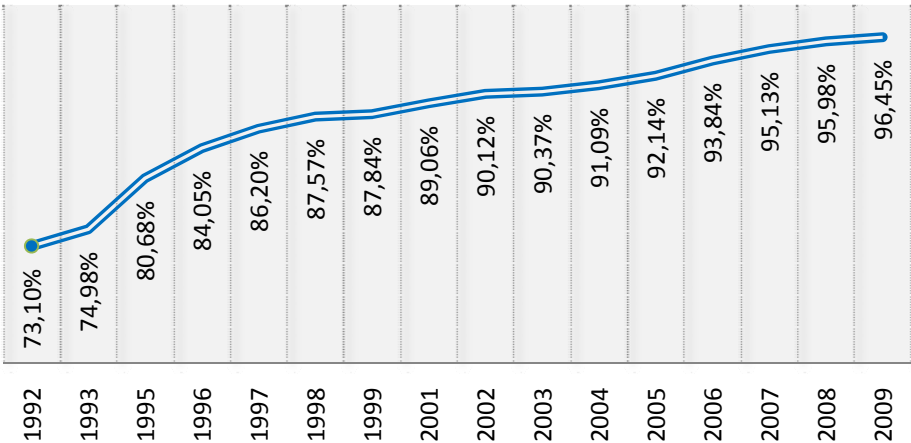


73,10%  74,98%  80,68%  84,05%  86,20%  87,57%  87,84%  89,06%  90,12%  90,37%  91,09%  92,14%  93,84%  95,13%  95,98%  96,45%

1992  1993  1995  1996  1997  1998  1999  2001  2002  2003  2004  2005  2006  2007  2008  2009

## Washing machine - 2009



85,72%
53,22%
24,96%
16,48%

class AB    class C    class D    class E

## Refrigerator - 2009



99,69%
97,49%
92,50%
79,82%

class AB    class C    class D    class E

# Freezer - 2009



Chart showing Freezer ownership by class in 2009:
- CLASSE AB: 35,91%
- CLASSE C: 17,68%
- CLASSE D: 7,96%
- CLASSE E: 5,86%
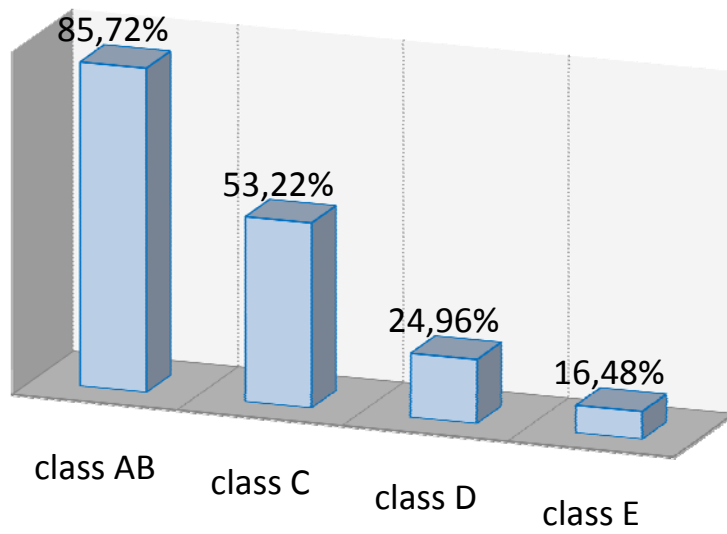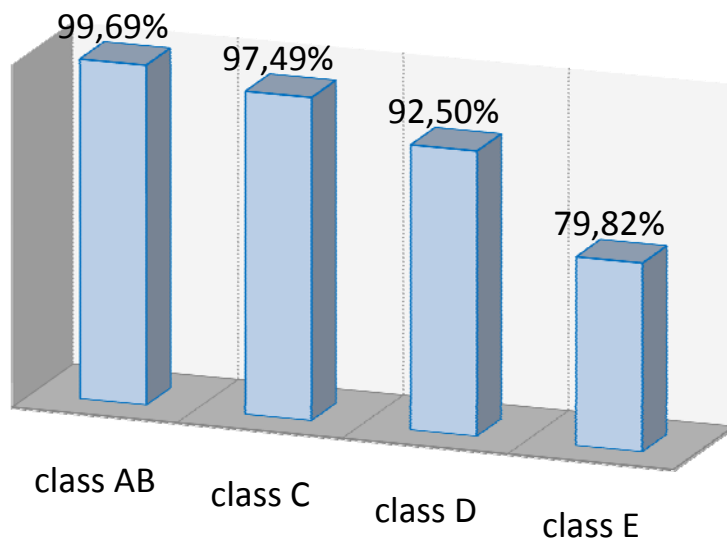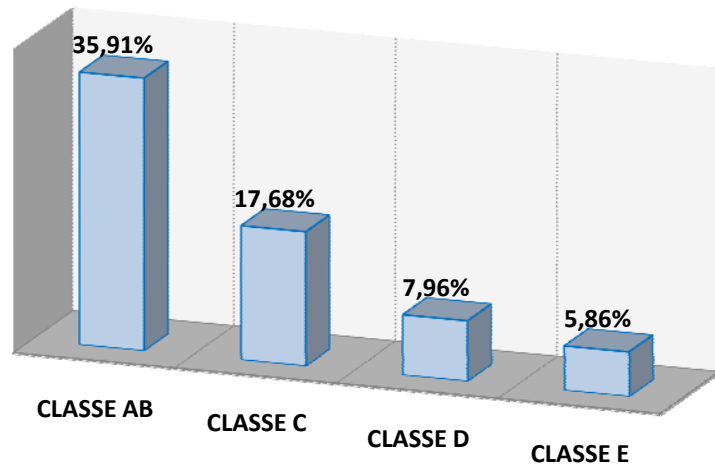
*Source: CPS/FGV from microdata of PNAD/IBGE*

## Housing

# More than 3 bathrooms – 1992 to 2009



Line chart showing "More than 3 bathrooms" from 2002 to 2009:
- 2002: 1,95%
- 2003: 1,92%
- 2004: 1,81%
- 2005: 1,94%
- 2006: 2,11%
- 2007: 2,08%
- 2008: 2,12%
- 2009: 2,05%
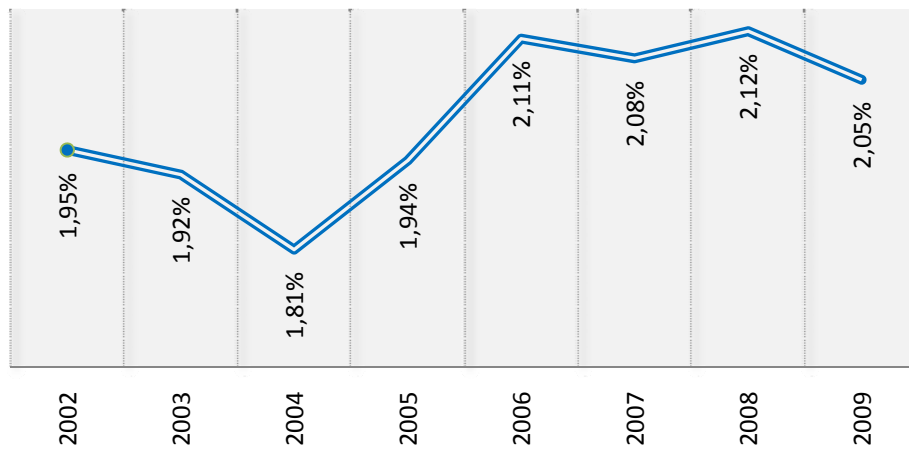
*Source: CPS/FGV from microdata of PNAD/IBGE*

**More than 3 bathrooms – 1992 to 2009**



13,24%

1,07%

0,23%

0,35%

class AB    class C    class D    class E
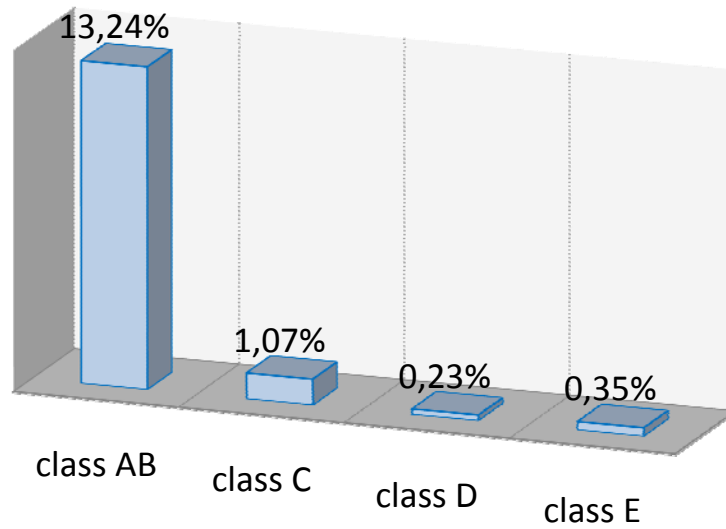
Source: CPS/FGV from microdata of PNAD/IBGE

**Financed homeowners – 1992 to 2009**



6,44%  6,61%  6,21%  6,05%  6,02%  6,23%  5,63%  4,77%  4,89%  4,80%  4,31%  4,23%  4,37%  4,18%  4,35%  4,29%

1992  1993  1995  1996  1997  1998  1999  2001  2002  2003  2004  2005  2006  2007  2008  2009
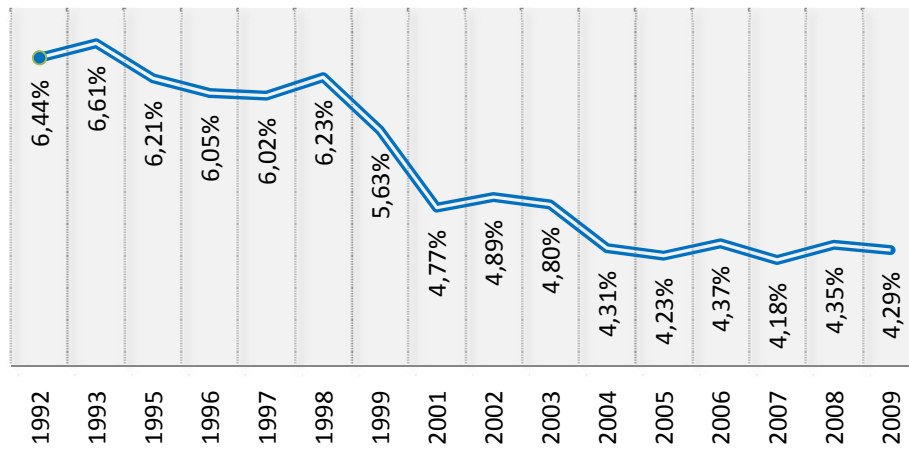
# Evolution (%) Population by Housing Condition

|                       | 2003  | 2008  | 2009  |
|-----------------------|-------|-------|-------|
| Own - already paid    | 70.62 | 71.27 | 70.58 |
| Own - still paying     | 4.80  | 4.35  | 4.29  |
| Rent below the median | 8.70  | 7.17  | 6.80  |
| Rent above the median | 4.73  | 8.19  | 8.98  |
| Given                 | 10.38 | 8.23  | 8.61  |
| Other condition       | 0.65  | 0.57  | 0.58  |

*Source: CPS/FGV from microdata of PNAD/IBGE*

## Financed homeowners – 2009
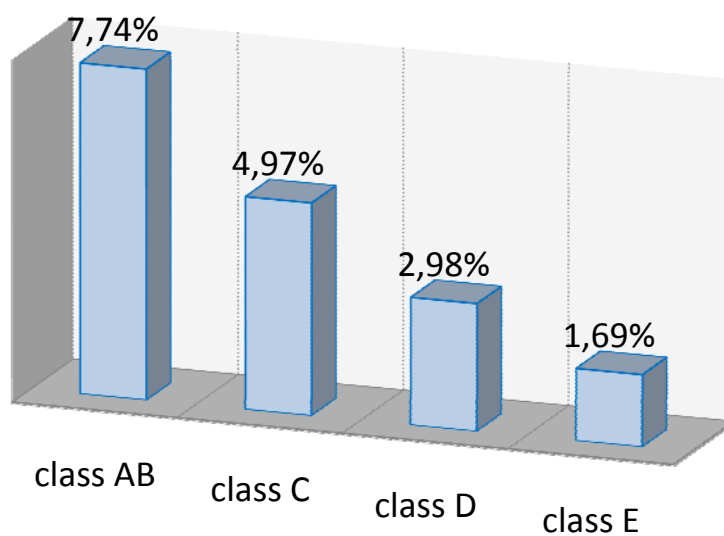


Source: CPS/FGV from microdata of PNAD/IBGE

# Chapter 8 – Assessing the Sustainability of Living Conditions (Synthesizing Stocks into Income Flows)

Our initial approach to measuring economic classes is to look at income distribution as a whole and then organize it into strata. We prefer to begin by focusing our attention on social indicators based on per-capita income, for which there is ample literature and tools available. Thus, we use the knowledge developed in the area of poverty studies in Brazil that led to the installation of the International Poverty Center (IPC) in Brazil, to analyze all the income distribution, not only the inferior part of it. As a starting point, we decided to use an indicator whose qualities and limitations we know well, and extend it to other dimensions later, using the per capita income as a connecting thread. We explored three other perspectives to describe economic classes in general and the new middle class, in particular.

