

“Evolution of Social Indicators based on Income”

Income Inequality on the Decade in Brazil

Coordination

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[XXXX] pages

1. Brazil 2. Inequality 3. Poverty 4. Social Mobility I. Neri, M.C

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Content

Introduction

Reaping the End of Poverty

The Mirror of Inequality

The country of the past

Integrating Impacts on Income Distribution

Difference in Differences Analysis of Income

Conclusions

Bibliography

Attachments

I: Description of Databases

II: Methodology of Labor Decomposition

III: Econometric Techniques Used

IV: Methodology of Difference in Differences

V: Equation of income from all sources

VI: Equation of labor income

Center for Social Policies:

Information about the Brazilian social reality within the reach of the mouse

Introduction

Monitoring the Brazilian inequality until the beginning of the last decade was somewhat monotonous; it was as if she were a constant of nature. After 2001, inequality measured by Gini index, for example, falls between all successive PNAD until 2009. What happened since then? After the decade in the Gregorian sense of the word, what can we say about the inequality and poverty in the late 00s? Did we reach the minimum of the historical series initiated in 1960? Does the real income of people grows at the rate higher or lower than the GDP in 2010? And in 2011, what was the impact of rising inflation? In recent months, inequality and poverty have returned to the rhythm of falling before the international crisis? What can we expect?

Entering in the details of inequality - from the analysis of social indicators based on income between particular groups in society as levels of schooling, gender, race, age, access to goods and assets, locations and types of housing, for example - Who benefited more from the fruits of growth?

Why these changes? Falling unemployment, rising wages or income not arising from work? These questions matter not only to determine the causes of changes, but also to assess the degree of sustainability between them. In this sense, which is the role played by education and by changes in these demographic changes? Or, how these observed income changes are reflected between perceptions of satisfaction among Brazilians vis a vis other countries?

The present moment inspires many questions and stares on the evolution of income inequality in Brazil in different time horizons. In the transition between the years 2010 and 2011, the Gregorian decade of the year 00s is over. This latest turn of the hourglass also determined the end of Era Lula, with the end of his second presidential term. While the year 2010 has not yet been fleshed out from the perspective of the various dimensions of inequality that only household surveys allow to capture, as well as we don't know what is happening in 2011 in the conjectural analysis per month, but that marks the beginning of new presidential year term and decade.

These simultaneous looks on the inequality trends over the long, medium, short and very short deadlines require the use of complementary bases. The crop of 2010 Demographic Census that IBGE give to us, allows to capture the evolution of a statistics series with the characteristics about population, some dating from the 1960 Census and others from the 1872 survey. However, whether for reasons of unavailability of current Census microdata and even their secondary data income, but especially by the methodological difficulties involved in comparisons with different income surveys over the time.

As argued here, these difficulties in comparing census are not cyclical and they will never be properly addressed, the best we have to do now and later is to use other databases already available such as the PNAD and PME.

The PNAD is the true center of the analysis of income in Brazil for its annual frequency, multiplicity of questions and above all by the constancy of the income questionnaire since 1992. However, there wasn't PNAD in a key years like 2010 and 2000, according to the call of the mammoth ibgeana structure in the implementing of Census, and nor in 1994. It would be crucial to analyze the beginning of the presidency of Fernando Henrique Cardoso.

However, the PME despite its geographic restriction and concepts of income, it gives us the flexibility to Seal these gaps in time series data. Our proposal is to complement this series not in levels, but in their respective variations. At the same time, the PME allows to enter in the first few months of 2011, that represent the beginning of the decade, the mandate of government (the president Dilma) and the year. Due to the existence of marked influence in the political cycles in Brazilian income series and in 2010, particularly, and the change of the presidency style with by launching a program to eradicate extreme poverty, 2011 seems to fit in the adage “new year, new life”

The actual research assesses, using microdata from diverse household survey, the evolution of income distribution *lato senso*, including inequality and average income as well as its spinoff more central to the debate that are the measures of poverty. Besides looking on these measures that summarize levels and lateral distance between people, ie

the vertical inequality - which makes up the entire population – we look at the income level and the distance between various segments of Brazilian society. The various questions relating to what might be called horizontal inequality is: for whom the income had a bigger increase, men or women? Illiterate or university? Black, brown or white? Which group had more gains? Where income has grown more, in the "south Wonder" or in the northeast? In the countryside or in larger cities and in their slums, or in the suburbs? If we control for all these characteristics at the same time, which one stands out in advance of income?

Or, what explains the change in mean and inequality of income in these segments, income arising from the state or income from work? Which is the role of classical components of the labor market, as unemployment and participation rates, working hours and so-called demographic bonus? How does it can be compare with what we call bonus educational to explain the changes in income levels and changes in inequality between groups.

In general, the research proposes a kind of Lego methodology- the toy to assemble - which integrates the various pieces in various time horizons relating to Brazilian income distribution. Our strategy is to use the pieces coming from different databases, making explicit the role of different databases and associated elements. In the text, we explore a series of elements that we consider most interesting. For example, we use the metaphor of decades to compose a long term vision for the series of inequalities: this part shows that we just reached the lowest level of inequality in the series. We use a combination of PNAD and PME to clarify the evolution of poverty between periods of government with an eye on the goal of eradicating extreme poverty chosen as a priority by the new president elected. These databases allow us to assess the evolution of relative income between segments of Brazilian society opened by gender, age, residence etc. At following, we isolate the role of each of these individual characteristics through multivariate regressions that capture the evolution of differences between people. In search of a better explanation of the reasons for the changes in inequality between groups, we detail the determinants of this evolution through classical components of the labor market. Interactive devices to query databases will be available at the site of research, where it's possible to view yeh numbers of income, poverty and inequality in society segments piece by piece and reassemble the puzzle of your interest.

The research website

The survey site www.fgv.br/cps/dd provides interactive databases that allow to decompose and to analyse levels and changes in social indicators based on income from their own perspective. It includes a wide range of information about the income flows and associated indicators, as well as the potential for consumption and capacity to generate income, which are the focus of this research stage

MUDAR IMG SITE



The image shows a screenshot of the FGV CPS website. On the left is a sidebar menu with the following items:

- Logo: FGV cps Centro de Políticas Sociais
- Textos principais
- Panoramas
 - [Panorama de Decomposição de Renda - Nacional](#)
 - [Panorama de Decomposição de Renda - Metrôpoles](#)
- Simuladores
 - [Simulador de Renda](#)
- Impactos recentes na mídia internacional sobre o tema:
 - [Marcelo Neri em entrevista à CNN](#)
 - [Reportagem da rede chinesa CCTV](#)
 - [Classe média emergente brasileira - CNBC](#)

The main content area features a poster titled "Desigualdade de Renda na Década". The poster depicts an hourglass where the top bulb is filled with a grayscale image of a city skyline, and the bottom bulb contains a color image of two children. The hourglass sits on a large, textured coin. The FGV logo is visible at the bottom of the poster.

Harvesting the End of Poverty

Poverty fell by 16% last year and 67.3% since Real. The last third of the journey is ahead of us.

Brazilian social accomplishments in the last 17 years had historical importance. The country went through successive and cumulative transformations, and today we are bigger and better than in the past. The Brazil of 2010 does not fit into 1994. This period of development or, as the French would say, coming out of the envelope, corresponds to the end of Itamar Franco's government and the Fernando Henrique Cardoso and Luis Inácio Lula da Silva governments (two terms each).

Measuring the incurred social changes as a whole or on an individual government basis is a difficult task, because the Brazilian National Household Survey (abbreviated PNAD in Portuguese) did not collect data for 1994 and 2010. The end of 1994 marks the beginning of the Cardoso Era and 2010 signs the end of the Lula Era.

The PNAD did not collect data in 1994 because of fiscal restraints. In 2010, the PNAD did not collect data because IBGE, the Brazilian Institute of Statistics, was completely engaged in the herculean task represented by the census. The census is a different type of survey, much similar to a pineapple: very tasty, but full of methodological thorns, — and, additionally, is only harvested at the end of each decade.

We fill in this gap in poverty series based on income with microdata from the Pesquisa Mensal do Emprego [Monthly Employment Survey, abbreviated PME/IBGE in Portuguese]. In the social debate conducted during the last 20 years, all poverty inflections were initially captured by PME (see www.fgv.br/cps/debate).

PME's questionnaire and geographical coverage are more restricted, so inferences comparable to PNAD's are not possible: a classic case of mixing apples and oranges. But, because PME is a monthly survey, it allows us to fill in the gaps in the PNAD series, by comparing oranges with oranges.

The usual interpolations between adjacent and missing years are not satisfying in this case, since 1994 and 2010 are inflection points in social trends. To those eager to drink their lemonade, PME teaches us that the from glass to lips, the way may be longer and more complicated than it seems to be. Let us analyze the issue:

The line connecting the 1993 hyperinflation to the first PNAD collection after the introduction of the real, in 1995, is not straight, but bell-shaped. The comparison disregards seasonal factors affecting the situation between the PNAD September data collections and, according to PME, poverty increased 6.6% from 1993 to 1994 and 16.9% from 1994 to 1995. If we incorporate the instant reduction effect the implementation of the Real imposed by the "inflation tax", which particularly affected the poor, the last number increases to 22%.

The greatest poverty decrease between 1993 and 1995, 13.9%, happened during Fernando Henrique Cardoso's government. This was followed by a period of international crises, during which poverty, as measured by PNAD, fell by 7% until the end of the Cardoso Era, totaling a 20% decrease. If we calculate from the time the Real was implemented until 2002, there was a 31.9% decrease, making what we may call the Cardoso Era.

For Lula's government, we still have to complete the series after September 2009, date of the last PNAD. Poverty fell by 11.82% from September 2009 to September 2010. From December 2009 to December 2010, poverty fell by 16.3%, 8.7% of which in the four last months. According to PME results, poverty decreased 50.64% from December 2002 to December 2009. Combining PME and PNAD results, poverty decreased 51.9% during the Lula Era.

This point should be stressed, since UN's first millennium goal is to reduce poverty by 50% in 25 years (from 1990 to 2015). In other words, according to UN's measurements, Brazil accomplished 25 years in 8. These results include the poverty increase during the recession in 2003, when the seed for more promising results was being sown.

Looking at the visions from recent Brazilian presidential elections candidates. José Serra may discuss, now, who planted the tree and who harvested the fruit, and that it is

possible to plant more and to harvest more. Marina Silva will look at the whole forest and say poverty decreased by 67.3% since the Real. The new president, in turn, knows, as her duty is, that the low hanging fruits already have been harvested. The suggestion is to exceed UN's target in a shorter time, combining the time horizon from the beginning of the 1990's until 2014 with the ambitious goal of eradicating poverty, knowing the most difficult third was left for end of the journey.

