Inequality Evolution in Brazil: the Role of Cash Transfer Programs and Other Income Sources

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Abstract

This article provides a detailed analysis of the recent evolution (1993-2005) of Brazilian income inequality. Particularly, we assess the contribution of different income sources to inequality, using three different decomposition techniques: Shorrocks (1982), Lerman and Yitzhaki (1985) and Gini decomposition. We also exploit a recent data set (PNAD, 2004) that allows the identification of different governmental transfer programs (*Bolsa-Família*, *PETI* and *BPC*) and their impacts into inequality. The results show that private labor income is the most important factor driving inequality changes in Brazil and that social transfer programs have a limited, but positive impact to reduce inequality. On the other hand, dynamics of retirement rents and public servant wages act in order to attenuate the recent path of decreasing inequality in Brazil.

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1. Introduction

Brazil is one of the most unequal countries in the world, occupying the 119th position among 127 countries in 1998. However, since 2001, there is a slightly drop in inequality rate in Brazil and a more strong fall in poverty.

Many aspects can be responsible for this recent movement. For example, in recent years, Brazilian government is increasingly spending budget resources in cash conditional transfer (CCT) programs in order to alleviate poverty and inequality. But labor market dynamics can also have some role, as more than 60% of household income comes from labor market.

Concerning governmental actions, however, different policies can have opposite effects on inequality. If CCT programs contribute to reduce inequality, the same is not true regarding wages of public servants or the retirement system in Brazil. (Ferreira and Souza, 2004; Hoffmann, 2003). So, in order to improve the knowledge about the sources of recent trends in inequality, this paper will decompose inequality measures according to income sources (private workers wages, house rents, CCT programs, retirement, pensions, public servants wages) using three different techniques.

The main contribution of the paper is to identify which factors are contributing to decrease inequality and which operates in an opposite way. Two aspects of social policy turn Brazilian case into an interesting one. First, since 2001, there is a continuous growth in CCT in Brazil and in 2008, more than 11 million of households benefits from *Bolsa-Família*, one of the largest CCT in the world. So, it is important to verify if one of the aims of the program - falling inequality - is being reached. Second, Brazil is suffering a process of ageing of population that is increasing the weight of retirement and pensions in the public budget and probably has a "desiqualizing" effect.

The paper is divided into 5 sections. Next, we present a short bibliographic revision concerning income inequality decomposition in Brazil. Section 3 discusses the decomposition

methodologies and data. The next section presents results and finally, concluding remarks are discussed.

2. Literature revision: what income source explains Brazilian inequality?

The literature concerning Brazilian inequality is vast and has grown in last years. So, here we focus in papers that specifically decompose inequality according to income sources. Hoffmann (2003) studies the contribution of different income sources to per capita household income inequality in 1999, decomposing Gini index. The author concludes that pension and retirement income both contribute to increase Brazilian inequality, especially in metropolitan areas. Ferreira and Souza (2004) adopt the same approach of Hoffmann (2003) and concludes that for specific Brazilian regions (*Paraná* State), the contribution of pensions and retirement to inequality is not significant, while the result is opposite for Brazil as a whole.

Adopting a different division of income sources and decomposing Mehran, Piesch and Coefficient of Variation, Hoffmann (2004) confirms the results of importance of retirement and pension income to inequality.

Soares (2006) decomposes the inequality in Brazil between 2001 and 2004 and concludes that ¾ of the recent drop in inequality rates is due to the behavior of labor market, as the labor income becomes less concentrated. Social programs as *Bolsa-Família* also play an important role in this process.

Barros et al. (2006) studies the role of non-labor income, especially of two programs: *Bolsa-Família* and *Benefício de Prestação Continuada* (BPC) and concludes that they are responsible for about half of the recent inequality fall in Brazil. Soares et al. (2006) decomposes Gini index and concludes that between 1995 and 2004, BPC is responsible for 7% of the reduction in inequality.

This paper is innovative in many ways in Brazilian study of inequality. First, we implement a very detailed decomposition of income sources, incorporating another important social program in Brazil: PETI (*Programa de Erradicação do Trabalho Infantil*) whose aim is to eliminate child labor. Second, we divide labor income in three components: private sector

wages, public servants wages and military wages. This is relevant in Brazilian case as there is anecdotic evidence that inequality is larger among public servants than among private sector workers. Third, we assess inequality decomposition using Generalized Entropy measure with index -1. As this measure is very sensitive to changes in the inferior tail of income distribution, it is particularly interesting to capture the effect of CCT in Brazilian case. Finally, we implement the Lerman and Yitzhaki (1985) methodology that, as far as we know, has not been yet implemented in the Brazilian case.

3 Data and Methodology

In this paper, we measure inequality of *per capita* household income and acting in this way we neglect any income disparity inside family. We also ignore scale economies in household consumption, giving the same weight to all family members, although previous paper (Castro and Scorzafave, 2005) shows no significant differences in evolution of inequality when scale economies are considered in Brazilian case.

3.1 Cash Transfer Programs in Brazil: *Bolsa-Família*, PETI e BPC

We will quickly describe the main characteristics of three important social programs in Brazil. Operating since September, 2004 in Brazil, *Bolsa-Família* consolidates already existing social programs (*Bolsa Escola*, *Bolsa Alimentação*, *Auxílio Gás* and *Cartão Alimentação*). The program has the following design: very poor families, with household *per capita* income up to R$50.00 per month in 2004 (about US$20.00) received R$50.00 per month. The families with per capita income between R$50.00 and R$100.00 per month received R$15.00 per child, up to 3 children. So, the transfers varied between R$15.00 and R$95.00 in 2004.