**Consumption Potential**

An alternative way of defining the economic classes (E, D, C, B and A) is the consumption potential. The "Critério Brasil" system uses access to and number of consumer durables (TV, radio, washing machine, refrigerator and freezer, video cassette or DVD), bathrooms, and maid[7]. This criterion estimates the weights based on a classical Mincer income equation and classifies people according to point ranges, using characteristics more permanent than current income. Our approach is to use a similar calculation not to define borders between classes, but to evaluate people's consumption potential in each class. We calculate consumption potential indices, and not the creation of a waterproof class classification structure. We use the same kind of income equation as *Critério Brasil*, as usual in the literature about the economics of labor. Another difference is that we express results continuously, with a simulator that keeps the estimated coefficient values found in the original model and do not round off figures, because this would cause unnecessary damage to the precision of our estimates. We

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[7]  Maids are relatively common in Brazil reflecting the existing high income inequality.

apply that approach to a vast quantity of household information and enjoy the advantage of using samples of a size and design only reached by IBGE domicile surveys in Brazil.

In short, we created a consumption potential index that uses income metrics as a connecting thread and unit of measurement of the indicator. People find income metrics easier to understand than an artificial discrete points measure, because it is part of their daily lives. After defining the model, we quantify the indicator for each characteristic, especially for economic classes based on current income. A reader initiated in Economics may recognize the permanent income concept created by Milton Friedman, in 1957, in our consumption potential indicator. Since the seminal work of Robert Hall in 1977, we have known that current consumption should contain all the information about future family consumption standards.

**Income Generation Ability**

In our research, people are not intrinsically poor, rich or new middle class. They are, or not, in these states, in different moments, when the surveys representing the population go to the field. We now agree we must test to what extent income and consumption levels will be sustainable in the future. In the terms of La Fontaine's fable, worker ants must be distinguished from consumerist grasshoppers.

Besides measuring consumption potential based on a large amount of information from household surveys, we also propose a complementary conceptualization to measure how the Brazilian middle class evolved from the producer standpoint, using the income equation, function of productive assets of all the family members. That means it is necessary to observe the ability to maintain this lifestyle by generating and keeping income over time. We believe the differences between the consumerist hedonism and the necessary consumption, between the ones close to subsistence or far from credit and the ones with the ability to produce, generate two analyses complementary with each other and with the current income.

This kind of concern with education and occupational inclusion is present in criteria applied in England, Portugal and India. The only variable Critério Brasil considers is the education of the head of household. The innovation in our methodology is its ability to observe symbolic aspects of middle class 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 items that were a state monopoly, such as social security, education, health and home financing. We quantify the production side using income metrics from the Mincer equation, which permits integration with the remaining consumer characteristics and income itself.

**Technical aspects**

We present initially in this chapter a discussion on the series of estimating models.

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**Multivariate Analysis – Methodology**

The bivariate analysis captures the role played by each attribute considered isolatedly in the demand for insurance. That is, we desconsider possible and probable interrelations of the explanatory variables. For example, in the calculation of insurance by state within the Federation, we don't consider the fact that Sao Paulo is a richer place than most states, thus should have greater access to insurance. The multivariate analysis used further ahead seeks to consider these interrelations through a regression of the many explanatory variables taken together.

Aiming to provide a better controlled experiment than the bivariate analysis, the objective is to capture the pattern of partial correlations between the variables, interest and explanatory. In other words, we have captured the relations between the two variables, keeping the remaining variables constant. This analysis is very useful to identify the repressed or potential demand as we compared them, for instance, which are the chances of a person with more education having higher income, if he/she has the same characteristics as the comparison group.

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**Choice Models for Explanatory Variables**

We being exploring the wide range of information relating to the possession and use of assets based on PNAD, using a model of variable selection according to the level of statistical significance to explain the household per capita income. It is worth noting that both in the field of traditional social indicators (i.e. poverty and welfare[8]) just as in the definition of economic classes (i.e. E, D, C and AB) the family/househodl is the basic unit of analysis under the hypothesis of its members' solidarity who, on the whole, share the earnings much like the "all for one and one for all" of Dumas' Three Musketeers.

Another point is the use of income as a unit of reference to integrate different information on access and use of productive and consumption assets. In our view, whether people like it or not, income is the most used variable in economics and, if we want to increase the dimension of the analysis, it is interesting to use what has already been done in practice. Here it is important to note that we speak of the sum of different income sources reported by people to PNAD and not the aggregate vision of production implied in the GDP[9].

Afterwards, based on the selection of variables, we tracked variables referring to the producer and consumer available on PNAD. The exercise is part of a learning process to decide what matters in the definition of classes and how much each of the estimated components are worth. In order to determine which of them have higher explanatory power and which will be more relevant, by applying a variables' sequenced choice procedure that uses a Mincerian income equation model.

The list of selected variables for each model (from a test F) is provided next, in increasing order of importance, in a self-explanatory list of 31 groups of variables; the eliminated variables are not reported in the table:

---

[8] Welfare as inequality measure derived from the social welfare measure used.
[9] The Stiglitz-Sen report, launched on Sept 15 2009, argues in favor of the use of information from household surveys besides information based on GDP (per capita PPP) that prevails in the analysis. This is described in the introduction.

**ORDER OF ENTRY IN THE MODEL**

| | |
|---|---|
| 1 | Number of per capita |
| 2 | Telephone |
| 3 | Spouses education |
| 4 | Type of family |
| 5 | chefe contribui para previdência head contributes to social security |
| 6 | Washing machine |
| 7 | # of bedrooms per capita |
| 8 | Head's education |
| 9 | position on the head's job |
| 10 | school attendance of child(7 to 14 years) |
| 11 | school attendance of child (0 a 6 anos) |
| 12 | position on the head's job |
| 13 | Computer |
| 14 | Refrigerator |
| 15 | school attendance of child (15 a 17 anos) |
| 16 | type of home (own, lease and financing) |
| 17 | Syndicalized Head |
| 18 | Freezer |
| 19 | # of bedrooms per capita |
| 20 | sewage |
| 21 | Radio |
| 22 | # of bathrooms |
| 23 | number of residents |
| 24 | Television |
| 25 | Garbage colected |
| 26 | age that the head started to work |
| 27 | number of rooms |
| 28 | share of labor income |
| 29 | # of bedrooms |

Initially, it is worth noting that we purposefully omitted sociodemographic and spatial variables from the explanation of per capita income so that we could infer afterwards which is the equivalent income of people with different features. We should also mention that the variable number of toilettes, followed by access to mobile telephones well before completed years of schooling of the reference person comes in 8th place (3rd place in the case of the spouse education) that typically has the highest

explanatory power in empirical researches on income inequality and poverty. Obviously, we are not attempting to establish a causal relation between different variables of stock and income flow, even more because this is a two-way relation. In our interpretation, we will identify variable that are more dependent on income that income-generating. The exercise helps to gauge the structure of the model that assign equivalent income and its counterparts in terms of consumption potential and income-generating capacity. The table is self-explanatory.

**Income simulator: Total, consumer and producer**

Tool used to simulate total income of the population through a combination of individual attributes tied to the consumer and producer. For that, you must select characteristics in the form below and click on simulate.

<div style="border:1px solid #ccc;">

**Consumer's Characteristics**

| | |
|---|---|
| Has radio | Yes |
| Has TV | Yes |
| Has laundry machine | Yes |
| Has refrigerator | Yes |
| Has freezer | Yes |
| Has sewage | Yes |
| Has garbage collection | Yes |
| Type of family | Couple without children |

| | |
|---|---|
| Housing condition | Own house, paid for |
| Number of residents | 4 |
| Number of bathrooms | 1 |
| Number of rooms | 5 |
| Number of bedrooms | 2 |

**Producer's Characteristics**

| | |
|---|---|
| Has computer | Computer (with Internet access) |
| Has telephone | Landline and cellphone |
| Boss' contribution to social security | Contributes to private and public social security |
| Boss' ocupation | Private employee |
| Residents up to 6 years old | No residents up to 6 years old |
| Residents from 7 to 14 years old | No residents from 7 to 14 years old |
| Residents from 15 to 17 years old | No residents from 15 to 17 years old |

| | |
|---|---|
| Age at which the boss started working | 25 to 29 years |
| Unionized boss | Yes |
| Boss' education | 12 |
| Total family income | 100 |
| Income of family labour | 85 |
| Partner's education | 8 to 11 years |
| Partner's ocupation | Private employee |

</div>

The graphs show the total household income, in the following order:
- Total: expenditure potential and income generation
- Consumer perspective: expenditure potential
- Producer's perspective: income generation

One of the bars represents the current scenario, according to the selected attributes; the other is the previous scenario as simulated before.
http://www3.fgv.br/ibrecps/NCM/SIM_PNAD_anos_RENDATOT/renda-eng.htm
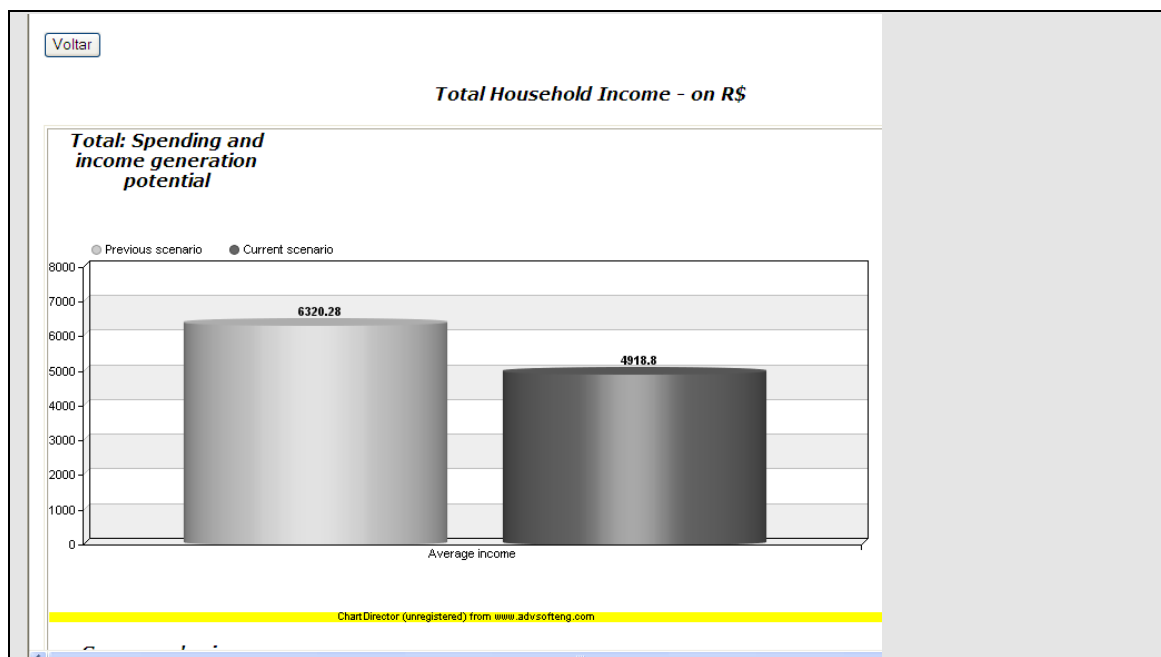
In the table above, we are not considering the magnitude of each category's coefficient, but the power of the categories taken together to explain income. Wen looking at the magnitude of extreme coefficients in each variable, the equivalent income of a person who lives in a household with one bathroom for each person, if we double it (two bathrooms for four people instead of one bathroom)  the income increases 27,5% in relation to the previous scenario; while a person with a fixed landline and a mobile at home, ceteris paribus, and a person with none of these communication technologies at home, it is 38,5% higher. 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 incomplete university degree (12 or more years of schooling) has a 28% higher income than a spouse with an ignored educational level (regression basis, zero coefficient), which in turn has an income 14% 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% lower than a family with a couple and no kids. The fifth variable with higher predictive power is that 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 reference

78

person pays both types of insurance with a family/household per capita income around 30% higher than those inactive or unemployed. The remaining variables may be analyzed through the same prism or through the simulator described in the box above.

Appendix II presents a conceptual explanation and a practical application of another methodology to define class based on principal components, and not based on people's income. 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 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 practical result would 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 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 and mobile phones and computer connected to the internet. The second vector with more relevance may be defined as that consisting of some variables of quality on the household's housing quality captured based on the per capita number of room, bedrooms and toilettes, the number of members in the household and the presence of teenagers as well as variables of 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 (family headed by a mother with children of up to 14 years old). 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.