Movements of Poverty in FHC and Lula Eras

- ✓ **Poverty** measured by PNAD/PME combination falls:
- ✓ **67,3% since Real until December 2010 – lacks the third most difficult for the end of the road.**
- ✓ **31,9% in the FHC Era incorporating Real and the inflationary tax reduction,**
- ✓ **16,3% between December 2009 and December 2010. .**
- ✓ **50,64% in the Lula Era between December 2002 and December 2010..**
- ✓ This point needs to be emphasized, because the first **Millennium Development Goal** is to reduce poverty about 50% in 25 years (from 1990 to 2015).
- ✓ Brazil did **25 years in 8!**

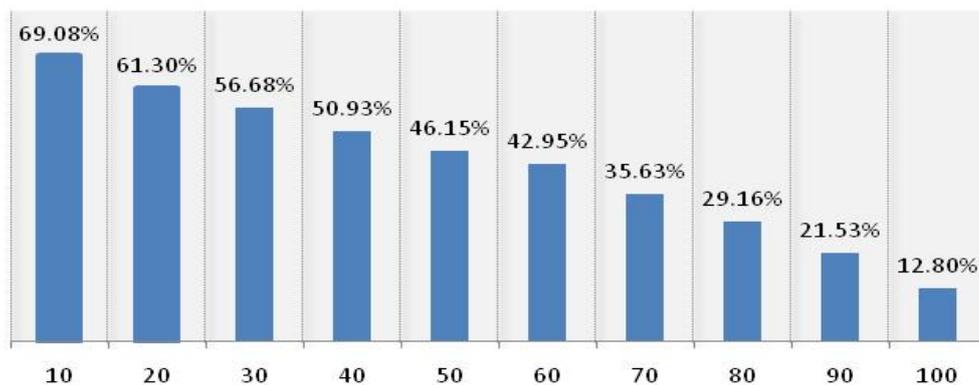
The Mirror of Inequality

Income of the 50% poorest people increased by 69% in the 2000's, mirroring the gains the 10% wealthiest people had in the 1960's.

In several articles I wrote here during the last 11 years, I referred to the 2000's as the decade represented by the fall in inequality. Until 2001, studying the Brazilian inequality was a little bit boring: it seemed like a constant of nature. After that, inequality measured by Gini's Index, for example, decreased in all successive editions of the Brazilian National Household Surveys (Abbreviated PNAD in Portuguese). Now that the decade is over, in the Gregorian sense, what can we say about inequality in the 2000's?

Here, we will follow the concept of per capita household income as measured by the PNAD, a benchmark in most Brazilian discussions about social welfare, poverty and inequality. If we order the population by per-capita income and divide it in 10 equal parts, between the first and the last PNAD in the last decade, the income of the 10% poorest people had a 69.08% accumulated per capita increase. Such gain decreases as we get closer to the top of the distribution, reaching 12.8% among the 10% wealthiest people as shown in the graph below

Variation of Per Capita Average Income per Income Deciles PNADs (2009/2001)



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

To better synthesize the changes observed in the whole distribution range, the analysis was restricted to the 50% poorest and 10% wealthiest people. The former are, by definition, the poorest half of the population, while the latter had, in its historical inequality peak, almost half of the Brazilian income cake. The accrued rates of real per capita income growth were 12.58% and 52.59%, respectively. That indicates that between 2001 and 2009 the slice of poorest half of the population grew 318% more than the slice of the 10% wealthiest. This is an intuitive measure of inequality evolution.

Technically, last decade started in January 2001 and ended in December 2010. Unfortunately, PNAD does not make field trips in Census years, which mark the decades' limits, like 2000 and 2010. Therefore, we will only be able to know, according to PNAD data, what happened in 8 of the 10 years that interest us.

I am aware that, because of the differences in geographical coverage and income concept, it is not possible to compare PNAD and PME directly. It is like comparing apples and oranges. We chose to complete the PNAD series with changes shown by PME.

Therefore, we'll compare PME's results for the same months of the year, because even the same species of apples present different characteristics in different months, because of the seasons. Then, these changes will be incorporated to the PNAD series, explaining that PMEs only collect data about labor income in the six main metropolitan areas. Labor income is accountable for 75% of people's income, almost uniformly along the income distribution.

In my analogy, a census is like a very rare species of pineapple, tasty and succulent, but full of thorns that represent the methodological changes suffered during each decade. That is why we prefer not to compare pineapples A and pineapples B; especially if you consider the latter have not yet been peeled or processed. The long lag between the time census data are collected and microdata series are made available indicates we will not be able to compute the changes in census inequality numbers before the end of 2012.

According to PME, income growth rates were always higher among the poor than the wealthy in the periods between December 2000 and September 2001 and September

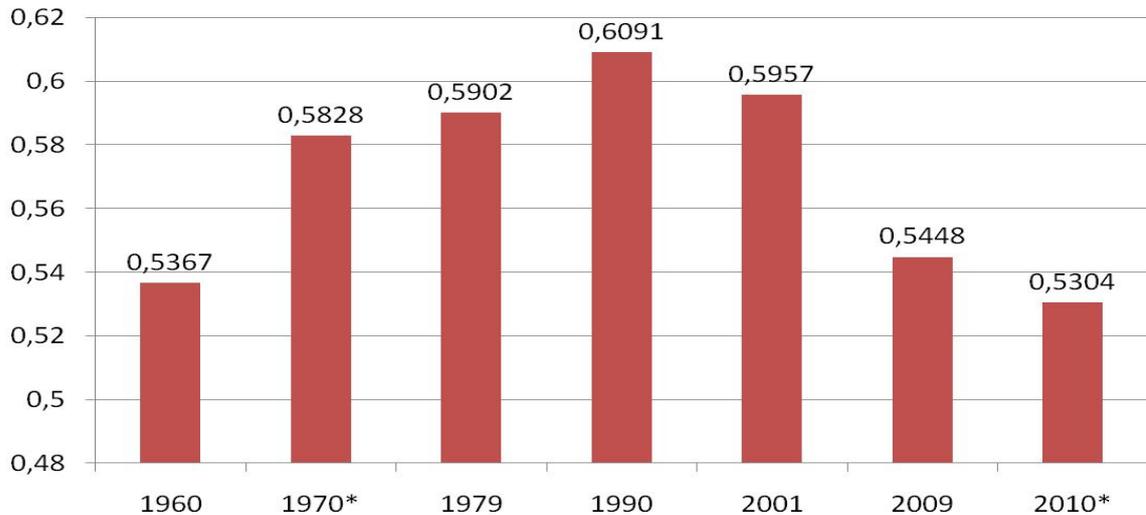
2009 and December 2010. This is an indication that inequality decreased not only between PNADs, but also in the limits of the Gregorian decade. The difference is that in the beginning of the last decade, income decreased less for the poor and, in the end, it grew more for them.

As we complete the series with PME change rates observed in the decade limits, we get to an accrued growth rate of 10.03% for the 10% wealthiest and 67.93% for the 50% poorest during the last decade. That is, the poorest half growth rate was 577% higher than the 10% wealthiest rate. The result is that the ratio between average income in both population layers, an inequality measure, falls to almost half of the initial values: from 18.12 in December 2000, to 9.76 in December 2010.

Now, given the scenario for the 2000's, it is necessary to compare it with the remaining decades. Studies on income inequality in Brazil are completing half a century now. They started in the 1960 Census, the first representative household survey to ask direct questions about income. The fantastic increase of inequality between 1960 and 1970 was followed by a long statistical monotony. The dynamics of those series have been compared to the EKG of a corpse.

The comparison that interests us is, therefore, between the decades 2000 and 1960. The problem with the 1960 Census is that it was impossible to deduce the per capita income from the individual income of each domicile. Because of such limitations, we compare **changes** of different measures. The concept Carlos Langoni used in his seminal work, in 1973, was individual income. Langoni's work is still surprisingly up-to-date both in its methodology and conclusions, if they are inverted to cover current data, as I had an opportunity of commenting in the preface to the third edition published by Editora da Fundação Getúlio Vargas in 2005. In short, there has been a 360° turn. We've just gone back to the lowest inequality level from our historical series, observed in 1960.

Long Run perspective on Inequality (Gini Coefficient)

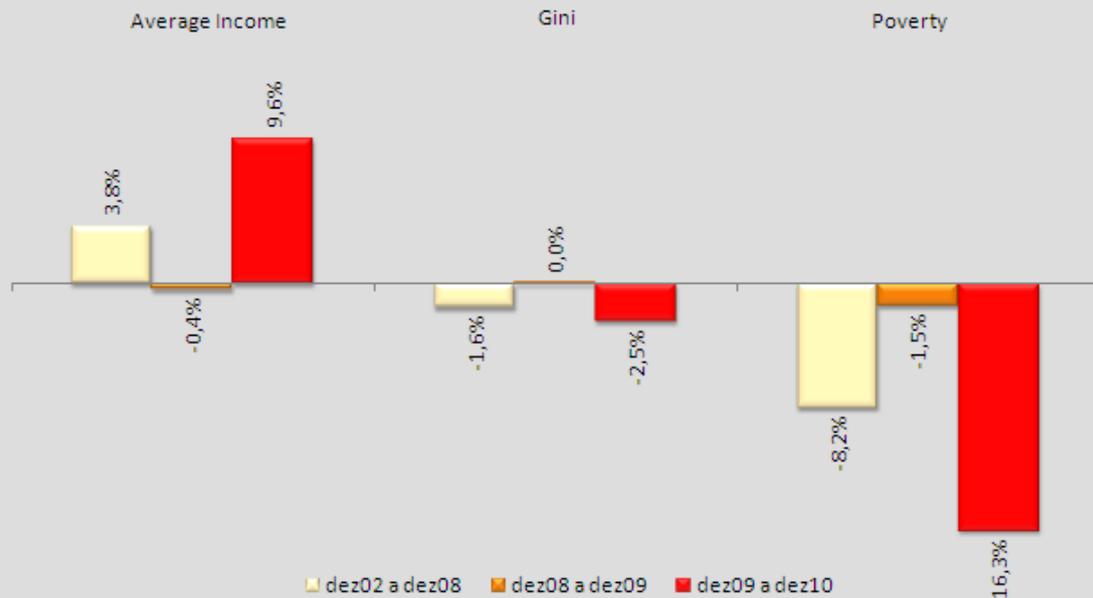


Source: CPS/FGV based on microdata from PNAD, PME and Census/IBGE and Langoni 1973