**Marginal contribution of the stocks to the inequality of flows**

We explored then the contribution of each variable of stock on the variance ofthe household per capita income inequality. 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:

<div align="center">

**Marginal Contribution of Income Inequality**

</div>

| | Without the respective variable | | |
|---|---|---|---|
| | $R^2$ | dif $R^2$ | dif $R^2$/$R^2$ orig% |
| All variables ($R^2$ original) | 0,6924 | - | |
| | | | |
| Telephone | 0,6813 | 0,0111 | 1,60 |
| Spouse's job position | 0,6825 | 0,0099 | 1,43 |
| Children's school attendance(7toa 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(0toa 6 years old) | 0,6884 | 0,0040 | 0,58 |
| Type of household (owned, financed and rent) | 0,6888 | 0,0036 | 0,52 |
| Children's school attendance(15toa 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 |
| number of rooms | 0,6923 | 0,0001 | 0,01 |
| number of toilettes | 0,6923 | 0,0001 | 0,01 |
| Waste collection | 0,6923 | 0,0001 | 0,01 |
| number of bedrooms | 0,6924 | 0,0000 | 0,00 |
| Participation of work income | 0,6924 | 0,0000 | 0,00 |

## Mincerian Equation

The mincerian equation of salary is the basis of a vast empirical literature of labour economics. The salary model by Jacob Mincer (1974) is the framework used to estimate the returns on education, among other variables that determine the salary. Mincer conceived an equation for earnings that would be dependent on explanatory factors related to the academic level and experience, besides possibly other attributes, like sex, for instance

This equation is the basis of the labor economics particularly in what concerns the effects of education. Its estimate has already encouraged hundreds of studies, that tried to include different educational costs, such as taxes, fees, opportunity costs, learning material, just as the uncertainty and expectation of agents present in the decisions, the technological progress, non-linearity in school, etc. identifying the costs of education and work earnings enable a calculation of the internal rate of return on education, which is the discount rate that must be compared to the market's interest rates to determine the optimal quantity of investment in human capital. The MIncer equation is also used to analyze the relation between growth and educational level in a given society, besides inequality determinants.

The typical econometric model of regression of the mincerian equation is:

$$\ln w = \beta_0 + \beta_1 \, educ + \beta_2 \, exp + \beta_3 \, exp^2 + \gamma' \, x + \epsilon$$

where
  **w** is the salary earned by the individual;
  **educ** is its educational level, measured by years of schooling;
  **exp** is its experience, whose Proxy is the individual's age.
   **x** is a vector of the observable characteristics of the individual, such as race, gender and region;
  $\epsilon$ is a stochastic shock
.

This is a model of regression in the log-level format, that is, the dependent variable - salary – is in a logarhytm format and the independent variable, more relevant – education – is on level. Therefore, the $\beta_1$ coefficient measures how much an extra year of scholing causes a proportional variation in the individual's salary. For instance, if $\beta_1$ is estimated in 0,18, this means that each extra year of study will be related on average with na increase in salary of 18%.

Mathematically, we have:

Deriving , we found that ( $\partial \ln w / \partial \, educ$ ) = $\beta_1$
On the other hand, by virtue of chain, we have:

$$(\partial \ln w / \partial \, educ) = (\partial w / \partial \, educ) \, (1 / w) = (\partial w / \partial \, educ) / w$$

Logo, $\beta_1 = (\partial w / \partial \, educ) / w$, corresponding thus to the percentage variation of the salary from each unit increase per year of study.

This part explores the one-to-one evolution over time and between economic strata of a vast range of different stocks of different assets and goods, as a basis for a broader view on whether life styles acquired are sustainable or not. Translating the wealth of data about assets inventories, grouped under two perspectives—consumer and producer—, and using one of La Fontaine's fables as example, the survey allowed us to divide Brazilians into ants and grasshoppers. We showed that, in the picture, Brazilians are more similar to cicadas, but the movie about the last five years shows a gradual metamorphosis towards ants. The progress in the Brazilian ability to generate income increased, according to our index, 31.2% from 2003 to 2009, and the consumption potential increased 22.59%. These data reveal the producer's side increased 38% faster than the consumer's. During the crisis year, these indexes increased 3.05% and 2.49%, respectively.

As a complement, the survey details the importance of different income sources for the advance of social indicators in the country. Results indicate that, despite the strong growth of income from social programs and retirement pay linked to the minimum wage, the amount due to work is close to the significant income growth of 4.72% during the 2003-2009 period. The average work income increase of 4.61% per year, per Brazilian, which corresponds to 76% of average Brazilian income, provides a sustainability basis for life conditions in addition to official income transfers.

**Formal Employment Generation New Record**

How sustainable is this inclusive growth process? One of its key features is formal employment generation which doubled after 2004 with no labour reforms attached to it. Brazil is currently breaking month after month its previous highest record by 20 to 25%. It generated nearly 1,95 million jobs in the first eight months of 2010 more than any other single year taken as a whole. A conservative forecast for 2010 is 2,3 million net new records of formal employment generation which is perhaps the main symbol of the emergence of a new middle class in the country.

### Net Generation of Formal Employment - BRAZIL Yearly (2000 to 2010*)



657.596  591.079  762.415  645.433  1.523.276  1.253.981  1.228.686  1.617.392  1.452.204  995.110  1.954.531

2000  2001  2002  2003  2004  2005  2006  2007  2008  2009  2010*
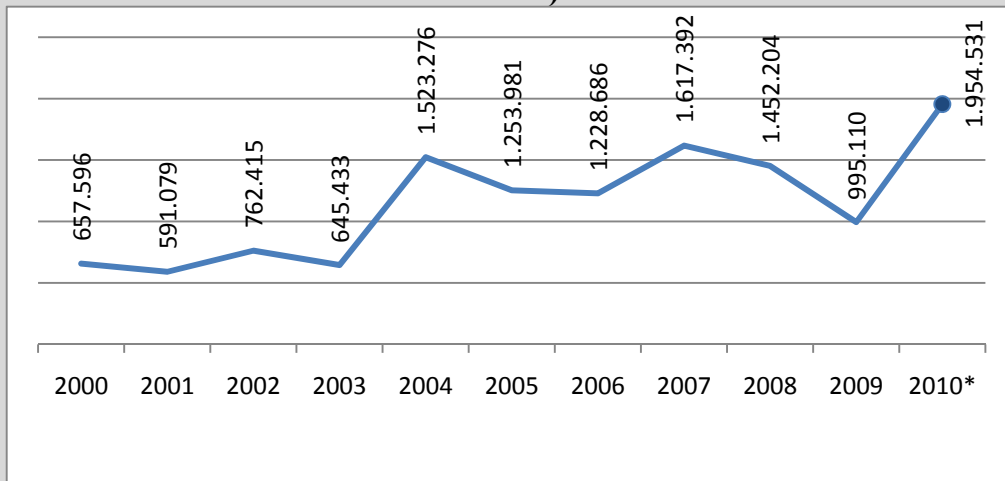
*Source: CAGED / MTE       * up to august only*

Source: CAGED / MTE

* up to August 2010 only

# Chapter 9 - After the Crisis (A.C.)

**Ended 2009, poverty, the new middle class and its determining factors, inequality and income average recovered from the undertow of January, returning to the pre-crisis peak.**

**The ABC classes in December 2009 were at the historical record of 69,27% despite the fact that its components individually were not at the apex.**

**The difference of the ABC class is negligible, 0,1% compared to the second best of the series, 69,34% of December 2008.**

Tsumany or ripple? That is the question that many have asked themselves in the last 16 month regarding the effects in Brazil of the international crisis of September 2008. After all, what was the impact of the crisis on the purse of Brazilians? What is the complete balance up to December 2009 of the social indicators based on income? Has poverty and the inequality have recovered from the undertow of January 2009? And the new Brazilian middle class continued to grow, stagnated or went under? And the individual risk of falling from the higher class has returned to the pre-crisis standards? Who suffered a greater loss with the crisis? Was it those of the manufacturing sector, the ones with a higher education or those that live in the outskirts of the big cities? After the external storm what can be expected of 2010?. And in the longer horizon period up to 2014 will we repeat the social conquests of the 2003 up to 2008 period? Are we facing the prospects of a new little big decade?

The present work is an epilog of a series of researches titled "chronicle of an announced crisis" that monitored the impacts of the external shocks through the microdata of the PME/IBGE for the six major metropolitan Brazilian regions. The initial chapter that was at the origin of the series, showed that up to December 2008 there were no signs of impacts in our series. The second chronicle illustrated the critical period of the crisis: the undertow of January 2009 when the crisis arrived strongly, eroding part of the previous social gains. Later studies showed more of the same, up to August: a trend of recovery of the majority of the social indicators. But now at the end of the Gregorian calendar of 2009, the year of the crisis, where are we in fact?

**2009: Crisis and the 360 Degrees Revolution**

Sixteen month after the arrival of the crisis there is already a clearer vision of its effects in the purse of the Brazilian in the six largest metropolis of his country. We start by the composition of the Brazilian society in terms of economic classes, based on per capita household income between the ages of 15 to 40 years. Even of those of the AB classes families earn household incomes of more than R$480 per month in total terms, that had suffered bigger losses during the crisis (-2,7% in January, having started their losses already in September 2008 after reaching its historical apex of 15,72% in August 2008) is 2% above the one year ago index. Today 15,63% of the population is in the AB classes, compared to 15,33% in December 2008. The C class, immediately under the upper class (total household income from R$1115 and R$4808) had not been hit until the January 2009 hangover. Despite the fact that the C class is in the second highest point of the monthly series with 53,58% of the population, in December 2009 has a negative balance of -0,4% compared to December 2008 its historical apex of 53,72%. Curiously the sum of classes ABC is at its highest level in December 2009 with 69,21%, despite its components not being individually at its peak. However, the difference is a trifling 0,1% compared to the series second best point, the 69,14% of December 2008 our other reference point.

In the text charts are shown covering annual averages of the several years. Preferably the analysis is centered on December tables, being the most recent indicative of the estates of the economic classes as well as to avoid the "carry-over effects" implicit in averages that make the time of changes obscure. The main text also presents the standard average of the months for several years that are complementary to the ones presented in the text,

If the maintenance of the "*status quo*" of income distribution in December can be considered a good result in a period of crisis. On the other hand, it hides a sudden stop of the previous improvement of the indicators: from December 2003 up to December 2008, the AB classes grew 43,8%, the C class grew 25,2%, the conjunction of them – ABC classes – grew 28,9%. The graph below synthesizes the observed changes of all economic classes in the comparison of December 2009 with December 2008 and its relation to the start of the expansionary cycle in December 2003.

## Variation of the Economic Classes % Pre versus Post-Crisis



|  | Class ABC | Class AB | Class C | Class D | Class E |
|---|---|---|---|---|---|
| dec03 - dec08 | 28,9% | 43,8% | 25,2% | -19,7% | -41,0% |
| dec08 - dec09 | 0,1% | 2,0% | -0,4% | 1,4% | -1,5% |
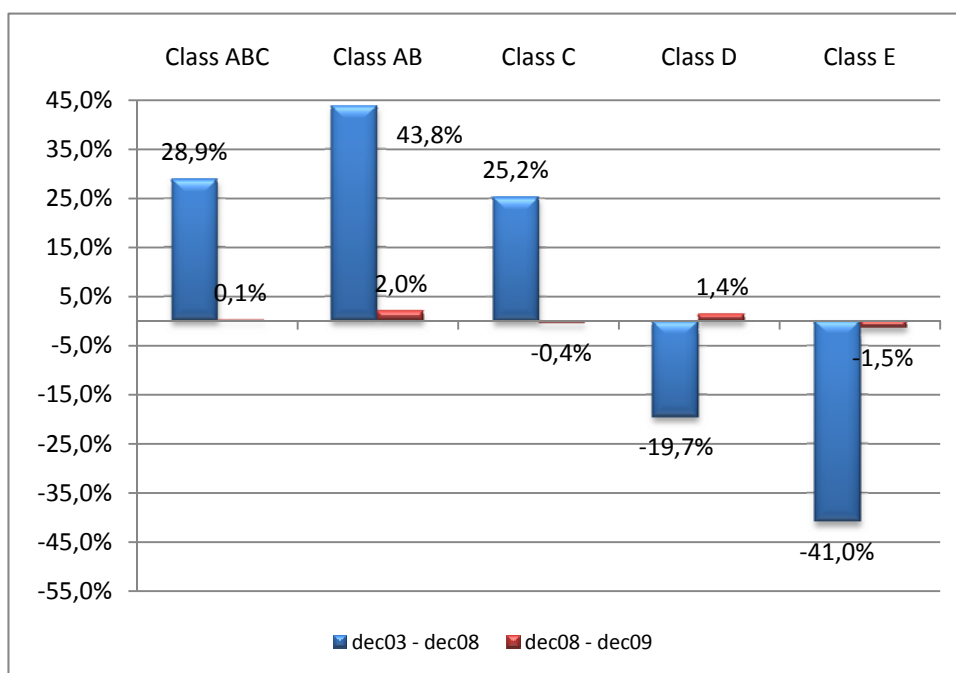
Source: CPS/FGV from the PME/IBGE micro-data

## Variation of the Economic Classes % Pre versus Post-Crisis



|  | Class ABC | Class AB | Class C | Class D | Class E |
|---|---|---|---|---|---|
| set08 to dec08 | 0.8% | -0.6% | 1.2% | -2.5% | -1.2% |
| dec08 to jan09 | -2.3% | -2.7% | -2.2% | 3.0% | 6.7% |
| jan09 to set09 | 1.0% | 5.3% | -0.2% | 0.6% | -4.1% |
| out09 to dec09 | 0.8% | 0.7% | 0.8% | -2.5% | -1.1% |
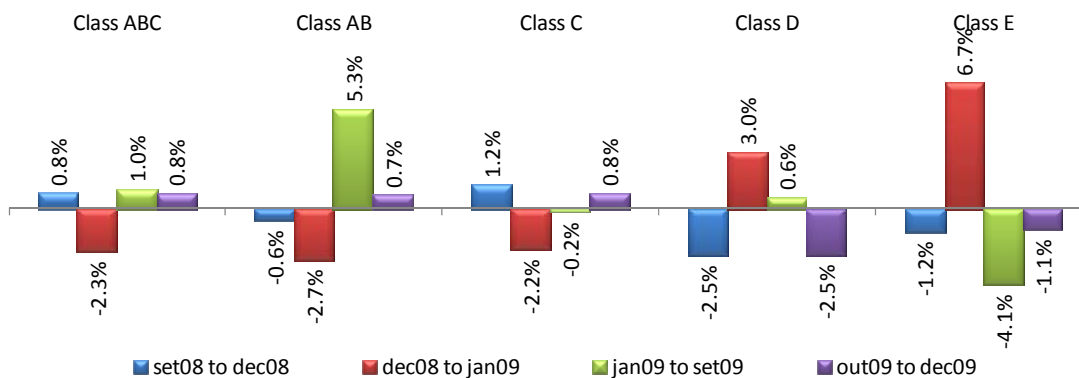
Source: CPS/FGV from the PME/IBGE micro-data

Returning to the analysis of social conjuncture, not due to the lack of other interesting subjects but because of the inflexion already observed in the begin of 2010: if we compare February 2010 with February 2009, we find very distinct results from the comparison of December 2009 with December 2008, despite having overlap of 10 months in the compared series. As the graph below demonstrates, in annual growth terms, we are back at the rhythm of improvement of the expressed series, similar to the pre-crisis period, between December 2002 and December 2008. Otherwise: class E is

reducing in a slightly faster rhythm now (-8.7% against -8.2%) like class D, which is showing a bigger reduction (-4.9% against -2.39%). Looking at the top of distribution, Class C is rising at a slower speed now (2.4% against 3.8%) but class AB faster (7.2% against 4.2%). This means we are out of the inertia of the crisis to the rhythm of the great little decade that occurred between 2003 and 2008.

If we portrait the comparison between January 2009 and 2010, with 11 months of superposition against the other two, December 2008 and 2009, and February 2009 and 2010, it looks more like the latter. The difference is granted by exchanging the passage between December 2008 and January 2009, when the crisis hit with the strength of an undertow, to the December 2009 to January 2010 series. This way we are completing a year after the instability effects have left the Brazilians' pockets. We just completed Year One after the crisis (A.C.).

The crisis was not a ripple, nor a tsunami, but an undertow as strong as temporary. From the international start of the crisis on September 15th 2008 until its arrival on the PME series took three and a half months, a similar gap to the arrival of the Asian crisis of September 1997 to the same series. The difference is that the effect of the latter lasted for five years in our series and the one from the recent crisis started to revert after one month.

But what explains the recent improvement (besides the pre-election climate)? The similarity of average and inequality movements together in the last 12 months with the previous period is even closer. The per capita income increased 7.7% last year, compared to 3.8% during the pre-crisis period. Income decentralization measured by the Gini coefficient varies almost the same -1.5% in the two periods. The Gini coefficient worsened in January 2009 (+2.5%) and then stayed leveled from December 2008 to December 2009. Comparing the last 12 months ended in May, it varies -1.5%, the same rate of the boom in the previous year (-1.4%), the period known in Brazil and elsewhere as the period when inequality fell in Brazil. Both points are relevant: the first one because it goes beyond the recently-published GPD period, ended in June 2010, while none of standard statistics used in conjectural analysis captured inequality.

Because every measure inequality entails a specific value judgment associated to the idea of social welfare from which it derives, the robustness of results should be carefully checked. The Theil-T index, which is more sensitive to changes at the lower

tail of the income distribution, decreased 3.2% per year between December 2002 and December 2008, and 6.2% from February 2009 to February 2010, indicating the decrease in Brazilian inequality is growing faster. It is important to highlight this issue, because income decentralization was possibly the biggest socio-economic Brazilian innovation in the last decade. Data from the post-crisis period suggest the equalization trend will continue. Obviously, we must take into account the constraints imposed by the geographical coverage and income concepts used in PME, besides some instability in monthly data.
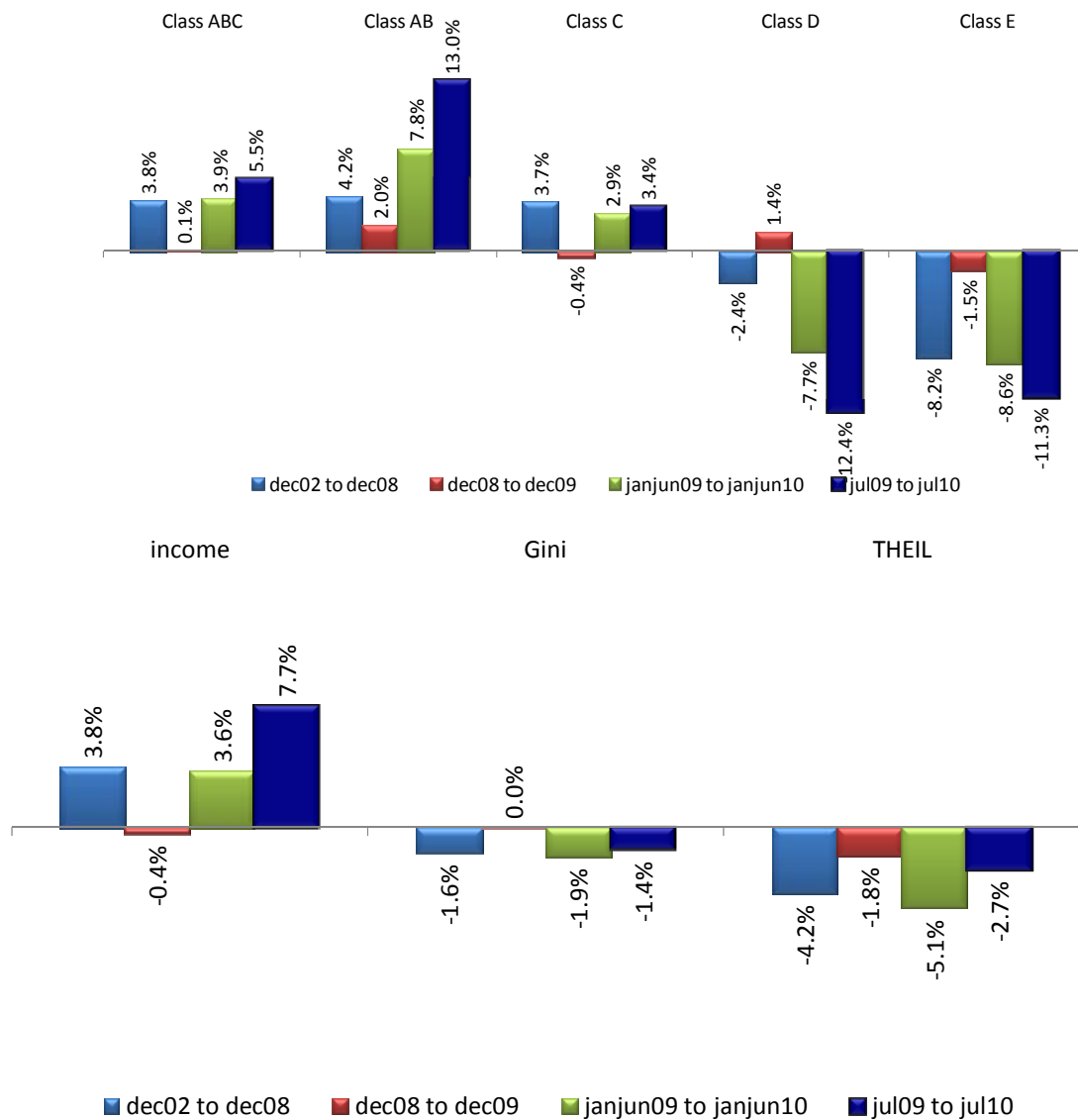


Source: CPS / FGV based on microdata PME / IBGE
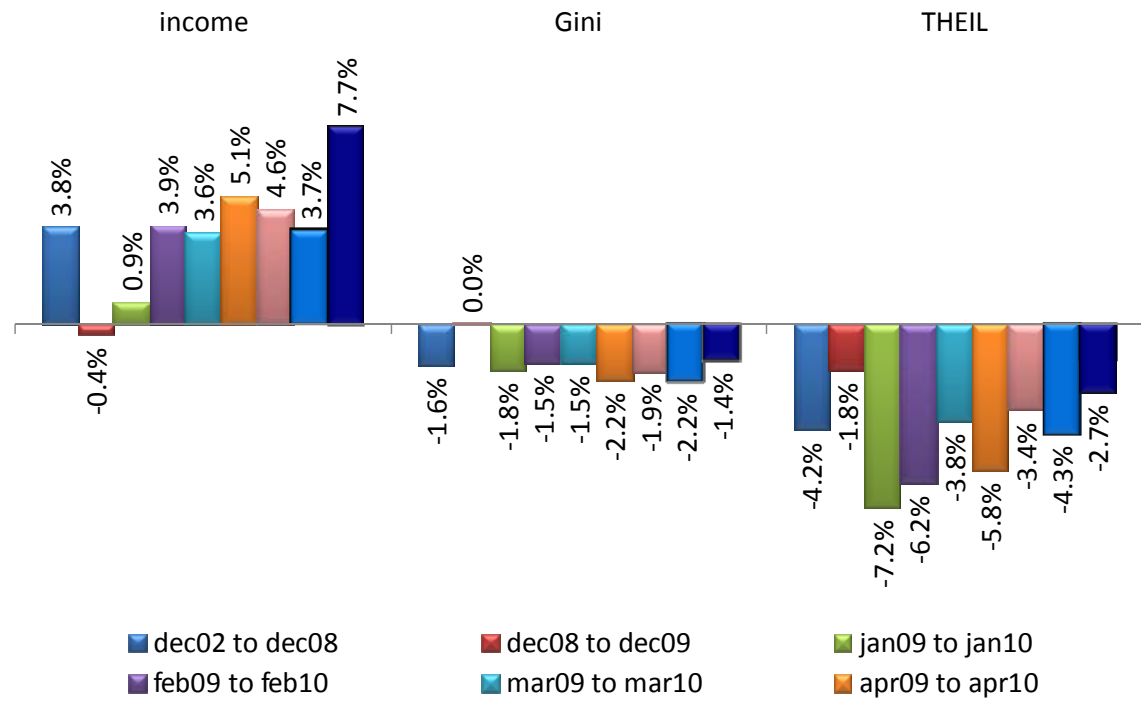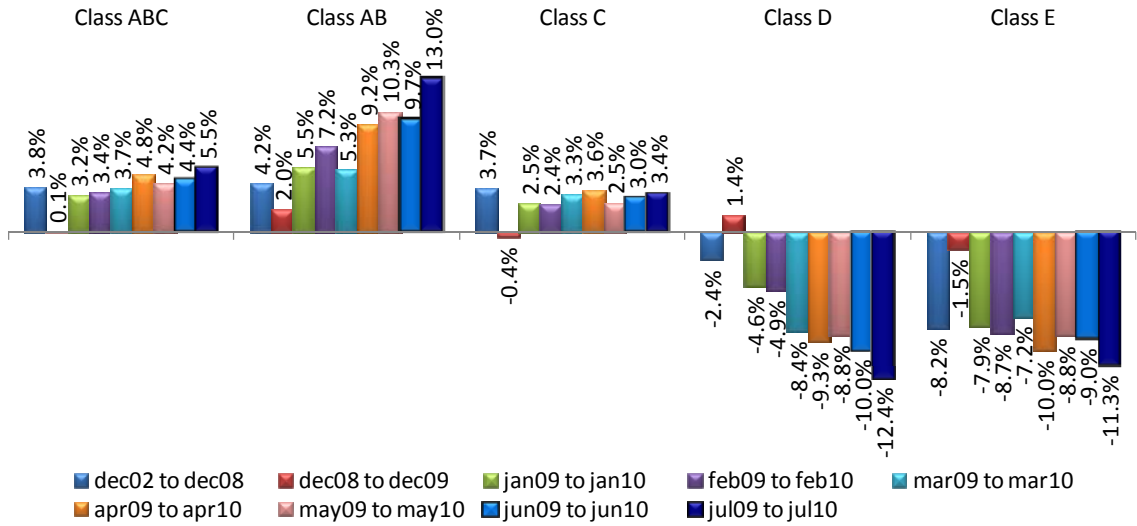
Source: CPS / FGV based on microdata PME / IBGE