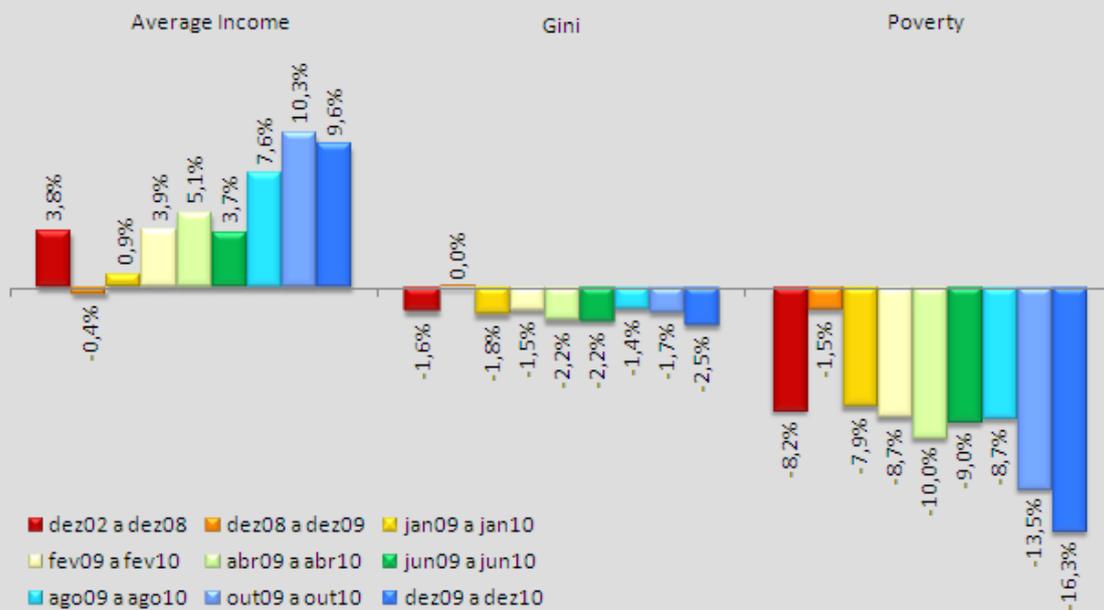
The 10% wealthiest people have their income increased by 66.87% between the 1960 and the 1970 Censuses. If we restrict the analysis to the 5% wealthiest people, the increase was even higher: 75.42%. The poorest half had a 15.26% increase in the same period. That means the income of the poorest half of the population increased 81.22% less than the income of the 10% wealthiest.

Coincidentally, when we compare the 2000's and 1960's, the accrued growth rates of the distribution extreme layers are similar. The income of the 10% wealthiest people in the 1960's increased by 66.87%, almost the increase of the 50% poorest people in the last decade, and vice-versa. That is what we call reverse image in the inequality mirror. At the end of last decade, we came back to where we were half a century before.

Recent Developments in Social Indicators Based on Income - 12 Months Variation
 The graphs below illustrate the changes in average income inequality for the concept of per capita household income including null values and their evolution of poverty in various sub-periods, viz. i) from December 2003 to December 2008, ii) in December 2008 to December 2009, and iii) in December 2009 to December 2010.



The following graphic opens the last year in sub-periods. Identifying the growing expansion of the middle income and falling poverty and inequality in the months during 2010:



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

Inequality in the Decade

- ✓ PME shows that inequality fell not only between PNADs, but that it also fell at the extremes.
- ✓ Accumulated growth rate in the last decade: **10,03% for 10% richest and 67,93% to 50% poorest.**
- ✓ **Growth rate of the 50% poorest was 577% higher than the richest 10%.**
- ✓ As **average-income ratios** on both groups (an inequality measure), falls almost half of the initial values: from **18,12 on December 2000 to 9,76 on December 2010.**
- ✓ **It' still a high inequality level.**

The Country of the Past

Income earned by Afro-Brazilians, illiterates, women and people from the Northeast, in the outskirts, countryside and construction sites increased faster in the 21st century.

According to PNAD (Pesquisa Nacional de Amostras a Domicílio - National Household Survey), there was a 23.7% real increase in per capita income between 2001 and 2009. That is, if we disregard inflation and population growth, the average Brazilian performance was far from being a great growth spectacle.

The average hides as much as it shows. In particular, it attaches more weight to changes observed in the higher income brackets. We are worth what we earn. If we point our binoculars to the audience: who is sitting in the dress circle? And who missed the show of increasing incomes?

The income of the 10% Brazilians in the lowest income bracket increased by 69.08% during the period. The gain slowly becomes smaller and smaller as we get closer to the top of the distribution, reaching 12.8% in the top 10% bracket. This growth rate is closer to the average than the poor's.

The poorest feel their eyes squinted by the Chinese growth. The wealthiest see themselves in a stagnant country, as suggested by the headlines on GDP growth, which is blind to inequality. Out of sight, out of mind.

Per capita income, the benchmark for most research on the poverty and inequality is an internal measure of households. As if there were a kind of a domestic socialism, where household members would throw their respective incomes into a common pot, to be distributed to all household members alike.

The concept of household per capita income eliminates, by definition, all existing inequality among members of a household. For instance, it is assumed that, within a household, if the wife earns less than the husband, her loss will be offset by her husband's gain. In this context, inequality between women and men is underestimated

from the per capita income point of view. We tend to disregard the inequality we cannot see.

Therefore, how did the average income inequality among people, individuals from different society layers, behave from 2001 to 2009?

Gender – her income increases 38%. We also report the income ratio, with the lowest bracket in the numerator. In this case, the income ratio by gender – women on top – increased from 0.49 to 0.58 between 2001 and 2009.

Ethnicity – the income of those who identify themselves as black or *pardo* (official term for those people of mixed African and Caucasian extractions) increased 43.1% and 48.5%, respectively, compared to 20.1% for Caucasians. The income ratio between Caucasian and Afro-Brazilian people increased from 0.53 to 0.62.

Education – the income of those with no education increases 46.7% against the 17.5% decrease of those who, at least, started college. In the case of households headed by an illiterate, income increases 53.5% in comparison with a 9% decrease of those with 12 or more years of education. This conjunction of movements makes the income ratio of the latter increase from 0.1 to 0.17 in relation to the first ones.

Spatial – Income in the Northeast increases 41.8%, compared to 15.8% in the Southeast. The income ratios increase from 0.43 to 0.53. In greater details, income in Maranhão, initially the poorest estate, increased 46.8%, compared to São Paulo's, initially the wealthiest estate, 7.2%, in 2001. In Sergipe, income increased 58% in the period.

Zooming in at the capitals, the highest growth rate was in Teresina, 56.2%, and the highlight among Brazilian metropolitan outskirts was Fortaleza, with 52.3%. In its turn, income in the capital and outskirts of São Paulo metropolitan area increased 2.3% and 13.1%, respectively. This pattern, with the outskirts¹ growing more than the capital, was

¹ It should be added that in Brazil, the "suburbs" (*periferias*) house the poorer, not the well-to-do, as in some other countries.

observed in 7 out of the 9 Brazilian great metropolitan areas. Likewise, income increased more in the poorer countryside areas, 49.1%, compared to 16% in the metropolitan areas and 26.8% in the remaining cities. Economic sectors performing above average include those where the poorest work, like domestic services, agriculture and construction (see www.fgv.br/cps/construcao).

Overall, the income of traditional outcasts, such as Afro-Brazilians, illiterates, women, people from the Northeast as well as of those living in the outskirts of larger cities, the countryside and building sites increased more in the 21st century. This trend contrasts with what we see in developed countries or in the other BRICs, where inequality is visibly increasing. More than the country of the future entering the new millennium, Brazil, the last country in the Western world to abolish slavery, should be seen as a country beginning to set itself free from the heritage of slavery.

Falling horizontal Inequality

- ✓ Between 2001 and 2009, the highest real income gains were from traditionally excluded groups.
- ✓ Afro-Brazilian gained 43% increases in their incomes, while caucasian ones, 21%. Gains for women was 38%, against 16% for men. Illiterates gained 47%, while people who have been at university experienced a 17% fall.
- ✓ Maranhão, that was the poorest state, had increases of 46%; São Paulo, the richest, of 7,2%. At Northeast, 42% against 16% from “Wonder Southeast”. At fields, 49% against 16% at metropolitan cities, despite the 42% gains of the “favelas” residents.

Overview of Evolution: Social Measures based on Per Capita Income

With annual periodicity and national coverage, PNAD allows us to monitor the evolution of several social indicators based on income. The overview available in the website presents the temporal evolution of different indicators such as poverty (from different lines and concepts), economic classes (aggregated or disaggregated), income, inequality and education (among others indicators) since the beginning of the 90. Below, a table of available variables for analysis:

Population
Income
Education

Each of these indicators can be analyzed for the general population or for subgroups: i) socio-demographic characteristics as gender, age, years of education, race, family position, ii) characteristics of the producer as position in occupation, assistance, education and access to digital assets, and iii) consumer characteristics like access to consumer goods and services, and iv) space as a place of residence, area (metropolitan, urban and rural non-metropolitan), states, and in an innovative way, capital and suburbs:

The screenshot shows a web interface for selecting variables. At the top, there are two dropdown menus: 'Tema:' (set to 'População') and 'Indicador:' (set to 'População'). Below them is a note: '* Segure a tecla 'CTRL' para marcação de 2 filtros simultâneos.' There are two buttons: 'Gerar tabelas' and 'Limpar seleção'. The interface is divided into sections with blue headers:

- Características Sócio-Demográficas:** Includes checkboxes for 'População Total' (checked), 'Sexo', 'Faixa Etária', 'Cor ou Raça', 'Posição na Família', 'Imigração', and 'Maternidade'.
- Renda:** Includes checkboxes for 'Tem renda de todas as fontes', 'Tem renda do trabalho principal', 'Tem renda da previdência', 'Tem renda de outras fontes', 'Tem renda de programas sociais', 'Tem renda de todos os trabalhos', 'Classe econômica' (checked), 'Classes econômicas', and 'Classes econômicas 2' (checked).
- Características do Produtor:** Includes checkboxes for 'Posição na Ocupação', 'Tempo de Empresa', 'Anos de estudo do chefe', 'É Contribuinte da Previdência Privada', 'Tamanho da Empresa', and 'Frequenta ou frequentou curso superior'.

Access to Goods, Services and Assets - A series of variables captured by PNAD as access to durable goods, housing, public services and productive assets consolidate the idea of the last section that the gains in income were higher for excluded groups. The list of examples is long:

1) Public Services

Access to Electricity (No 49,1%; Yes 20,2%),

Access to Piped Water (No 49,7%; Yes 15,7%),

Access to Sewage (No (rudimentary sewage 34,5%, river or lake 24,9%, for example); Yes 11,02%),

Access to Garbage Collected (No (wasteland 49,1%, burned 30,8%; Yes 15%),

2) Housing

Financed Homeowner (No 24,3%; Yes 20,2%),

Access to bathroom (No 39,8%; Yes 16%)

3) Access to Consumer Goods

Radio (No 51,8%; Yes 22%),

Television (No 70%; Yes 16,5%),

Refrigerator (No 42,03%; Yes 13,75%),

Freezer (No 43,05%; Yes 3,35%),

Washing Machine (No 25,14%; Yes 0,52%),

Computer with Internet (No 33,77%; Yes 2,22%),

Cell phone (No 9,25%; Yes 28,84%),

4) Labor Characteristics

Contributes to Social Security (No 16%; Yes -0,9%);

Time of Service at the Company (1 to 3 years 11,35%; Above 5 years 7,81%);

Company Size (1 to 3 employees 5,97%; Above 11 -2,36%);

Job Occupation (Domestic servant 27%, Employer - 2,37%);

5) Personal Characteristics

Household Position: Spouse 50,94% or Son 44,83%; Reference Person (3,01%),

Migration (Native 32,4%; Migrated more than 10 years ago 10,89%),

Attended or Attends Higher Education (No 23,38%; Yes -17,61%).