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**Appendix I: Mincerian equation to Sustainability of Living Conditions**

**Producer Sise**

| Model Information | |
|---|---|
| Data Set | WORK.EQUACAO4N |
| Distribution | Normal |
| Link Function | Identity |
| Dependent Variable | LNRFPC |

| | |
|---|---|
| Number of Observations Read | 1152490 |
| Number of Observations Used | 374575 |
| Missing Values | 777915 |

| Criteria For Assessing Goodness Of Fit | | | |
|---|---|---|---|
| Criterion | DF | Value | Value/DF |
| Deviance | 37E4 | 152564.1038 | 0.4074 |
| Scaled Deviance | 37E4 | 374575.0000 | 1.0001 |
| Pearson Chi-Square | 37E4 | 152564.1038 | 0.4074 |
| Scaled Pearson X2 | 37E4 | 374575.0000 | 1.0001 |
| Log Likelihood | | -363275.9220 | |

| |
|---|
| Algorithm converged. |

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| **Intercept** | | 1 | 5.0882 | 0.0593 | 7365.33 | <.0001 |
| **Has a telephone** | Ignored | 1 | 0.2834 | 0.0262 | 116.69 | <.0001 |
| **Has a telephone** | Has cellphone | 1 | 0.2352 | 0.0035 | 4648.65 | <.0001 |
| **Has a telephone** | Has landline | 1 | 0.4171 | 0.0063 | 4397.41 | <.0001 |
| **Has a telephone** | Has landline & cellphone | 1 | 0.4763 | 0.0039 | 14697.0 | <.0001 |
| **Has a telephone** | No telephone | 0 | 0.0000 | 0.0000 | . | . |
| **Household education** | | 1 | 0.0354 | 0.0003 | 13347.3 | <.0001 |
| **Partner's education** | 1 to 3 | 1 | -0.0023 | 0.0182 | 0.02 | 0.9004 |
| **Partner's education** | 12 or more | 1 | 0.4024 | 0.0183 | 481.98 | <.0001 |
| **Partner's education** | 4 to 7 | 1 | 0.0188 | 0.0180 | 1.09 | 0.2971 |
| **Partner's education** | 8 to 11 | 1 | 0.0628 | 0.0180 | 12.24 | 0.0005 |
| **Partner's education** | No instruction or less than 1 year | 1 | 0.0253 | 0.0183 | 1.91 | 0.1670 |
| **Partner's education** | No partner | 1 | 0.0434 | 0.0183 | 5.64 | 0.0176 |
| **Partner's education** | Ignored | 0 | 0.0000 | 0.0000 | . | . |
| **Household head - contribution to social security** | Cont. priv. SS | 1 | -0.1587 | 0.0179 | 78.84 | <.0001 |
| **Household head - contribution to social security** | Cont. pub. SS | 1 | -0.3447 | 0.0075 | 2096.96 | <.0001 |
| **Household head - contribution to social security** | Unemployed | 1 | -0.3103 | 0.0543 | 32.60 | <.0001 |
| **Household head - contribution to social security** | Ignored | 1 | -0.5258 | 0.0079 | 4410.85 | <.0001 |
| **Household head - contribution to social security** | Inactive | 1 | -0.5409 | 0.0237 | 519.88 | <.0001 |
| **Household head - contribution to social security** | Cont. priv. & pub. SS | 0 | 0.0000 | 0.0000 | . | . |
| **Partner's ocupation** | Unemployed | 1 | -0.4209 | 0.0067 | 3967.68 | <.0001 |
| **Partner's ocupation** | Employer | 1 | 0.3358 | 0.0091 | 1371.90 | <.0001 |
| **Partner's ocupation** | Private employee | 1 | 0.0645 | 0.0043 | 229.76 | <.0001 |
| **Partner's ocupation** | Civil servant | 1 | 0.1362 | 0.0058 | 559.65 | <.0001 |
| **Partner's ocupation** | Ignored | 1 | -0.1440 | 0.0041 | 1205.01 | <.0001 |
| **Partner's ocupation** | Unpaid (trainee) | 1 | -0.2517 | 0.0058 | 1913.21 | <.0001 |
| **Partner's ocupation** | Liberal professional | 0 | 0.0000 | 0.0000 | . | . |
| **Partner's ocupation** | No partner | 0 | 0.0000 | 0.0000 | . | . |
| **Child 1** | Someone from 0 to 6 goes to priv. school | 1 | -0.3121 | 0.0051 | 3762.27 | <.0001 |

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| Child 1 | Someone from 0 to 6 goes to pub. school | 1 | -0.4176 | 0.0038 | 12069.1 | <.0001 |
| Child 1 | Someone from 0 to 6 doesn't go to school | 1 | -0.5224 | 0.0027 | 37146.7 | <.0001 |
| Child 1 | No one from 0 to 6 | 0 | 0.0000 | 0.0000 | . | . |
| Child 2 | Someone from 7 to 14 goes to priv. school | 1 | -0.2620 | 0.0044 | 3602.04 | <.0001 |
| Child 2 | Someone from 7 to 14 goes to pub. school | 1 | -0.5170 | 0.0024 | 48283.9 | <.0001 |
| Child 2 | Someone from 7 to 14 doesn't go to school | 1 | -0.5358 | 0.0093 | 3353.80 | <.0001 |
| Child 2 | No one from 7 to 14 | 0 | 0.0000 | 0.0000 | . | . |
| Child 3 | Someone from 15 to 17 goes to priv. school | 1 | -0.1640 | 0.0072 | 513.79 | <.0001 |
| Child 3 | Someone from 15 to 17 goes to pub. school | 1 | -0.3423 | 0.0029 | 13816.8 | <.0001 |
| Child 3 | Someone from 15 to 17 doesn't go to school | 1 | -0.2526 | 0.0056 | 2011.80 | <.0001 |
| Child 3 | No one from 15 to 17 | 0 | 0.0000 | 0.0000 | . | . |
| Household head occupation | Employer | 1 | 1.4879 | 0.0538 | 765.63 | <.0001 |
| Household head occupation | Private employee | 1 | 1.0001 | 0.0537 | 347.39 | <.0001 |
| Household head occupation | Civil servant | 1 | 1.1222 | 0.0538 | 435.64 | <.0001 |
| Household head occupation | Ignored | 1 | 0.8240 | 0.0533 | 239.27 | <.0001 |
| Household head occupation | Unpaid (trainee) | 1 | 0.9020 | 0.0540 | 278.97 | <.0001 |
| Household head occupation | Liberal professional | 1 | 1.1061 | 0.0536 | 425.28 | <.0001 |
| Household head occupation | Unemployed | 0 | 0.0000 | 0.0000 | . | . |
| Has a computer | Ignored | 0 | 0.0000 | 0.0000 | . | . |
| Has a computer | Has comp. w/o Internet | 1 | 0.2084 | 0.0041 | 2606.28 | <.0001 |
| Has a computer | Has comp. w/ Internet | 1 | 0.3751 | 0.0031 | 14600.4 | <.0001 |
| Has a computer | No computer | 0 | 0.0000 | 0.0000 | . | . |
| **PARTICIPATION** | | 1 | -0.0110 | 0.0044 | 6.22 | 0.0126 |
| Age at which the Household head started working | 10 to 14 years | 1 | 0.0478 | 0.0152 | 9.88 | 0.0017 |
| Age at which the Household head started working | 15 to 17 years | 1 | 0.0263 | 0.0153 | 2.96 | 0.0856 |
| Age at which the Household head started working | 18 to 19 years | 1 | 0.0217 | 0.0155 | 1.96 | 0.1610 |
| Age at which the Household head started working | 20 to 24 years | 1 | 0.0694 | 0.0160 | 18.89 | <.0001 |

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| Age at which the Household head started working | 25 to 29 years | 1 | 0.0678 | 0.0189 | 12.93 | 0.0003 |
| Age at which the Household head started working | Up to 9 years | 1 | 0.0713 | 0.0154 | 21.40 | <.0001 |
| Age at which the Household head started working | Ignored | 1 | 0.3164 | 0.0165 | 368.10 | <.0001 |
| Age at which the Household head started working | 30 years or more | 0 | 0.0000 | 0.0000 | . | . |
| Unionized Household head | Ignored | 0 | 0.0000 | 0.0000 | . | . |
| Unionized Household head | No | 1 | -0.0952 | 0.0030 | 987.79 | <.0001 |
| Unionized Household head | Yes | 0 | 0.0000 | 0.0000 | . | . |
| Scale | | 1 | 0.6382 | 0.0007 | | |

**Note :** The scale parameter was estimated by maximum likelihood.

Source: CPS/FGV from microdata of PNAD/IBGE

**Consumer Side**

| Model Information | |
|---|---|
| Data Set | WORK.EQUACA O4N |
| Distribution | Normal |
| Link Function | Identity |
| Dependent Variable | LNRFPC |

| | |
|---|---|
| Number of Observations Read | 1152490 |
| Number of Observations Used | 381533 |
| Missing Values | 770957 |

| Criteria For Assessing Goodness Of Fit | | | |
|---|---|---|---|
| Criterion | DF | Value | Value/DF |
| Deviance | 38E4 | 179441.5694 | 0.4704 |
| Scaled Deviance | 38E4 | 381533.0000 | 1.0001 |
| Pearson Chi-Square | 38E4 | 179441.5694 | 0.4704 |
| Scaled Pearson X2 | 38E4 | 381533.0000 | 1.0001 |
| Log Likelihood | | -397467.6027 | |

Algorithm converged.

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| Intercept | | 1 | 4.5143 | 0.0127 | 125963 | <.0001 |
| Type of family | Couple with children below 14 years or 14 years and above | 1 | -0.2237 | 0.0057 | 1514.19 | <.0001 |
| Type of family | Couple with all children 14 years and above | 1 | 0.0552 | 0.0053 | 108.75 | <.0001 |

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| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| Type of family | Couple with all children below 14 years | 1 | -0.2003 | 0.0052 | 1465.40 | <.0001 |
| Type of family | Couple without children | 1 | 0.1254 | 0.0055 | 517.92 | <.0001 |
| Type of family | Mother with children below 14 years or 14 years and above | 1 | -0.4862 | 0.0080 | 3699.33 | <.0001 |
| Type of family | Mother with all children 14 years and above | 1 | -0.1152 | 0.0056 | 428.38 | <.0001 |
| Type of family | Mother with all children below 14 years | 1 | -0.4177 | 0.0068 | 3821.34 | <.0001 |
| Type of family | Other types of family | 0 | 0.0000 | 0.0000 | . | . |
| Number of bathroom – per capita | | 1 | 0.2887 | 0.0134 | 463.14 | <.0001 |
| Has a washing machine | Yes | 1 | 0.4346 | 0.0026 | 28524.7 | <.0001 |
| Has a washing machine | No | 0 | 0.0000 | 0.0000 | . | . |
| Number of bedrooms – per capita | | 1 | 0.4091 | 0.0163 | 626.81 | <.0001 |
| Has radio | Yes | 1 | 0.1249 | 0.0035 | 1246.85 | <.0001 |
| Has radio | No | 0 | 0.0000 | 0.0000 | . | . |
| Has a TV set | Yes | 1 | 0.0357 | 0.0068 | 27.66 | <.0001 |
| Has a TV set | No | 0 | 0.0000 | 0.0000 | . | . |
| Has a fridge | Yes | 1 | 0.3286 | 0.0052 | 3935.70 | <.0001 |
| Has a fridge | No | 0 | 0.0000 | 0.0000 | . | . |
| Has a freezer | Yes | 1 | 0.2395 | 0.0033 | 5311.29 | <.0001 |
| Has a freezer | No | 0 | 0.0000 | 0.0000 | . | . |
| Has Access to sewerage | Yes | 1 | 0.1202 | 0.0024 | 2446.48 | <.0001 |
| Has Access to sewerage | No | 0 | 0.0000 | 0.0000 | . | . |
| Access to waste collection | Yes | 1 | 0.2396 | 0.0041 | 3403.80 | <.0001 |
| Access to waste collection | No | 0 | 0.0000 | 0.0000 | . | . |
| Number of bathroom | | 1 | 0.1809 | 0.0045 | 1636.96 | <.0001 |
| Number of household members | | 1 | -0.0935 | 0.0016 | 3480.73 | <.0001 |
| Number of rooms | | 1 | 0.0447 | 0.0016 | 738.53 | <.0001 |
| Number of bedrooms | | 1 | -0.0053 | 0.0045 | 1.43 | 0.2311 |
| Number of rooms – per capita | | 1 | 0.0452 | 0.0043 | 111.45 | <.0001 |
| House | Rent below median | 1 | -0.0564 | 0.0046 | 153.52 | <.0001 |
| House | Rent above median | 1 | 0.3001 | 0.0041 | 5310.46 | <.0001 |
| House | Given | 1 | -0.0814 | 0.0041 | 386.64 | <.0001 |
| House | Ignored | 1 | 1.5696 | 0.0290 | 2920.75 | <.0001 |

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| House | Other condition | 1 | -0.1634 | 0.0147 | 123.34 | <.0001 |
| House | Own house, paying for | 1 | 0.2504 | 0.0058 | 1865.26 | <.0001 |
| House | Own house, paid for | 0 | 0.0000 | 0.0000 | . | . |
| Scale | | 1 | 0.6858 | 0.0008 | | |

**Note :** The scale parameter was estimated by maximum likelihood.

## Mincerian equation (log of the total household income)

## Consumer and Producer Sides Brazil - 2009

| Model Information | |
|---|---|
| Data Set | WORK.EQUACAO4N |
| Distribution | Normal |
| Link Function | Identity |
| Dependent Variable | LNRFPC |

| | |
|---|---|
| Number of Observations Read | 1152490 |
| Number of Observations Used | 374575 |
| Missing Values | 777915 |

| Criteria For Assessing Goodness Of Fit | | | |
|---|---|---|---|
| Criterion | DF | Value | Value/DF |
| Deviance | 37E4 | 126283.5970 | 0.3372 |
| Scaled Deviance | 37E4 | 374575.0000 | 1.0002 |
| Pearson Chi-Square | 37E4 | 126283.5970 | 0.3372 |
| Scaled Pearson X2 | 37E4 | 374575.0000 | 1.0002 |
| Log Likelihood | | -327868.3375 | |

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| Intercept | | 1 | 4.5097 | 0.0553 | 6645.01 | <.0001 |
| Has radio | Yes | 1 | 0.0576 | 0.0031 | 351.09 | <.0001 |
| Has radio | No | 0 | 0.0000 | 0.0000 | . | . |
| Has a TV set | Yes | 1 | 0.0154 | 0.0059 | 6.78 | 0.0092 |
| Has a TV set | No | 0 | 0.0000 | 0.0000 | . | . |
| Has  a washing machine | Yes | 1 | 0.1986 | 0.0024 | 7066.06 | <.0001 |
| Has  a washing machine | No | 0 | 0.0000 | 0.0000 | . | . |
| Has a fridge | Yes | 1 | 0.2323 | 0.0046 | 2577.31 | <.0001 |
| Has a fridge | No | 0 | 0.0000 | 0.0000 | . | . |
| Has a freezer | Yes | 1 | 0.1694 | 0.0028 | 3580.91 | <.0001 |

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| **Has a freezer** | No | 0 | 0.0000 | 0.0000 | . | . |
| **Has Access to sewerage** | Yes | 1 | 0.0412 | 0.0021 | 376.78 | <.0001 |
| **Has Access to sewerage** | No | 0 | 0.0000 | 0.0000 | . | . |
| **Access to waste collection** | Yes | 1 | 0.0464 | 0.0039 | 141.21 | <.0001 |
| **Access to waste collection** | No | 0 | 0.0000 | 0.0000 | . | . |
| **PARTICIPACAO** | | 1 | 0.1000 | 0.0041 | 588.07 | <.0001 |
| **Has a computer** | Ignored | 1 | 1.0302 | 0.0249 | 1709.56 | <.0001 |
| **Has a computer** | Has comp. w/o Internet | 1 | 0.1267 | 0.0038 | 1131.23 | <.0001 |
| **Has a computer** | Has comp. w/ Internet | 1 | 0.2507 | 0.0030 | 7142.94 | <.0001 |
| **Has a computer** | No computer | 0 | 0.0000 | 0.0000 | . | . |
| **Has a telephone** | Ignored | 0 | 0.0000 | 0.0000 | . | . |
| **Has a telephone** | Has cellphone | 1 | 0.1408 | 0.0033 | 1819.86 | <.0001 |
| **Has a telephone** | Has landline | 1 | 0.1737 | 0.0059 | 865.27 | <.0001 |
| **Has a telephone** | Has landline & cellphone | 1 | 0.2870 | 0.0039 | 5462.85 | <.0001 |
| **Has a telephone** | No telephone | 0 | 0.0000 | 0.0000 | . | . |
| **Number of bedrooms** | | 1 | 0.0371 | 0.0039 | 90.71 | <.0001 |
| **Number of rooms** | | 1 | 0.0107 | 0.0014 | 57.02 | <.0001 |
| **Number of bedrooms** | | 1 | 0.0158 | 0.0038 | 17.04 | <.0001 |
| **Number of bathroom – per capita** | | 1 | 0.2919 | 0.0116 | 637.33 | <.0001 |
| **Number of rooms – per capita** | | 1 | 0.0754 | 0.0037 | 418.37 | <.0001 |
| **Number of bedrooms – per capita** | | 1 | 0.1956 | 0.0141 | 193.43 | <.0001 |
| **Number of household members** | | 1 | -0.0180 | 0.0014 | 160.41 | <.0001 |
| **Household head - contribution to social security** | Cont. priv. SS | 1 | -0.1554 | 0.0163 | 91.34 | <.0001 |
| **Household head - contribution to social security** | Cont. pub. SS | 1 | -0.2425 | 0.0069 | 1244.14 | <.0001 |
| **Household head - contribution to social security** | Unemployed | 1 | -0.2278 | 0.0494 | 21.23 | <.0001 |
| **Household head - contribution to social security** | Ignored | 1 | -0.3621 | 0.0072 | 2501.06 | <.0001 |
| **Household head - contribution to social security** | Inactive | 1 | -0.4097 | 0.0216 | 359.81 | <.0001 |
| **Household head - contribution to social security** | Cont. priv. & pub. SS | 0 | 0.0000 | 0.0000 | . | . |
| **Household head occupation** | Employer | 1 | 1.1863 | 0.0489 | 587.57 | <.0001 |
| **Household head occupation** | Private employee | 1 | 0.8474 | 0.0488 | 301.17 | <.0001 |
| **Household head occupation** | Civil servant | 1 | 0.9610 | 0.0489 | 385.82 | <.0001 |
| **Household head occupation** | Ignored | 1 | 0.6896 | 0.0485 | 202.44 | <.0001 |
| **Household head occupation** | Unpaid (trainee) | 1 | 0.7336 | 0.0491 | 222.85 | <.0001 |
| **Household head occupation** | Liberal professional | 1 | 0.9004 | 0.0488 | 340.29 | <.0001 |
| **Household head occupation** | Unemployed | 0 | 0.0000 | 0.0000 | . | . |
| **Household education** | | 1 | 0.0211 | 0.0003 | 5353.92 | <.0001 |
| **Child 1** | Someone from 0 to 6 goes to priv. school | 1 | -0.1013 | 0.0050 | 415.94 | <.0001 |

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| **Child 1** | Someone from 0 to 6 goes to pub. school | 1 | -0.1982 | 0.0038 | 2681.18 | <.0001 |
| **Child 1** | Someone from 0 to 6 doesn't go to school | 1 | -0.2460 | 0.0033 | 5684.73 | <.0001 |
| **Child 1** | No one from 0 to 6 | 0 | 0.0000 | 0.0000 | . | . |
| **Child 2** | Someone from 7 to 14 goes to priv. school | 1 | -0.0797 | 0.0044 | 333.96 | <.0001 |
| **Child 2** | Someone from 7 to 14 goes to pub. school | 1 | -0.2807 | 0.0029 | 9687.75 | <.0001 |
| **Child 2** | Someone from 7 to 14 doesn't go to school | 1 | -0.2637 | 0.0087 | 922.28 | <.0001 |
| **Child 2** | No one from 7 to 14 | 0 | 0.0000 | 0.0000 | . | . |
| **Child 3** | Someone from 15 to 17 goes to priv. school | 1 | -0.1135 | 0.0067 | 284.55 | <.0001 |
| **Child 3** | Someone from 15 to 17 goes to pub. school | 1 | -0.2259 | 0.0030 | 5645.02 | <.0001 |
| **Child 3** | Someone from 15 to 17 doesn't go to school | 1 | -0.1363 | 0.0053 | 661.87 | <.0001 |
| **Child 3** | No one from 15 to 17 | 0 | 0.0000 | 0.0000 | . | . |
| **Age at which the Household head started working** | 10 to 14 years | 1 | 0.0402 | 0.0139 | 8.41 | 0.0037 |
| **Age at which the Household head started working** | 15 to 17 years | 1 | 0.0241 | 0.0139 | 3.00 | 0.0832 |
| **Age at which the Household head started working** | 18 to 19 years | 1 | 0.0144 | 0.0141 | 1.04 | 0.3069 |
| **Age at which the Household head started working** | 20 to 24 years | 1 | 0.0562 | 0.0145 | 14.93 | 0.0001 |
| **Age at which the Household head started working** | 25 to 29 years | 1 | 0.0498 | 0.0172 | 8.42 | 0.0037 |
| **Age at which the Household head started working** | Up to 9 years | 1 | 0.0495 | 0.0140 | 12.41 | 0.0004 |
| **Age at which the Household head started working** | Ignored | 1 | 0.2655 | 0.0150 | 312.60 | <.0001 |
| **Age at which the Household head started working** | 30 years or more | 0 | 0.0000 | 0.0000 | . | . |
| **Unionized Household head** | Ignored | 0 | 0.0000 | 0.0000 | . | . |
| **Unionized Household head** | No | 1 | -0.0866 | 0.0028 | 972.66 | <.0001 |
| **Unionized Household head** | Yes | 0 | 0.0000 | 0.0000 | . | . |
| **House** | Rent below median | 1 | -0.0018 | 0.0039 | 0.21 | 0.6463 |
| **House** | Rent above median | 1 | 0.1991 | 0.0036 | 3111.38 | <.0001 |
| **House** | Given | 1 | -0.0568 | 0.0036 | 252.31 | <.0001 |
| **House** | Ignored | 0 | 0.0000 | 0.0000 | . | . |
| **House** | Other condition | 1 | -0.0979 | 0.0125 | 61.08 | <.0001 |
| **House** | Own house, paying for | 1 | 0.1022 | 0.0050 | 422.23 | <.0001 |
| **House** | Own house, paid for | 0 | 0.0000 | 0.0000 | . | . |
| **Type of family** | Couple with children below 14 years or 14 years and above | 1 | -0.3164 | 0.0079 | 1615.47 | <.0001 |
| **Type of family** | Couple with all children 14 years and above | 1 | -0.2097 | 0.0075 | 778.60 | <.0001 |
| **Type of family** | Couple with all children below 14 years | 1 | -0.3472 | 0.0076 | 2098.20 | <.0001 |

| Parameter | | DF | Estimate | Standard Error | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|
| Type of family | Couple without children | 1 | -0.0746 | 0.0076 | 96.94 | <.0001 |
| Type of family | Mother with children below 14 years or 14 years and above | 1 | -0.3013 | 0.0070 | 1829.98 | <.0001 |
| Type of family | Mother with all children 14 years and above | 1 | -0.1136 | 0.0048 | 560.58 | <.0001 |
| Type of family | Mother with all children below 14 years | 1 | -0.3441 | 0.0061 | 3162.74 | <.0001 |
| Type of family | Other types of family | 0 | 0.0000 | 0.0000 | . | . |
| Partner's education | 1 to 3 | 1 | -0.0315 | 0.0166 | 3.60 | 0.0577 |
| Partner's education | 12 or more | 1 | 0.2641 | 0.0167 | 250.15 | <.0001 |
| Partner's education | 4 to 7 | 1 | -0.0233 | 0.0164 | 2.02 | 0.1554 |
| Partner's education | 8 to 11 | 1 | 0.0158 | 0.0163 | 0.93 | 0.3338 |
| Partner's education | No instruction or less than 1 year | 1 | 0.0155 | 0.0167 | 0.87 | 0.3516 |
| Partner's education | No partner | 1 | -0.1699 | 0.0177 | 92.29 | <.0001 |
| Partner's education | Ignored | 0 | 0.0000 | 0.0000 | . | . |
| Partner's ocupation | Unemployed | 1 | -0.3752 | 0.0061 | 3785.56 | <.0001 |
| Partner's ocupation | Employer | 1 | 0.2551 | 0.0083 | 952.78 | <.0001 |
| Partner's ocupation | Private employee | 1 | 0.0651 | 0.0039 | 280.82 | <.0001 |
| Partner's ocupation | Civil servant | 1 | 0.1449 | 0.0052 | 763.80 | <.0001 |
| Partner's ocupation | Ignored | 1 | -0.1359 | 0.0038 | 1292.39 | <.0001 |
| Partner's ocupation | Unpaid (trainee) | 1 | -0.2132 | 0.0054 | 1563.75 | <.0001 |
| Partner's ocupation | Liberal professional | 0 | 0.0000 | 0.0000 | . | . |
| Partner's ocupation | No partner | 0 | 0.0000 | 0.0000 | . | . |
| Scale | | 1 | 0.5806 | 0.0007 | | |

**Note :** The scale parameter was estimated by maximum likelihood.

Source: CPS/FGV from microdata of PNAD/IBGE

## Appendix II: Principal Component analysis for the definition of economic classes

Principal component analysis is a methodology that is useful when you have data on a number of variables and believe that there is some redundancy in those variables – which means that some of the variables are correlated with one another, possibly because they are measuring the same dimension. Given this apparent redundancy, it is likely that, for example, different item in a questionnaire are not really measuring different constructs; more likely, they may be measuring a single construct that could reasonably be labeled, in the present case, for instance, "an optimistic view of reality as a whole".