Integrating Impacts on Income Distribution

(Education Effects, Social Programs and Labor)

A panoramic view more integrated comes from a kind of methodology Lego - the toy to assemble - explaining the pieces of changes in income of Brazilians. This methodology is simple and straightforward, measuring how the income from outside the labor market (social programs, pensions, rents etc.) interacts with labor ingredient classics, like unemployment rates and participation, formal schooling, the return of education, and extension of the work week, that in the end determine the amount of income earned by people of working age.

The Table shows the values in terms of levels of these different variables on the first and last PNAD of the decade and the rate of cumulative variation between them that is the part that most interests us here. The average Brazilian income of working age increased by 15.08% in the period, reflecting the low growth rate of around 1.77% per year over the eight years considered. The last row of the table shows that the schooling increase, alone, would imply a rent increase of 19.55%, but the reduction of returns of education, measured as average hourly per year of study, resulted in decrease of 9, 47% of income. It is expected the fall of the returns in the presence of increased quantities.

If we add the positive effects of increasing the occupancy rate in the Economically Active Population (PEA - 3.48%) and participation rate in labor market of Working Age Population (PIA - 4.08%), we have the observed growth, since the other effects are negative, but small in magnitude, which are the reduction of working hours (-0.18%) and the contribution of income not from work (-0.91%).

| 15 to 65 years - Total | | | | | | | | |
|------------------------|--|---------------------------|--|---|--------------------------------------|----------------|--------------------------|----------------------------------|
| Total Population | | | | | | | | |
| Category | Year | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| | 2009 | 806,56 | 1,1703 | 3,08 | 8,64 | 42,107 | 83,30% | 73,90% |
| | 2001 | 700,87 | 1,1811 | 3,402 | 7,227 | 42,185 | 80,50% | 71,00% |
| Total | Average Accumulated Variation from 2001 to 2009 | 15,08% | -0,91% | -9,47% | 19,55% | -0,18% | 3,48% | 4,08% |

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

Interpreting the Determinants of Changes in Income Inequality

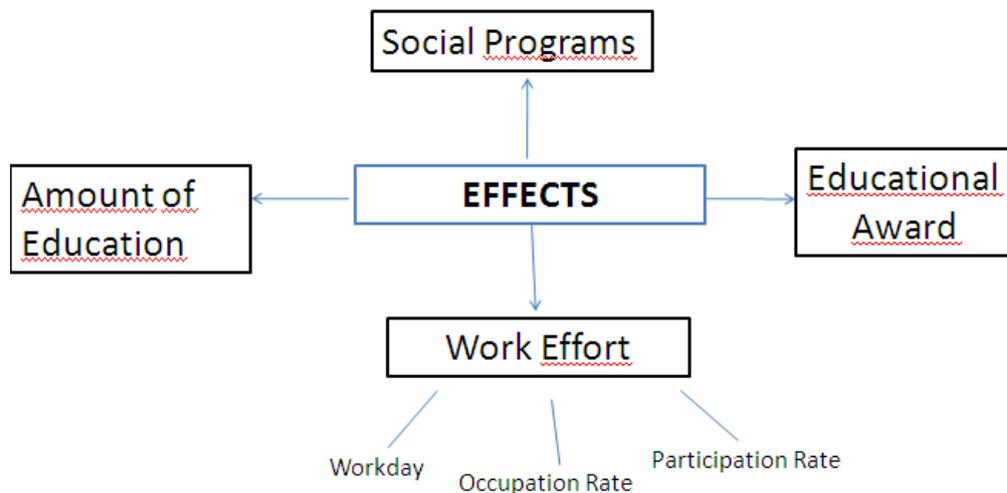
This methodology of decomposition allows integrate around the total income variations (and around the differential of these variations between groups) these different components that, in general, are dispersed in individual analysis. We deconstruct, through this methodology, the pieces of the expansion of previous income (2001-2009) in average income, but also at the bottom and the top of the distribution in order to capture the effects of variations of these components on income inequality. We always work with the working age population between 15 and 65 years, in order to provide practical relevance to the labor component analysis.

| 15 to 65 years - Total on Accumulated Variation from 2001 to 2009 % | | | | | | | |
|---|---------------------------|--|---|--------------------------------------|----------------|--------------------------|----------------------------------|
| Income Quintil | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| 20%+ (more) | 8,88% | -2,32% | -6,41% | 8,12% | 1,33% | 2,41% | 6,28% |
| 20%- (less) | 49,52% | 11,85% | -10,64% | 55,59% | -3,96% | 1,97% | -1,84% |
| Difference Percentage Points | 40,63% | 14,18% | -4,23% | 47,46% | -5,29% | -0,44% | -8,11% |

Source: CPS/FGV microdata PNAD/IBGE

We begin with a more general discussion of changes in inequality, focusing on changes in income from all sources, from the 20% poorest and the 20% richest. The income of the first social stratum of income distribution grew 49,52% against 8,88% of the richest and 15,08% of general average of all working age population. In other words, a cumulative gain of 40,63% more favorable to the base. Now, why inequality has fallen?

**Determinants of Income Inequality Variations
(Educação, Social Programs and Labor Effects)**



There are two main factors in this case. The analysis shows the important role played by educational variables in this period. If it was only the effect of education and all things being constant (income not work, working hours etc.), the income base would grow 55.59% against 8.12% from the top. That is, in this period, only the effect of the reduction of inequality in years of schooling completed - the education effect - indicates that the income of the first would grow 47.46% more than the top of the distribution. The effect of income not work at was 11.85% in the base against -2.32% in the top of the distribution. In other words, this effect arising from social programs would indicate that the income of the poorest would be growing 14.18% more than the richest. The combination of these two effects, education and social programs, would explain 68.3% of differential income growth pro-poor against 47.46% observed in practice. This implies that inequality would have fallen more if the others effects had not acted against the purpose. But what are these effects?

We can summarize it in education premium effect (-4.23%) and to aggregate all inside the label work effect, then including reduction of working hours and of occupancy rates and of the participation in the labor market by 14.3%, what almost compensates the impact of increase focused in income not work among the poor.

Panorama of Decomposition of Income through Labor Market

The wealth of information from PNAD allows to decompose the population income in several pieces. We use a methodology that maps the impacts of each one of the main labor ingredients in terms of total income earned individually by each person. In this case, the income here is the result of different factors multiplication, such as:

INCOME ALL SOURCES OF INCOME / INCOME OF ALL WORKING
WAGES / WORK SHIFT * EDUCATION
LEVEL OF EDUCATION
JORNADA/WORK SHIFT
NUMBER OF OCCUPIED / ECONOMICALLY ACTIVE POPULATION (PEA)
ECONOMICALLY ACTIVE POPULATION (PEA) / TOTAL POPULATION

To facilitate the analysis we created a gadget to query the data that allows us to compare the labor performance of those who attended Professional education courses x those who don't. Following, there is a table with variables available for cross: i) socio-demographic characteristics as gender, age, years of education, race, position in the family; ii) producer characteristics as position in the occupation, contribution, education and access to digital assets; iii) consumer characteristics such as access to consumer goods and services. To learn more about the feature analysed, just click over the item to be analysed and the question that originated the variable will appear, exactly in the way that it was researched.

Panorama de Decomposição de Renda - Trabalhista
Renda individual com 2009

* Ano:

Faixa etária: Grupo:

* Selecione um ano, e com a tecla Ctrl pressionada selecione o período para comparação.

[Características Espaciais](#)

| | | |
|---|--|---|
| <input checked="" type="checkbox"/> População Total | <input type="checkbox"/> Tipo de área censitária | <input type="checkbox"/> Local de Moradia |
| <input type="checkbox"/> Região Geográfica | <input type="checkbox"/> Estado | <input type="checkbox"/> Região Metropolitana |
| <input type="checkbox"/> Tipo de cidade (detalhado) | <input type="checkbox"/> Tipo de Cidade | <input type="checkbox"/> É capital |
| <input type="checkbox"/> Abertura das metrópoles (Periferia e Capital (núcleo)) | <input type="checkbox"/> Capital | <input type="checkbox"/> Capitais e periferias metropolitanas |

[Características Demográficas](#)

| | | |
|---|---------------------------------------|--|
| <input type="checkbox"/> Sexo | <input type="checkbox"/> Faixa Etária | <input type="checkbox"/> Idade (anos) |
| <input type="checkbox"/> Posição na Família | <input type="checkbox"/> Migração | <input type="checkbox"/> Quintil |
| <input type="checkbox"/> Mora com a Mãe | <input type="checkbox"/> Tem Mãe Viva | <input type="checkbox"/> Maternidade |
| <input type="checkbox"/> Tem Registro de Nascimento | <input type="checkbox"/> Escolaridade | <input type="checkbox"/> Escolaridade do chefe |

http://www.fgv.br/ibrecps/CPC/TrabalhoPNAD09_ajustado/index.htm

Now we apply the same methodology to understand the causes of changes in differentials by gender, race, education of the individual and of the head of the household, beyond series of spatial variables. We focus our analysis on the extremes of initial values of average income of each group.

Genre

The largest income growth of the women of 17.83% compared to men is primarily explained by the growth of female effort in labor market - more hours, higher occupancy and higher labor participation which together account for 16.25% of growth. It is not explained by the education effect, which is negative, indicating that in this period the education/schooling of men grew more than the women employed, being offset/compensate by increased presence of social programs and educational awards between them.

| 15 to 65 years - Total | | | | | | | |
|-------------------------------------|---------------------------|--|---|--------------------------------------|----------------|--------------------------|----------------------------------|
| Gender | | | | | | | |
| Year | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| Male | 9,31% | -1,87% | -9,90% | 21,41% | -0,76% | 2,46% | 0,35% |
| Female | 27,14% | -0,31% | -6,81% | 15,74% | 2,29% | 5,84% | 9,48% |
| Difference Percentage Points | 17,83% | 1,55% | 3,09% | -5,67% | 3,04% | 3,38% | 9,13% |

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

Color or Race

We approached the table below two income differentials by color or race. Blacks and Whites and Whites & Pardos where the income of the first growing respectively 19.06% and 24.61% higher than that of seconds. The main component in both groups is the effect-education corresponding to more than 14 percentage points of the growth differential between races. The largest relative increase in income of browns to blacks with respect to prize giving function effects of education and social programs.

| Ethnicity | | | | | | | |
|-------------------------------------|---------------------------|--|---|--------------------------------------|----------------|--------------------------|----------------------------------|
| Ethnicity | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| Caucasian | 12,42% | -1,85% | -8,00% | 16,10% | 0,21% | 3,03% | 4,07% |
| Afro-Brazilian | 31,48% | -0,43% | -7,61% | 30,77% | 0,06% | 4,48% | 4,69% |
| Difference Percentage Points | 19,06% | 1,42% | 0,39% | 14,67% | -0,14% | 1,45% | 0,62% |
| Caucasian | 12,42% | -1,85% | -8,00% | 16,10% | 0,21% | 3,03% | 4,07% |
| Mulatto | 37,03% | 0,92% | -3,39% | 30,17% | -0,59% | 4,77% | 3,98% |
| Difference Percentage Points | 24,61% | 2,77% | 4,61% | 14,07% | -0,80% | 1,74% | -0,10% |

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

Slums (Clusters Subnormal)

The 15.32 percentage points over the growth of slums in relation to sectors not special happens: half the effect of education and half by the greater growth of variable work effort and access to social programs.

| Place of Living | | | | | | | |
|-------------------------------------|---------------------------|--|---|--------------------------------------|----------------|--------------------------|----------------------------------|
| Place of Living | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| Not Special | 14,69% | -0,95% | -9,39% | 19,29% | -0,19% | 3,48% | 3,94% |
| Slum and Sub | 30,05% | 0,87% | -9,81% | 27,70% | 0,07% | 4,24% | 7,42% |
| Difference Percentage Points | 15,36% | 1,82% | -0,42% | 8,40% | 0,26% | 0,76% | 3,49% |

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

Macro-Region

Here we focus on the growth differential of 20.89 percentage points between the two most populous areas in Brazil: the Northeast and Southeast; three quarters are due by

Effect - greater growth in northeastern education added the smaller relative reduction of educational awards. The growth effect of social programs (and retirement) is offset/compensate by the relative drop in the Northeast, of variables of labor effort.

| Geographic Region | | | | | | | |
|-------------------------------------|---------------------------|--|---|--------------------------------------|----------------|--------------------------|----------------------------------|
| Geographic Region | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| Southeast | 8,60% | -1,73% | -12,74% | 15,67% | 0,60% | 3,16% | 5,67% |
| Northeast | 29,49% | 1,69% | -8,79% | 30,68% | 0,13% | 3,99% | 2,75% |
| Difference Percentage Points | 20,89% | 3,42% | 3,95% | 15,01% | -0,47% | 0,84% | -2,91% |

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

States

Similarly when we explain the growth differential of 34.94% between the poorest state in the country, Maranhão, with the richest, São Paulo, we note again the importance of education effect explaining $\frac{3}{4}$ effect of growth differential observed. As compared with the Northeast Southeast, the award effects and social programs are pro-poor, while the effects associated to the work effort act in the opposite direction.

| State | | | | | | | |
|-------------------------------------|---------------------------|--|---|--------------------------------------|----------------|--------------------------|----------------------------------|
| State | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| São Paulo | 1,54% | -0,99% | -18,61% | 15,22% | 0,87% | 2,04% | 6,36% |
| Maranhão | 36,48% | 6,72% | -9,90% | 42,34% | -0,33% | 5,88% | -5,38% |
| Difference Percentage Points | 34,94% | 7,71% | 8,72% | 27,12% | -1,20% | 3,85% | -11,74% |

Metropolis

Taking a zoom in the metropolises, the education effect is crucial to explain the higher growth of 22.53% of Grande Salvador vis a vis the one of Grande Sao Paulo. Unlike other spatial comparisons shown above, the effect of work effort is on the side of poorest city, while the education award plays against, and the social programs effect stays in similar levels.

| Metropolitan Region | | | | | | | |
|-------------------------------------|---------------------------|--|---|--------------------------------------|----------------|--------------------------|----------------------------------|
| State | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| São Paulo | -0,96% | - | -0,96% | -0,96% | -0,96% | -0,96% | -0,96% |
| Salvador | 21,57% | - | -9,03% | 13,57% | 3,99% | 4,01% | 9,76% |
| Difference Percentage Points | 22,53% | 0,19% | -8,06% | 14,53% | 4,95% | 4,97% | 10,72% |

Schooling

Finally, we discuss the reduction of income differentials by years of study taking the extremes considered illiterate people with less than 1 year of study and those with least incomplete higher level. Again, the growth is more favorable to lower income groups. Of 55.41 percentage points when we take the education of individuals and 47.93 percentage points when we take the education of the household reference person.

| Schooling | | | | | | | |
|---------------------------------------|----------------------------------|---|--|---|-----------------------|---------------------------------|---|
| Individual Years of Schooling | Income from all Sources = | Income from all Sources / Income from all Jobs x | Hourly Wage by Years of Schooling of the Occupied x | Years of Schooling of the Occupied x | Worked Hours x | Occupation Rate on PEA x | Labour Market Participation Rate |
| 12 or more | - 18,26% | -3,24% | -18,25% | -0,14% | 2,54% | -0,45% | 1,54% |
| Illiterate or less than 1 year | 37,15% | 14,85% | - | - | -2,61% | 0,66% | -3,69% |
| Difference Percentage Points | 55,41% | 18,09% | - | - | -5,14% | 1,11% | -5,23% |

However, the methodology of decomposition does not fit in this case because of the zero-year study effect of the lowest category, so we use another methodology to try to isolate the magnitude of the changes discussed here.

Difference in Differences Analysis of Income

The last two sections of the survey showed that the poorest people of various socio-demographic cuts and space were those who had higher incomes rise, more gains for women than for men; more for illiterate than for those with at least incomplete university level; more for blacks and browns than for whites. In spatial terms the income grew, most in the Northeast than in the "southeast wonder", but more in the countryside than in larger cities, more in the slums and in their peripheries.

Now, the extent that people whom live in the countryside have little schooling, what determined the changes: the degree of rurality or the educational level? There is the known case of the candidate for congresswoman for Rio de Janeiro who called herself a woman, black and *favelada*. If we control for all these characteristics at the same time, which one stands out in advance of income? This is the key question of this section. Obviously, to the citizen the fundamental variable is how much his income increases. Now, the analysis matters in the way that the characteristics/features not recur with frequency from person to person and we want to understand the change factors and for this we turn to multivariate regressions of income and to the difference in differences analysis, whose main results are summarized below.

Falling Inequality 2001 to 2009 – Higher income growth between groups:

1) Taking the variable of greatest interest, the difference in difference estimator (D in D) indicates a higher income growth among lower income groups:

- Northeast x Southeast → x (6% when controlled) 6% uncontrolled
- State - Maranhão São Paulo x → (12% controlled) 12% uncontrolled
- Rural Area x Metropolis → (16% controlled) 14% uncontrolled
- Female x Male → (-1% controlled) -5% uncontrolled
- Afro-Brazilian X Caucasian → X (4% controlled) 5% uncontrolled
- browns x whites → X (5% controlled) 7% uncontrolled
- Illiterate / 0 years x 12 years or more → (40% controlled) 41% uncontrolled
- Construction x another sector → (3% controlled) 6% uncontrolled

The first numbers are the controlled growth differentials, the latter are the ones without control. Of all single effects, it is worth stand out two: First, and most importantly, the key variable found in reducing inequality is education. The increase of relative income of people with less than one year of schooling rises 40% more than people with at least university level incomplete. Secondly, the reduction of income inequality is not explained by gender variable once we take into account other variables.

Technical aspects

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

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.

Mincerian Equation

This equation is the basis of the analysis in what concerns isolating the effects of specific variables in individual income distribution Mincer equation is usually 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:

$$\ln w = \beta_0 + \beta_1 \text{educ} + \beta_2 \text{exp} + \beta_3 \text{exp}^2 + \gamma' x + e$$

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;

e is a stochastic shock

This is a model of regression in the log-level format, that is, the dependent variable - salary - is in a logarithm format and the independent variable, more relevant - education - is on level. Therefore, the β_1 coefficient measures how much an extra year of schooling causes a proportional variation in the individual's salary. For instance, if β_1 is estimated in 0,18, this means that each extra year of study will be related on average with an increase in salary of 18%.

Difference-in-Difference estimator (D-D)

Mathematically, we can represent this difference-in-difference estimator (D-D) used from the following Mincerian-type per capita income equations: $\ln Y = g_0 + g_1 * dV + g_2 * dY + (D-D) * dV * dY + \text{other control}$

Where $(D-D) = (y_{2;b-y_2,a}) - (y_{1;b-y_1,a})$

The variables used as control of the regressions are: Sex, Colour, Age, Education, Migration (native, migrant), Federal States (27 FUs) Population Density (Rural, Urban and Metropolitan), Year (2001 and 2009). In this case, we assess the impact on individuals with similar characteristics regarding sex, race, age, education, etc., except the fact of being in the group exposed to no education, for example. In this section, we just show the variables involved in the difference in difference estimators corresponding to different models. The estimated full models are available in the appendix. In all cases, the instrumental regression allows to test statistically if the coefficients are significantly different from zero etc..

The equation of log of income, also called the Mincerian model, demonstrates:

- 2) Income per capita growth of people with similar observable characteristics over time (ranging between 2001 and 2009).
- 3) Taking the period as a whole, as expected, the higher income was presented by the groups that are omitted in our model

- Southeast
- Sao Paulo
- Metropolis
- Male
- Caucasian
- 12 years or more of study
- Not construction sectors

We present below, the interactive term of each controlled model. The complete models can be found attached followed by models related to labor income.