It consists in a variable reduction procedure, and involves the development of obtained measures on a number of observed variables and into a smaller number of artificial variables - called principal components - that will account for most of the variance in the observed variables. In essence, what is accomplished by principal component analysis it the reduction of the observed variables into a smaller set of artificial variables, what is done collapsing some redundant variables into single new variables that can be used in subsequent analyses as predictor variables in a multiple regression - or in any other type of analysis.

Technically, a principal component can be defined as a linear combination of optimally-weighted observed variables. In performing a principal component analysis, it is possible to calculate a score for each subject on a given principal component. Each subject actually measured would have scores on each one of the new components, and the subject's actual scores on the original questionnaire items would be optimally weighted and then summed to compute their scores on a given component.

In reality, the number of components extracted in a principal component analysis is equal to the number of observed variables being analyzed. This means that an analysis of a questionnaire with many items would actually result in as many components as the number of items. However, in most analyses, only the first few no redundant components account for meaningful amounts of variance, so only these first few components are retained, interpreted, and used in subsequent analyses. The remaining components account for only trivial amounts of variance and generally would therefore not be retained and further analyzed.

The first component extracted in a principal component analysis accounts for a maximal amount of total variance in the observed variables. Under typical conditions, this means that the first component will be correlated with at least some of the observed variables, and may be correlated with many. The second component extracted will have two important characteristics. First, this component will account for a maximal amount of variance in the data set that was not accounted for by the first component. Again under typical conditions, this means that the second component will be correlated with some of the observed variables that did not display strong correlations with the first component. The second characteristic of the second component is that it will be uncorrelated with the first component. Literally, a computation of the correlation between components 1 and 2 would give zero. That is the general rule: the remaining components that are extracted in the analysis display the same two characteristics: each component accounts for a maximal amount of variance in the observed variables that was not accounted for by the preceding components, and is uncorrelated with all of the preceding components. A principal component analysis proceeds in this fashion, with each new component accounting for progressively smaller and smaller amounts of variance - this is why only the first few components are usually retained and interpreted. When the analysis is complete, the resulting components will display varying degrees of correlation with the observed variables, but are completely uncorrelated with one another.

The observed variables are standardized in the course of the analysis, that is, each variable is transformed so that it has a mean of zero and a variance of one. What we mean by "total variance" in the data set is simply the sum of the variances of these observed variables. Since they have been standardized to have a variance of one, each observed variable contributes one unit of variance to the "total variance" in the data set. Therefore, the total variance in a principal component analysis will always be equal to the number of observed variables being analyzed, and the components that are extracted in the analysis will partition this variance. If there are six components, for instance, the first component might account for 2.9 units of total variance; perhaps the second component will account for 2.2 units, and so on, with the analysis continuing in this way until all of the variance in the data set has been accounted for.

|  |  | Fator1 | Fator2 | Fator3 |
|---|---|---|---|---|
| RADI | Radio | 29 | 1 | 0 |
| TV | TV | 35 | 3 | 13 |
| LAVA | Washing machine | 62* | -8 | 0 |
| GEL | Fridge | 43* | -5 | 12 |
| FREE | Freezer | 43* | -2 | -15 |
| Esgoto | Sewage | 35 | -10 | 9 |
| Lixo | Garbage Collection | 40 | -7 | 23 * |
| PARTICIPACAO | Income Share of Labor Earnings | 21 | 13 | 54* |
| COMPNET | Computer with internet | 67* | -7 | -8 |
| COMP | Computer | 23 | 1 | 1 |
| NCOMP | No Computer | -71* | 5 | 7 |
| FIXOCEL | Landline plus Cell Phone | 68* | -3 | -6 |
| FIXO | Landline Phone | -2 | -5 | -4 |
| CEL | Mobile phone | -11 | 2 | 24 |
| NTEL | No Phone | -57* | 5 | -13 |
| NBAN | Number of Bathroons | 72* | -11 | -16 |
| NCOMODOS | Number of Rooms | 64* | 2 | -34 |
| NDORMITORIO | Number of Bedrooms | 33 | 55* | -33 |
| NBAN_PC | Per Capita Number of Bathroons | 47* | -60* | -21 |
| NCOMODOS_PC | Per Capita Number of Rooms | 33 | -69* | -30 |
| NDORMITORIO_PC | Per Capita Number of Bedrooms | 32 | -46* | -41* |
| MORADORES | Household Size (# Persons) | -6 | 83* | 0 |
| EDUCACHEFE | Head of Household Schooling Level | 68* | -19 | 29 |
| CHCONTRIB_PUBPRIV | Contributes to Private Pension Fund and to Social Security | 27 | -4 | 0 |
| CHCONTRIB_PUB | Contributes to Social Security | 31 | -4 | 47* |
| CHCONTRIB_PRIV | Contributes to Private Pension Fund | 10 | -4 | -6 |
| CHCONTRIB_DESEMP | Contribution Unemployed | -6 | 10 | 4 |
| CHCONTRIB INATIVO | Contribution Inactive | -11 | -9 | -44** |
| CHPOS DESEMP | Unemployed | -6 | 10 | 4 |
| CHPOS PRIV | Private Employed | -4 | -2 | 52* |
| CHPOS LIB | Self-Employed | -12 | 8 | -17 |
| CHPOS EMP | Employer | 27 | -2 | -4 |
| CHPOS PUB | Public Servant | 28 | -1 | 10 |
| CHPOS NREM | Unpaid Worker | -10 | 0 | -18 |
| NFREQ_0_6 | Not Attending School 0 to 6 years | -24 | 23 | 37 |
| FREQpub_0_6 | Attending Public School 0 to 6 years | -10 | 12 | 17 |
| FREQpriv_0_6 | Attending Private School 0 to 6 years | 19 | -1 | 17 |
| N_0_6 | No Children from 0 to 6 years | 20 | -27 | -50* |
| NFREQ_7_14 | Not Attending School 7 to 14 years | -11 | 13 | -2 |

| | | Fator1 | Fator2 | Fator3 |
|---|---|---|---|---|
| FREQpub_7_14 | Attending Public School 7 to 14 years | -20 | 58* | 13 |
| FREQpriv_7_14 | Attending Private School 7 to 14 years | 37 | 6 | 7 |
| N_7_14 | No Children from 7 to 14 years | 4 | -63* | -16 |
| NFREQ_15_17 | Not Attending School 15 to 17 years | -12 | 23 | -8 |
| FREQpub_15_17 | Attending Public School 15 to 17 years | 1 | 49* | -21 |
| FREQpriv_15_17 | Attending Private School 15 to 17 years | 31 | 8 | -10 |
| N_15_17 | No Children from 15 to 17 years | -6 | -57* | 26 |
| CHTRAB_9ANO | Started Working 9 Years of Age | -16 | 6 | -12 |
| CHTRAB_1014ANO | Started Working 10 to 14 Years of Age | -8 | 8 | 15 |
| CHTRAB_1517ANO | Started Working 15 to 17 Years of Age | 12 | -2 | 24 |
| CHTRAB_1819ANO | Started Working 18 to 19 Years of Age | 19 | -4 | 14 |
| CHTRAB_2024ANO | Started Working 20 to 24 Years of Age | 17 | -5 | 5 |
| CHTRAB_2529ANO | Started Working 25 to 29 Years of Age | 8 | -2 | 0 |
| CHTRAB_30ANO | Started Working After 30 Years of Age | 1 | 1 | -2 |
| chSINDICATO | Belong to Trade Union | 16 | -1 | 5 |
| PROPRIOPG | Own Housing Financed | 7 | 15 | -41* |
| PROPRIO | Own Housing | 13 | -3 | 13 |
| ALUGUEL_AB | Rented Housing + Expensive | -17 | -8 | 24 |
| ALUGUEL_AC | Rented Housing - Expensive | 17 | -9 | 18 |
| CEDIDO | Ceded Housing | -18 | -6 | 16 |
| DOM OUT | Other | -4 | 2 | 2 |
| CASALFILHO | Couple No Kids | -4 | -37 | -7 |
| CASALFILHO AB14 | Couple Kids Above 14 | -8 | -5 | 63* |
| CASALFILHO AC14 | Couple Kids Below 14 | 23 | 3 | -31 |
| CASALFILHO_14 | Couple Kids Above and Below 14 | 6 | 53* | -6 |
| MAE_AB14 | Mother With Kids Above 14 | -9 | 9 | 4 |
| MAE_AC14 | Mother With Kids Below 14 | -2 | -6 | -25 * |
| MAE_14 | Mother With Kids Above and Below 14 | -5 | 18 | -5 |
| MAE IG | Mother Ignored | 0 | 0 | -1 |
| FAM OUT | Other | -10 | -38 | -21 |
| EDUCONJ SEM | No Spouse | -25 | 13 | -21 |
| EDUCONJ_1_3 | Spouse 1 to 3 Years of Schooling | -18 | 11 | -9 |
| EDUCONJ_4_7 | Spouse 4 to 7 Years of Schooling | -11 | 11 | 13 |

|  |  | Fator1 | Fator2 | Fator3 |  |
|---|---|---|---|---|---|
| EDUCONJ_8_11 | Spouse 8 to 11 Years of Schooling | 27 | -4 | 36 |  |
| EDUCONJ_12 | Spouse Above 11 Years of Schooling | 48* | -7 | 2 |  |
| CONJPOS DESEMP | Spouse Unemployed | -2 | 1 | 18 |  |
| CONJPOS_PRIV | Spouse Private Spouse Employed | 7 | 4 | 31 |  |
| CONJPOS LIB | Spouse Self-Employed | 6 | 8 | 4 |  |
| CONJPOS EMP | Spouse Employer | 21 | 0 | -1 |  |
| CONJPOS PUB | Spouse Public Servant | 25 | 3 | 3 |  |
| CONJPOS NREM | Spouse Unpaid Worker | -20 | 7 | -22 | * |
| CONJPOS_NCONJ | No Spouse | -14 | -20 | -29 | * |

| Variance explained by each factor | | | |
|---|---|---|---|
| Fator1 | Fator2 | Fator3 | Factor4 |
| 6.7790241 | 4.4784225 | 4.0032932 | 2.9953943 |

# Center For Social Policies (CPS/FGV):

## Information about Brazil's Social Reality on your Computer

The Center for Social Policies carries out research on the most pressing themes of the Brazilian socioeconomic reality, making the results available to the wide public with the following aims:

- Innovating the way of thinking about social issues and improving the design and implementation of public policies.

- Developing new methods of research and dissemination of knowledge.

- Providing specialized evaluation services in our areas of concern.

- Enhancing the access of the population in general to knowledge, strengthening the public debate of ideas.

CPS's researches concern various themes represented comprised within the areas below:
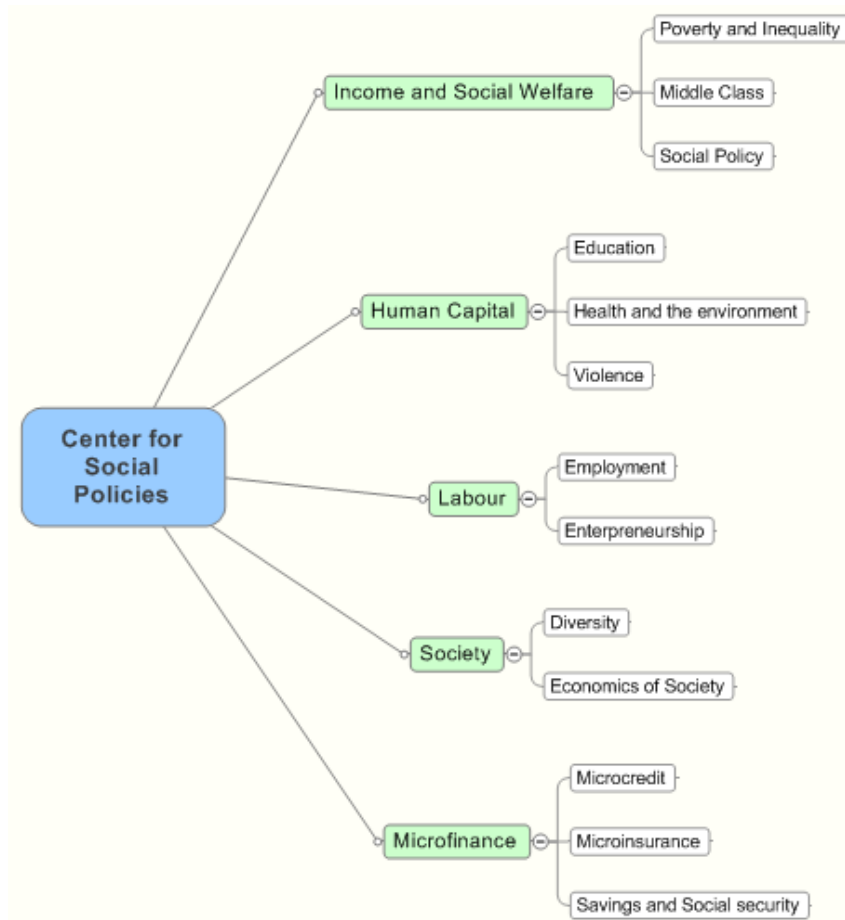
Quite often, these themes are strictly related with each other as, for instance, sanitation and health or microcredit and poverty. In its activities, CPS uses the main mechanisms of research and analysis to study such related themes through:

- Qualitative and quantitative impact evaluation

- Design and monitoring of social targets

- Design of incentive systems

- Studies about the perceptions on policies and participation.