Equations with control

Schooling

| Estimated Regression Coefficients | | | |
|--|-----------------|----------------|--------------------|
| Parameter | Estimate | t Value | Pr > t |
| KEYD2 EDUCA03 | -1.5661492 | -204.86 | <.0001 |
| KEYD2 EDUCA48 | -1.4352210 | -185.36 | <.0001 |
| KEYD2 EDUCA812 | -1.0193033 | -133.97 | <.0001 |
| KEYD2 GARBAGEEDUCA | -1.4114157 | -66.63 | <.0001 |
| KEYD2 ZZZZZEDUCA12 | 0.0000000 | . | . |
| YEAR 2009 | -0.1155097 | -13.78 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| KEYD2*YEAR EDUCA03 2009 | 0.4021384 | 41.58 | <.0001 |
| KEYD2*YEAR EDUCA03 z2001 | 0.0000000 | . | . |
| KEYD2*YEAR EDUCA48 2009 | 0.2548667 | 25.88 | <.0001 |
| KEYD2*YEAR EDUCA48 z2001 | 0.0000000 | . | . |
| KEYD2*YEAR EDUCA812 2009 | 0.1474745 | 15.55 | <.0001 |
| KEYD2*YEAR EDUCA812 z2001 | 0.0000000 | . | . |
| KEYD2*YEAR GARBAGEEDUCA 2009 | 0.4048677 | 14.28 | <.0001 |
| KEYD2*YEAR GARBAGEEDUCA z2001 | 0.0000000 | . | . |
| KEYD2*YEAR ZZZZZEDUCA12 2009 | 0.0000000 | . | . |
| KEYD2*YEAR ZZZZZEDUCA12 z2001 | 0.0000000 | . | . |

Gender

| Estimated Regression Coefficients | | | |
|--|-------------------|----------------|--------------------|
| Parameter | Estimate | t Value | Pr > t |
| GENDER Female | -0.4453612 | -111.44 | <.0001 |
| GENDER zMale | 0.0000000 | . | . |
| YEAR 2009 | 0.1139564 | 32.41 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| GENDER*YEAR Female 2009 | -0.0121080 | -2.31 | 0.0212 |
| GENDER*YEAR Female z2001 | 0.0000000 | . | . |
| GENDER*YEAR zMale 2009 | 0.0000000 | . | . |
| GENDER*YEAR zMale z2001 | 0.0000000 | . | . |

Ethnicity

| Estimated Regression Coefficients | | | |
|-------------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| ethnicity Asian | 0.2350684 | 6.25 | <.0001 |
| ethnicity Ignored | -0.5660445 | -2.29 | 0.0223 |
| ethnicity Indigenous | -0.1418372 | -2.68 | 0.0073 |
| ethnicity Mulatto | -0.2437640 | -56.36 | <.0001 |
| ethnicity Afro-Brazilian | -0.2428812 | -32.35 | <.0001 |
| ethnicity zCaucasian | 0.0000000 | . | . |
| YEAR 2009 | 0.0830594 | 21.92 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Asian 2009 | -0.1903999 | -3.99 | <.0001 |
| ethnicity*YEAR Asian z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Ignored 2009 | 0.6528885 | 2.63 | 0.0084 |
| ethnicity*YEAR Ignored z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Indigenous 2009 | -0.0188494 | -0.30 | 0.7647 |
| ethnicity*YEAR Indigenous z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Mulatto 2009 | 0.0538194 | 9.82 | <.0001 |
| ethnicity*YEAR Mulatto z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Afro-Brazilian 2009 | 0.0451331 | 4.64 | <.0001 |
| ethnicity*YEAR Afro-Brazilian z2001 | 0.0000000 | . | . |
| ethnicity*YEAR zCaucasian 2009 | 0.0000000 | . | . |
| ethnicity*YEAR zCaucasian z2001 | 0.0000000 | . | . |

Construction

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| const Yes | -0.0293747 | -4.18 | <.0001 |
| const zNo | 0.0000000 | . | . |
| YEAR 2009 | 0.1063581 | 38.66 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| const*YEAR Yes 2009 | 0.0333512 | 3.67 | 0.0002 |
| const*YEAR Yes z2001 | 0.0000000 | . | . |
| const*YEAR zNo 2009 | 0.0000000 | . | . |
| const*YEAR zNo z2001 | 0.0000000 | . | . |

Place of Residence

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| SUB Sim | -0.1830647 | -21.49 | <.0001 |
| SUB zNão | 0.0000000 | . | . |
| YEAR 2009 | 0.1085034 | 40.05 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| SUB*YEAR Sim 2009 | -0.0023223 | -0.20 | 0.8409 |
| SUB*YEAR Sim z2001 | 0.0000000 | . | . |
| SUB*YEAR zNão 2009 | 0.0000000 | . | . |
| SUB*YEAR zNão z2001 | 0.0000000 | . | . |

City Type

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| NEW Rural | -0.5475016 | -78.35 | <.0001 |
| NEW Urban | -0.2303502 | -49.73 | <.0001 |
| NEW zMetropolitan | 0.0000000 | . | . |
| YEAR 2009 | 0.0554406 | 13.16 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| NEW*YEAR Rural 2009 | 0.1642791 | 18.38 | <.0001 |
| NEW*YEAR Rural z2001 | 0.0000000 | . | . |
| NEW*YEAR Urban 2009 | 0.0687742 | 12.32 | <.0001 |
| NEW*YEAR Urban z2001 | 0.0000000 | . | . |
| NEW*YEAR zMetropolitan 2009 | 0.0000000 | . | . |
| NEW*YEAR zMetropolitan z2001 | 0.0000000 | . | . |

Regions

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| RE Center | -0.0029222 | -0.43 | 0.6682 |
| RE Northeast | -0.3905976 | -75.29 | <.0001 |
| RE North | -0.1115357 | -15.86 | <.0001 |
| RE South | -0.0483636 | -8.36 | <.0001 |
| RE zSoutheast | 0.0000000 | . | . |
| YEAR 2009 | 0.0730694 | 16.30 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| RE*YEAR Center 2009 | 0.0534492 | 5.95 | <.0001 |
| RE*YEAR Center z2001 | 0.0000000 | . | . |
| RE*YEAR Northeast 2009 | 0.0599479 | 8.90 | <.0001 |
| RE*YEAR Northeast z2001 | 0.0000000 | . | . |
| RE*YEAR North 2009 | -0.0026767 | -0.28 | 0.7766 |
| RE*YEAR North z2001 | 0.0000000 | . | . |
| RE*YEAR South 2009 | 0.0621708 | 8.15 | <.0001 |
| RE*YEAR South z2001 | 0.0000000 | . | . |
| RE*YEAR zSoutheast 2009 | 0.0000000 | . | . |
| RE*YEAR zSoutheast z2001 | 0.0000000 | . | . |

States of Federation

| Estimated Regression Coefficients | | | | |
|-----------------------------------|------------|----------------|---------|---------|
| Parameter | Estimate | Standard Error | t Value | Pr > t |
| keyuf*YEARAC 2009 | 0.1189697 | 0.03594666 | 3.31 | 0.0009 |
| keyuf*YEARAL 2009 | 0.1285328 | 0.02449238 | 5.25 | .0001 |
| keyuf*YEARAM 2009 | 0.0186098 | 0.01951706 | 0.95 | 0.3403 |
| keyuf*YEARAP 2009 | -0.2443926 | 0.03216629 | -7.60 | .0001 |
| keyuf*YEARBA 2009 | 0.1126849 | 0.01155656 | 9.75 | .0001 |
| keyuf*YEARCE 2009 | 0.1919984 | 0.01370772 | 14.01 | .0001 |
| keyuf*YEARDF 2009 | 0.0919247 | 0.01802506 | 5.10 | .0001 |
| keyuf*YEARES 2009 | 0.1579115 | 0.02018300 | 7.82 | .0001 |
| keyuf*YEARGO 2009 | 0.1629603 | 0.01390792 | 11.72 | .0001 |
| keyuf*YEARMA 2009 | 0.1157950 | 0.02227349 | 5.20 | .0001 |
| keyuf*YEARMG 2009 | 0.1599239 | 0.01072460 | 14.91 | .0001 |
| keyuf*YEARMS 2009 | 0.1784653 | 0.01959556 | 9.11 | .0001 |
| keyuf*YEARMT 2009 | 0.0489855 | 0.01927183 | 2.54 | 0.0110 |
| keyuf*YEARPA 2009 | 0.0170175 | 0.01447401 | 1.18 | 0.2397 |
| keyuf*YEARPB 2009 | 0.2158207 | 0.02116949 | 10.19 | .0001 |
| keyuf*YEARPE 2009 | 0.0617048 | 0.01290378 | 4.78 | .0001 |
| keyuf*YEARPI 2009 | 0.1867217 | 0.02651256 | 7.04 | .0001 |
| keyuf*YEARPR 2009 | 0.1626769 | 0.01313217 | 12.39 | .0001 |
| keyuf*YEARRJ 2009 | 0.0587750 | 0.01136788 | 5.17 | .0001 |
| keyuf*YEARRN 2009 | 0.1752669 | 0.02359982 | 7.43 | .0001 |
| keyuf*YEARRO 2009 | 0.1274099 | 0.02423769 | 5.26 | .0001 |
| keyuf*YEARRR 2009 | -0.1640341 | 0.03808181 | -4.31 | .0001 |
| keyuf*YEARS 2009 | 0.1110259 | 0.01123810 | 9.88 | .0001 |
| keyuf*YEARSC 2009 | 0.1433596 | 0.01586343 | 9.04 | .0001 |
| keyuf*YEARSE 2009 | 0.1225585 | 0.02459609 | 4.98 | .0001 |
| keyuf*YEARTO 2009 | 0.4713114 | 0.02962185 | 15.91 | .0001 |
| keyuf*YEAR zzSP 2009 | 0.0000000 | 0.00000000 | . | . |
| keyuf*YEAR zzSP z2001 | 0.0000000 | 0.00000000 | . | . |

Equations without control

Schooling

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| Intercept | 7.6207725 | 1069.03 | <.0001 |
| KEYD2 EDUCA03 | -1.8241994 | -228.70 | <.0001 |
| KEYD2 EDUCA48 | -1.5298496 | -186.25 | <.0001 |
| KEYD2 EDUCA812 | -1.0764530 | -133.33 | <.0001 |
| KEYD2 GARBAGEEDUCA | -1.5302513 | -65.28 | <.0001 |
| KEYD2 ZZZZZEDUCA12 | 0.0000000 | . | . |
| YEAR 2009 | -0.1652769 | -18.60 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| KEYD2*YEAR EDUCA03 2009 | 0.4123559 | 40.14 | <.0001 |
| KEYD2*YEAR EDUCA03 z2001 | 0.0000000 | . | . |
| KEYD2*YEAR EDUCA48 2009 | 0.2364376 | 22.35 | <.0001 |
| KEYD2*YEAR EDUCA48 z2001 | 0.0000000 | . | . |
| KEYD2*YEAR EDUCA812 2009 | 0.1440357 | 14.25 | <.0001 |
| KEYD2*YEAR EDUCA812 z2001 | 0.0000000 | . | . |
| KEYD2*YEAR GARBAGEEDUCA 2009 | 0.2856467 | 10.06 | <.0001 |
| KEYD2*YEAR GARBAGEEDUCA z2001 | 0.0000000 | . | . |
| KEYD2*YEAR ZZZZZEDUCA12 2009 | 0.0000000 | . | . |
| KEYD2*YEAR ZZZZZEDUCA12 z2001 | 0.0000000 | . | . |

Gender

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| Intercept | 6.4728554 | 2007.43 | <.0001 |
| GENDER Female | -0.3573221 | -73.42 | <.0001 |
| GENDER zMale | 0.0000000 | . | . |
| YEAR 2009 | 0.1913078 | 44.97 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| GENDER*YEAR Female 2009 | -0.0466064 | -7.28 | <.0001 |
| GENDER*YEAR Female z2001 | 0.0000000 | . | . |
| GENDER*YEAR zMale 2009 | 0.0000000 | . | . |
| GENDER*YEAR zMale z2001 | 0.0000000 | . | . |