The Center for Social Policies (CPS/FGV) seeks to contribute to the equitable development in Brazil by bridging applied research, public debate and the implementation of public policies.

The various objectives of the Center for Social Policies may be grouped into three large target areas, namely:

i) The Center for Social Research carries out and publishes research on theoretical and empirical issues aiming at the academic audience.

ii) The Center for Social Projects evaluates the design and operation of public policies implemented by the government or by civil society. It also ensures the financial sustainability of the remaining activities of the centre by providing services to governments, companies and NGOs with a special emphasis on policy evaluation.

iii) Last, but not least, the Communication for Society innovates in its way of launching researches looking for the widest possible institutional impacts and the ownership of knowledge by society itself based on the results of our research.

**About CPS: Brief History**

Since 2000, the Center for Social Policies at the Fundação Getulio Vargas analyzes the socioeconomic reality in Brazil. Using quantitative and qualitative methods, CPS has established a tradition by approaching various themes, from marriage and religion to the income distribution in Brazil. Nevertheless, our work has stressed

and specialized in its concern with equity: how to measure it, with which criteria, how to reach it.

One of its most relevant proposal refers to the adoption of Social Targets – it has oriented CPS's work. In this sense, since the beginning of its activities, the Center stands for the social targets idea – parallel to the macroeconomic targets of the Federal Government – that is, placing social performance at the top of the national priorities. Current income levels and social expenditure in Brazil allow for a sustainable improvement in the living conditions of the population. A more equitable distribution of resources depends, in its turn, on a well-focused and aggressive approach to social needs. The role of social targets hence is to justify and motivate public action.

The social target agenda had an important benchmark in 2000 when CPS organized the seminar entitled **NIP - Network on Inequality of LACEA/WB/IDB** – attended by international experts like James Heckman from the University of Chicago and François Bourguignon from Delta, among others. Violence, child labor and poverty reduction programs were discussed. During this event, James Heckman was awarded the Nobel Prize in Economics. During this meeting, the CPS presented the work "Social Policy Challenges" that discusses the economic rationality for the development of a social target system as the means of increasing the efficiency in the transfer of social resources from the Federal Government to the municipalities – since then, such issue has been improved on the CPS agenda.

CPS organized two seminars of great repercussion in 2005 and 2009 on Education: "Equity and Efficiency" and "Education in the Early childhood" (2005) – when Heckman attended – and "Education Targets" (2009). The Ministry of Education Fernando Haddad attended all the seminars, discussing the best ways to improve the monitoring of educational targets, among other themes. Organizing such events helps the CPS to fulfill its mission and reach its objectives; and it certainly synthesizes some of the main aspects of the CPS: seminars gather various stakeholders and enhance the debate of ideas. And, by ensuring the presence of public managers, it also seeks to increase the effectiveness of the discussion and its influence in public policy.

Since its foundation, CPS has been committed to the impartial and first-hand disclosure of the content of its research based on IBGE (Brazilian Statistics Institute)

household surveys – a commitment that stands above any other political or partisan interest.

CPS is completely autonomous in its research agenda. In fact, impartiality and credibility have been its trademark, combined to the constant concern with the social impacts of various policies – all of which have ensured its dialogue with wide and diverse audiences.

This dialogue has created institutional impacts to FGV to the extent that CPS takes FGV to many fora. Marcelo Neri gave a lecture at the Palácio do Planalto about "The recent reduction in inequality in Brazil" in 2006; and other presentations also at the Palacio do Planalto in 2008, where 500 copies of CPS researches and another 500 copies of CPS books were distributed to Ministers, business people and civil society leaders.

The finger on the pulse of society has been CPS trademark. The most recent example was the research on the new Brazilian middle class that identified the growth of Class C and the change in income strata in Brazil between 2004 and 2008. The research had a strong national and global impact, including an exclusive piece on The Economist.

By approaching themes such as education, poverty and inequality, economics and society, microfinance and labor, CPS has had the opportunity to publish its work and disclose relevant data for society through: strategic partnerships (for instance with the International Poverty Center, UNDP); network actions (participating in the COmpromisso Todos pela Education – All for Education); consultancy on project evaluation (Crediamigo, award-winning microcredit program; evaluation of international cooperation for the Inter-American Foundation). Such strategy, apart from ensuring the plurality of its work, has also helped to keep the Center's sustainability.

In order to reach its objective of increasing the public debate, the CPS has also devoted growing efforts to improve the disclosure of its material to the wide public, be it through the internet as the accessible tool to launch its researches, be it through the international and national media. A thorough job is carried out with the media, as journalists demand the unraveling of complex technical issues – hence, the coverage becomes friendlier to the wide public. In fact, some studies in particular have gained excellent results in the international scenario, such as Inequality, Stability and Income

Policies: Lula's Real; Economics of Religions – both launched in the second semester of 2007: more than 100 international media sources, including The Economist, Financial Times, Time Magazine, Le Figaro, El Clarin, Newsweek, among others.

Keeping its commitment to identify the pressing themes in society and stressing the need for equity, CPS put forward the issue of access to markets as an exit door out of poverty; opening up new fronts of research such as: microinsurance, microcredit and microfinance in general. It edited the book: Microcredit, Northeast Mystery and the Brazilian Grameen (2008), followed by a series of works on the theme, whose current importance is paramount: given not only the positive impacts of Crediamigo itself and the potential of the Brazilian market, but also given the implications of the financial crisis and the way it questioned the parameters of the financial sector.

In almost ten years, CPS gave a qualitative leap, carrying out academic research and studies of society's interest, whose themes became CPS's line of investigation, upon which it build its experience and expertise, enabling the development of new products and ways of dissemination, whose methodologies may be refined and used in future projects.

The English version of the research was released on a discussion between Marcelo Neri and Mac Margolis, journalist from Newsweek. The discussion was broadcasted live through the internet and the viewers of different countries sent questions about the phenomenon of the new middle class in Brazil. The discussion was recorded and is also available on the webpage of the research.



# Questions from the international debate:

### The Importance of the Middle Class
1. Why is it important to measure the size of the middle class? What is so special about middle classes in general and in Brazil?
2. Why is FGV research entitled "The New Middle Class (and not just middle class) in Brazil: The Bright Side of the Poor"?
3. How did this new middle class get there?

### The Size of the Brazilian Middle Class
4. What is the current size of the Middle class in Brazil today? Isn´t the income brackets attributed to this new middle class too low to be considered as such? Why not using standard minimum wage brackets usually released by IBGE? What is the difference between your survey and those generated by private firms (names omitted)?
5. Why use income and not consumption goods to measure economic classes in the country? What is the difference between FGV criteria and "Critério Brasil"?
6. How about subjective measures? What are their role in capturing the middle class?
7. What are the main needs and desires of the new middle class in Brazil?

### Education
8. How about the importance of investing in education? What is likely to be the impact of Brazil's rising middle class / reduction in poverty on elementary education and secondary school education programs—among 1) private schools and 2) public schools? I live in Salvador, Bahia and I know people at all levels

of society here.  Although this is anecdotal on my part, I am observing that people I know who live in residential zones considered "favelas" are increasingly enrolling their children in private schools as their incomes rise. It has long been reported that a significant number of school age children across Brazil don't complete their educations at public schools because they need to work to support their families.  What impact are rising incomes and programs such as Bolas Familia and Bolsa Escola having in terms of increased demand for / participation in public education programs?

9. Is there "a apagão de mão de obra no Brasil". What is the role played by Professional education vis a vis traditional formal education?

**Sustainability**
10. Is inequality reduction and the emergence of this new middle class a sustainable process in Brazil?
11. What is the importance of credit to explain the rise of this new middle class?
12. if you take fiscal transfers out of Hh income, how many people will go back to poverty, out of the middle class. You to see what is market driven vs. redistributive policies.
13. it would interesting to desegregating many reasons for the increase of this "new middle class" (poverty alleviation policies, access to credit, formal employment, sustainability of macroeconomic stability, etc.) in order to identify the role of each in this process. By doing so, I believe you could observe how many people would be out of the middle class if, for instance, the new administration decides to dry out cash transfer mechanisms (something that I believe is very unlikely if not impossible). Carlos Pereira
14. In sum : What do you believe is the single most important factor in explaining the growth of the middle-class? Should we be crediting Lula and FHC for achieving this through redistributive policies? Or is it simply a case of the Brazilian economy taking off and everyone feeling the benefit? Or something else?

**Income Distribution**
15. The new middle class is expanding, but the upper classes (AB) also. So how is it possible that the inequalities of revenue are diminishing?
16. Socially and economically, Brazil was once famously characterized as "Belindia" - a mix of Belgium and India. What country or countries provide a better reference point for where Brazil is today, in terms of having a bigger middle-class?
17. How big is the difference between GDP and household per capita income growth rates?
18. What are the main driving forces behind the emergence of the new middle class in the country? More growth or less inequality?
19. What are the main factors behind  mean income growth and behind the reduction in inequality in Brazil?
20. The revenue of the Black are expanding faster than the ones of the White. Why ? Are there targetted policies for them?  Who is (which groups are) benefiting more from income growth in Brazil during the last 10 years?

**Brazil versus other Brics**
21. Brazil is no Asian Tiger, How Brazilian trends compare to other Brics countries?
22. What is the relationship between growth patterns between Brazil and China, for example?

**Other Comparisons**
23. How Brazil today compares with other countries : 1) Other Latin American Countries; 2) South Africa; 3) US and UK;
24. Professor Paul Krugman in his most recent book talks about the emergence of the US middle class in the post war period, how does it compare with the current Brazilian case?

**The Role of Previous Social Policies**
25. Bolsa Familia or Minimum Wage what explains more the fall of Brazilian inequality since the begin of the last decade?
26. Is the expansion of Minimum Wage desirable? How about real gains to the Bolsa Familia?

**Impact of the Crisis**
27. How did the crisis hit Brazil? Was it a Tsunami or a ripple?
28. Who lost the most in Brazil with the 2008 crisis?

**After the Crisis (A.C.)**
29. What is the current social situation in Brazil?
30. How much elections influence the current situation of Brazil? Why Lula is still so popular as the recent opinion polls show?

**Future Prospects**
31. What are the prospects of Brazilian income distribution and the new middle class with respect to the future? Which classes are more likely to grow in the future? Is the end of poverty likely to be achieved in Brazil in the near future?

**The Next Generation of Social Policies in Brazil**
32. What are the main social challenges for the next president of Brazil?
33. What are the specific policies to be implemented?
34. What were the main pitfalls of social policies in Lula administration? Which  are the strong points. (Compare President Lula and former President Fernando Henrique Cardoso main achievements and difficulties in both economic and social terms?).
35. Qual a sua avaliação do governo Lula no combate à pobreza e à desigualdade? A priorização da estabilidade da economia - principalmente no controle da inflação - foi um decisão acertada? - A impressão que sem tem é que o governo Lula avançou pouco nas áreas de educação e saúde. Qual a sua opinião? What's the reason for Brazil's economic miracle? (how big role in it plays president Lula). and the second one is about Ms. Dilma Rousseff - do you think she'll continue Lula's social reforms
36. Is there something we may call a Brazilian economic (or social) model?

**CPS and the Brazilian Social Debate**

The study of classic social indicators such as Poverty, Inequality and Social Welfare is perhaps the area of which CPS research is mostly widely known. The challenge here is to process large quantities of microdata from household surveys and administrative records in order to diagnose the evolution and determinants of  well-being of the population. The group of researchers working in CPs had asucess to show first hand, that is before any other research institution, the main changes in Brazilian poverty and inequality series during the last 18 years ranging from identifying the social effects of the Real plan passing the effect of the external crisis in the second half of the 1990s  and on the first year of Lula administration to the fall of poverty observed every year since then. The graph below synthesizes some of CPS findings.

http://www.fgv.br/cps/Pesquisas/miseria_queda_grafico_clicavel/FLASH/index_eng.htm