Ethnicity

| Estimated Regression Coefficients | | | |
|-------------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| Intercept | 6.5672652 | 1907.79 | <.0001 |
| ethnicity Asian | 0.5580243 | 12.00 | <.0001 |
| ethnicity Ignored | -0.5848218 | -1.77 | 0.0773 |
| ethnicity Indigenous | -0.2629683 | -4.37 | <.0001 |
| ethnicity Mulatto | -0.5438974 | -110.46 | <.0001 |
| ethnicity Afro-Brazilian | -0.4663841 | -53.16 | <.0001 |
| ethnicity zCaucasian | 0.0000000 | . | . |
| YEAR 2009 | 0.1497658 | 32.35 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Asian 2009 | -0.2354742 | -4.00 | <.0001 |
| ethnicity*YEAR Asian z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Ignored 2009 | -0.2187062 | -0.66 | 0.5088 |
| ethnicity*YEAR Ignored z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Indigenous 2009 | -0.0601396 | -0.84 | 0.4009 |
| ethnicity*YEAR Indigenous z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Mulatto 2009 | 0.0682224 | 10.40 | <.0001 |
| ethnicity*YEAR Mulatto z2001 | 0.0000000 | . | . |
| ethnicity*YEAR Afro-Brazilian 2009 | 0.0465827 | 4.08 | <.0001 |
| ethnicity*YEAR Afro-Brazilian z2001 | 0.0000000 | . | . |
| ethnicity*YEAR zCaucasian 2009 | 0.0000000 | . | . |
| ethnicity*YEAR zCaucasian z2001 | 0.0000000 | . | . |

Activity

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| Intercept | 6.31619052 | 2463.94 | <.0001 |
| const Yes | 0.00116213 | 0.15 | 0.8823 |
| const zNo | 0.00000000 | . | . |
| YEAR 2009 | 0.14979455 | 44.18 | <.0001 |
| YEAR z2001 | 0.00000000 | . | . |
| const*YEAR Yes 2009 | 0.05920963 | 5.79 | <.0001 |
| const*YEAR Yes z2001 | 0.00000000 | . | . |
| const*YEAR zNo 2009 | 0.00000000 | . | . |
| const*YEAR zNo z2001 | 0.00000000 | . | . |

Place of Residence

| Estimated Regression Coefficients | | | |
|--|-----------------|----------------|--------------------|
| Parameter | Estimate | t Value | Pr > t |
| Intercept | 6.3279316 | 2506.54 | <.0001 |
| SUB Yes | -0.2754010 | -29.74 | <.0001 |
| SUB zNo | 0.0000000 | . | . |
| YEAR 2009 | 0.1533474 | 46.05 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| SUB*YEAR Yes 2009 | -0.0031424 | -0.25 | 0.8058 |
| SUB*YEAR Yes z2001 | 0.0000000 | . | . |
| SUB*YEAR zNo 2009 | 0.0000000 | . | . |
| SUB*YEAR zNo z2001 | 0.0000000 | . | . |

City Type

| Estimated Regression Coefficients | | | |
|--|-----------------|----------------|--------------------|
| Parameter | Estimate | t Value | Pr > t |
| Intercept | 6.5561815 | 1675.99 | <.0001 |
| NEW Rural | -0.8814773 | -118.17 | <.0001 |
| NEW Urban | -0.2781590 | -53.98 | <.0001 |
| NEW zMetropolitan | 0.0000000 | . | . |
| YEAR 2009 | 0.1011460 | 19.47 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| NEW*YEAR Rural 2009 | 0.1386051 | 13.67 | <.0001 |
| NEW*YEAR Rural z2001 | 0.0000000 | . | . |
| NEW*YEAR Urban 2009 | 0.0742849 | 10.90 | <.0001 |
| NEW*YEAR Urban z2001 | 0.0000000 | . | . |
| NEW*YEAR zMetropolitan 2009 | 0.0000000 | . | . |
| NEW*YEAR zMetropolitan z2001 | 0.0000000 | . | . |

Regions

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| Intercept | 6.5405525 | 1584.34 | <.0001 |
| RE Center | -0.0859422 | -10.28 | <.0001 |
| RE Northeast | -0.6235191 | -102.05 | <.0001 |
| RE North | -0.2759637 | -33.61 | <.0001 |
| RE South | -0.0064642 | -0.94 | 0.3493 |
| RE zSoutheast | 0.0000000 | . | . |
| YEAR 2009 | 0.1245585 | 23.07 | <.0001 |
| YEAR z2001 | 0.0000000 | . | . |
| RE * YEAR Center 2009 | 0.0760285 | 6.89 | <.0001 |
| RE * YEAR Center z2001 | 0.0000000 | . | . |
| RE * YEAR Northeast 2009 | 0.0627825 | 7.80 | <.0001 |
| RE * YEAR Northeast z2001 | 0.0000000 | . | . |
| RE * YEAR North 2009 | -0.0148003 | -1.35 | 0.1763 |
| RE * YEAR North z2001 | 0.0000000 | . | . |
| RE * YEAR South 2009 | 0.0722831 | 8.00 | <.0001 |
| RE * YEAR South z2001 | 0.0000000 | . | . |
| RE * YEAR zSoutheast 2009 | 0.0000000 | . | . |
| RE * YEAR zSoutheast z2001 | 0.0000000 | . | . |

States of Federation

| Estimated Regression Coefficients | | | |
|-----------------------------------|------------|---------|---------|
| Parameter | Estimate | t Value | Pr > t |
| keyuf*YEAR AC 2009 | 0.1931573 | 4.47 | .0001 |
| keyuf*YEAR AL 2009 | 0.1131908 | 3.97 | .0001 |
| keyuf*YEAR AM 2009 | 0.0035315 | 0.15 | 0.8781 |
| keyuf*YEAR AP 2009 | -0.2871924 | -7.49 | .0001 |
| keyuf*YEAR BA 2009 | 0.1250287 | 9.07 | .0001 |
| keyuf*YEAR CE 2009 | 0.2087313 | 12.81 | .0001 |
| keyuf*YEAR DF 2009 | 0.1549552 | 6.80 | .0001 |
| keyuf*YEAR ES 2009 | 0.1720085 | 7.18 | .0001 |
| keyuf*YEAR GO 2009 | 0.1859091 | 11.38 | .0001 |
| keyuf*YEAR MA 2009 | 0.1167180 | 4.64 | .0001 |
| keyuf*YEAR MG 2009 | 0.1613830 | 12.63 | .0001 |
| keyuf*YEAR MS 2009 | 0.1654317 | 7.11 | .0001 |
| keyuf*YEAR MT 2009 | 0.0675927 | 2.99 | 0.0028 |
| keyuf*YEAR PA 2009 | -0.0028014 | -0.17 | 0.8686 |
| keyuf*YEAR PB 2009 | 0.2255297 | 9.04 | .0001 |
| keyuf*YEAR PE 2009 | 0.0421858 | 2.70 | 0.0069 |
| keyuf*YEAR PI 2009 | 0.1812838 | 6.02 | .0001 |
| keyuf*YEAR PR 2009 | 0.1887529 | 12.06 | .0001 |
| keyuf*YEAR RJ 2009 | 0.0719115 | 5.25 | .0001 |
| keyuf*YEAR RN 2009 | 0.1514306 | 5.49 | .0001 |
| keyuf*YEAR RO 2009 | 0.1642002 | 5.88 | .0001 |
| keyuf*YEAR RR 2009 | -0.0484993 | -1.12 | 0.2633 |
| keyuf*YEAR RS 2009 | 0.1067704 | 8.03 | .0001 |
| keyuf*YEAR SC 2009 | 0.1783197 | 9.75 | .0001 |
| keyuf*YEAR SE 2009 | 0.1686053 | 5.80 | .0001 |
| keyuf*YEAR TO 2009 | 0.2368960 | 8.52 | .0001 |
| keyuf*YEAR zzSP 2009 | 0.0000000 | . | . |
| keyuf*YEAR zzSP z2001 | 0.0000000 | . | . |

Conclusions

Sustainable Inclusive Growth?

Two Nobel Economics prize winners, Amartya Sen and Joseph Stiglitz, presented the results of a report prepared by a commission formed at the request of the French President, Nicolas Sarkozy. The International Commission on Measurement of Economic Performance and Social Progress also counted on the support of 21 other prominent researchers, including Angus Deaton and James Heckman. The report has just been published as a book called “Mismeasuring Our Lives.”

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:

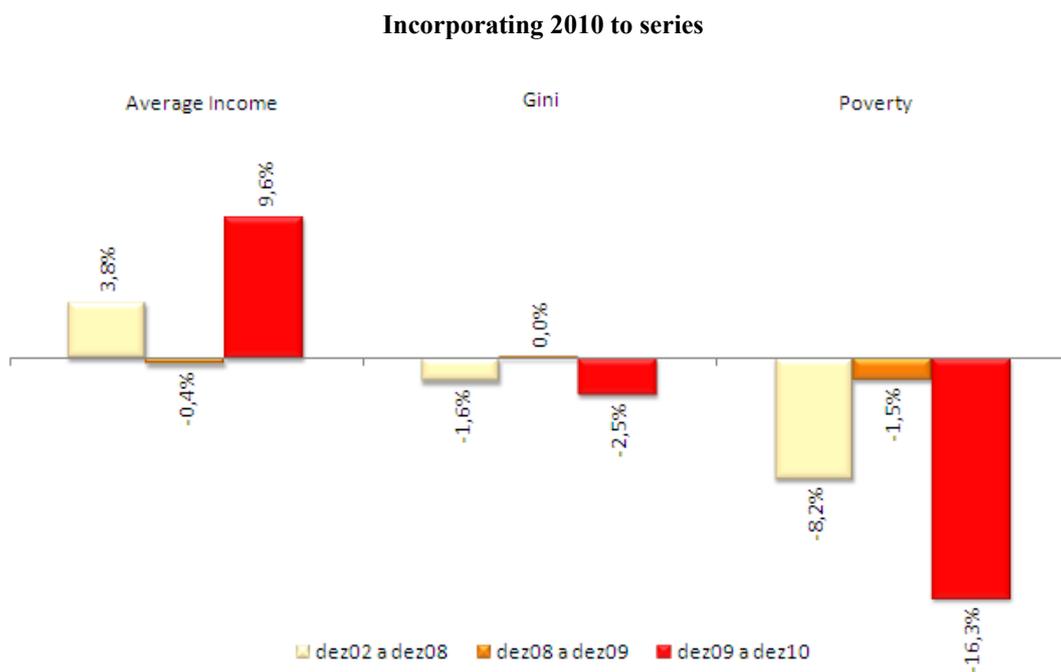
- Emphasize the income and consumption perspective of the household in order to better assess material living standards. This assessment is more precise to the extent that real per capita GDP does not necessarily reflect movements in real household income;
- Income, consumption and wealth measures must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

It is not our goal to discuss this report in depth, nor the criticism that may be voiced against it, but to apply its four main conclusions to the Brazilian case after the 2003 recession. Let's examine the situation:

- i) **GDP X PNAD** – The report warns that it is necessary to improve the current economic performance measures, based on the Gross Domestic Product (GDP). In particular, it emphasizes the income and household consumption approach to gauge average material lifestyle standards. In this context, it is important to remember that, although in the long-term the evolution of aggregates such as GDP of national accounts and income from the Brazilian National Household Survey (abbreviated PNAD in Portuguese) present similar tendencies, there is a strong detachment between 2003 and 2009, when PNAD's average income increased 11.3 percentage points more than GDP. According to the objective view of the people, their respective average lifestyle standards are improving more than GDP suggests. As the Sen-Stiglitz book points out, in most other countries the opposite has happened: their respective PNADs indicate a lower growth than the GDP's.

- ii) **Sustainability** – Consider asset inventories as, for example, incorporate environment attributes to consider the sustainability of performance indicators along time, i.e., if the current welfare levels can be maintained for the next generations. I will not discuss environment variables, which do not lie within my field, but the asset inventories collected by PNAD. We calculate, based on a wage equation and indicators of income generation potential, based on assets produced as human capital (education of all the members in a household) and its use (position in the occupation), capital stock (associative movement) and physical capital (computers, social security contributions and private pension plans, etc.). We also calculate, using the same method and metrics, consumption potential indexes (durable goods, housing, etc.). The former increased 38% more than the latter in the 2003-2009 period, which indicates the sustainability of lifestyle standards undertaken. In the 1990's, we saw the opposite: the consumption indicator increased more than the production capacity. Despite the importance of consumer credit growth and public social transfers, such as social security

benefits and the Family Grant ("Bolsa Família"), the growth in education and formal employment (although yet on very precarious levels) is comparably more relevant to explain the ongoing transformations, suggesting sustainability in the growth process. As mentioned by the Monthly Employment Survey, the growth of 9,6% in 2010 indicates that there is some sustainability in the recent period, although there are influences of the election cycle, according to graphics below.



- iii) **Inclusion** – Income, consumption and wealth measurements must be followed by indicators reflecting their distribution. In a country with Belindia (combination of Belgium and India) as a nickname, such considerations are essential, because averages hide more than they reveal. From 2003 to 2009, real per capita income growth, according to PNAD, was 69% for the 10% poorest people, and decreased monotonically as we approached the 10% wealthiest people, with 12.6%. That means the growth rate in the poorest bracket was 550% higher the growth of the wealthiest, which is what we call the spectacle of growth, but only for the poor, who have been experiencing Chinese growth rates. In developed countries like

the USA or England, or emerging countries like China and India, we can see the opposite: inequality is on the increase.

Annex II: Labor Decomposition Methodology

Many are the variables that characterize the labor performance, such as occupation, unemployment, wages, working journey and participation in the labor market, among others. A difficulty is the integration of these diverse components into one single framework. We are always comparing oranges with bananas. That is, measures based on different units such hours, with monetary units and fractions, etc. We follow here the literature of welfare using income as an integrating measure of social performance. We propose here a new methodology that maps out the impacts of the evolution of each one of the main labor ingredients in terms of the total income measured individually by young people. Since there is a dependence of young people on their families and vice-versa, a desirable extension is to integrate the measures in terms of household per capita income. That is, we have move from young individuals concept to that of families with young people. Another extension is to transcend the average and move on to the analysis of the distribution of labor ingredients among the different income strata. These two extensions will be pursued in another phase of the research.

Initially, we begin with the basic notion that the total income of the individual may be decomposed as the relationship between the total income and the income from work and in the magnitude of the income from work. This can be accomplished by multiplying and dividing the total income from work and arranging the terms conveniently, since the order will not affect the final result.

$$\boxed{\begin{array}{c} \text{Total} \\ \text{Income} \\ \text{(Individual)} \end{array}} = \boxed{\begin{array}{c} \text{Total Income/} \\ \text{Income from} \\ \text{work} \end{array}} * \boxed{\begin{array}{c} \text{Income from} \\ \text{work} \end{array}}$$

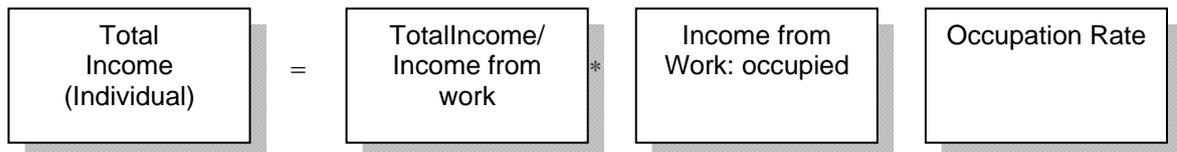
(INCOME ALL SOURCES OF INCOME / INCOME FROM ALL JOBS); the ratio between the total income and the income from work. It measures the relative importance of the salary in the composition of the total income of a person (the larger the indicator, the smaller the relative importance work and the larger that of other incomes, such as those from social programs, pensions and private transfers).

The first term captures the role of social safety nets from public policies and private transfers in leveraging the individual income from work.

The second term synthesizes the labor performance. Next, we go beyond and divide the income from work in two components: income from work of an occupied person (i.e. employees' wages) and the

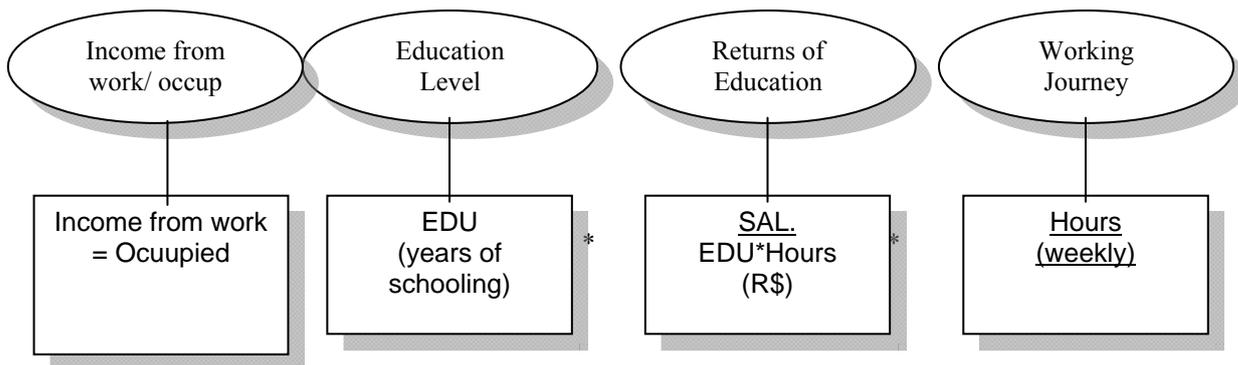
occupation rate, multiplying and dividing the terms by the number of occupied. We arrive at the main determinants of income proposed here.

O segundo termo sintetiza o desempenho trabalhista. A seguir damos um passo além e dividimos a renda do trabalho em dois componentes: renda trabalhista de quem está ocupado (i.e., salário dos empregados) e taxa de ocupação multiplicando e dividindo os termos pelo número de ocupados. Chegamos assim aos três principais determinantes da renda aqui propostos:



We work with the last two terms above separately:

Decomposition of the salary of those who are occupied:



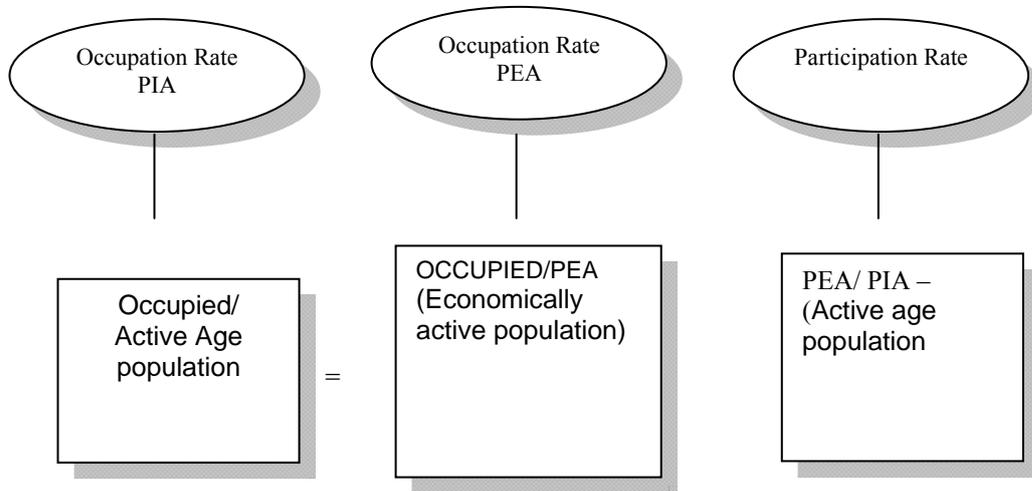
(SALARY / JOURNEY* EDUCATION): Razão between the salary hour (average pay for each worked hour) and average education (completed years of schooling) It measures the Premium on education in the job market. The bigger the indicator, the larger the capacity of the individual to transform in income each unit of the educational investment made in each worked hour. In a stagnated economy with a great supply of education, it tends to be low. This component would be in a competitive job market equivalent to the work productivity.

(EDUCATION LEVEL): Average of completed years of schooling. It gives the magnitude of the investment made in the human capital.

(WORKING JOURNEY): Average of the worked hours gives the extension of the effort.

This kind of distinction about what influences income is particularly relevant. For example, I bet that between a raise in the salary resulting from a double work load and others where the hours remain the same (hence, the hour-salary drops by half), the majority of people will prefer the first option. Similarly, to increase the income because the level of education has increased reflects the return of an investment in education. As we will see, the premium on education in Brazil has not only fallen because the supply in

the educational expansion has risen, accelerating since 1995, but it drops more than the supply, which is surprising to a certain level, reflecting the labor stagnation post-1997.



(NUMBER OF OCCUPIED / ECONOMICALLY ACTIVE POPULATION (PEA)): Occupation rate in the economically active population. It measures the success rate, that is, the probability of getting a job among the people who are economically active (occupied or unemployed), that is, actively participating in the job market. This concept corresponds to the complement of the classic definition of unemployment. For instance, if the occupation statistics is 75%, so the unemployment rate will be 25%, and so on.

(ECONOMICALLY ACTIVE POPULATION (PEA) / TOTAL POPULATION IN THE AGE GROUP): Job market participation rate. It measures the level of participation of the population, including those individuals that are carrying out some kind of job (occupied) and those who are not, but are looking for jobs (unemployed).

In this exercise, we decompose the income (including other non-labor sources) of the Young people in different pieces in order to analyze the impact of each component in the total. That is, it is possible to estimate the total income of the youth as a result of a group of factors (salary, education, return on education, occupation, participation in the job market, other sources of income like those from social programs). Each one of these factors has its own impact on the total income observed.

Scheme that groups the variables used (columns of the panorama):