Another important social program in Brazil is *Benefício de Prestação Continuada* (BPC). It is a minimum wage benefit (R$260.00, in 2004) received by people with 65 or more years and deficient people with per capita familiar income of ¼ of minimum wage. BPC stars in 1996 and cannot be (officially) received together with other social programs, as *Bolsa-Família*.

Finally, we have *Programa de Erradicação do Trabalho Infantil* (PETI) that aims to eliminate child labor in Brazil. The program covers children between 7 and 15 years old with per capita income below half minimum wage. In 2004, the benefit varies between R$20.00 and R$40.00 per child, depending on the city size. In 2006, PETI was incorporated into the *Bolsa-Família* program.

3.2 Data

The data used in this paper is from *Pesquisa Nacional por Amostra de Domicílios* (PNAD), covering the following years: 1993, 1995, 1997, 1999, 2001, 2002, 2003, 2004 and 2005. Since 2004, PNAD covers the rural area of North region. To keep comparability overt time, we exclude data from this region in 2004 and 2005. Although covering nine surveys, we study carefully 2004, because this year brings supplementary information concerning cash transfer programs.

PNAD reports different income sources for each household. In particular way, the variable "other incomes", a residual one, encompass the government transfers. For 2004, we decompose this variable into four (*Bolsa-Família*, PETI e BPC, other).

The variable *Bolsa-Família* was created for everyone that reported to receive any kind of governmental transfer other than PETI and BPC, including programs as *Bolsa Escola*, *Auxílio-Gás* and *Cartão Alimentação*. In these cases, we keep the declared values. For those families that declared receiving *Bolsa-Família*, but do not declares the received value, we have imputed the program values, according to income and number of children of the household.

The labor income was disaggregated because there is evidence that public servants and military wages have a distinct distribution if compared with private sector workers and Belluzzo et al. (2005) show that there is a substantial wage differential between public and private workers in Brazil.

3.3 Methodology

In this section, we will present three inequality decomposition techniques by income sources that we have applied to Brazilian data: Shorrocks (1982), Gini decomposition and Lerman and Yitzhaki (1985).

3.3.1. Shorrocks (1982)

Shorrocks (1982) is one of the most important contributions in the field of inequality decomposition by income sources. He notes that "alternative decompositions are available because the functional representation used by any inequality index is not uniquely determined" (Shorrocks, 1982, p. 208). He shows that the contribution of any factor (as proportion of total inequality) can take any value depending on the chosen method. To solve this problem, the author assumes some restrictions. Following Shorrocks (1982), let Y_i^k be individual income $(i = 1, \mathrm{K}, n)$ of source $k (k = 1, \mathrm{K}, K)$ and let $Y = (Y_1, \mathrm{K}, Y_n) = \sum_k Y^k$ be the distribution of total income, whose variance is:

$$(1) \quad \sigma^2(Y) = \sum_k \sigma^2(Y^k) + \sum_{j \neq k} \sum_k \rho_{jk} \sigma(Y^j) \sigma(Y^k)$$

that ρ_{jk} is the correlation coefficient between Y^j and Y^k. Assuming that the different kinds of incomes are not correlated:

$$(2) \quad \sigma^2(Y) = \sum_k \sigma^2(Y^k)$$

Shorrocks (1982) assumes that $I(Y)$ is continuous and symmetric and that $I(Y) = 0$ if and only if $Y = \mu e$, where $e = (1, 1, \mathrm{K}, 1)$.

If *K* disjoint and exhaustive income sources could be identified, the contribution of factor *k* to total inequality can be represented by $S_k(Y^1, \mathrm{K}, Y^K; K)$, that is continuous in Y^k. He also assumes symmetry of factors, that contribution of factor *k* should be independent of the disaggregation level of total income. He also assumes consistency:

$$(3) \sum_k S_k \left(Y^1, \mathrm{K}, Y^K; K \right) = \sum S\left(Y^k, Y \right) = I(Y)$$

Finally, he assumes that $S(\mu_k e, Y) = 0$ for every μ_k and two factor symmetry: $S(Y_1, Y_1 + Y_1 P) = S(Y_1, Y_1 + Y_1 P)$, for every permutation matrices P. Assuming this properties, s_k is the relative contribution of factor k to income inequality:

$$(4) \; s_k(I) = \frac{S(Y_k, Y)}{I(Y)} = \frac{\mathrm{cov}(Y_k, Y)}{\sigma^2(Y)} \text{ for every } Y \neq \mu e$$

or:

$$(4') \; s_k = \frac{\mathrm{cov}(Y_k, Y)}{\sigma^2(Y)}$$

3.3.2. Gini decomposition

Following Hoffmann (2004), let $Y_0 = \left(Y_{01}, Y_{02}, \mathrm{K}, Y_{0n} \right)$ denotes the income distribution of a population with n families and $Y_K = \left(Y_{K1}, Y_{K2}, \mathrm{K}, Y_{Kn} \right)$ be the distribution of source K income. So, if $Y_{K1} \leq Y_{K2} \leq \mathrm{K} \leq Y_{Kn}$, the Gini coefficient can be written as:

$$(5) \, G = \sum_i a_i (Y_0) Y_{0i}$$

so that $a_i(Y_0) = a_i(Y_0; G) = \frac{2}{n^2 \mu}\left(i - \frac{n+1}{2} \right)$ is the weight associated with Y_0. Changing Y_{0i} for $\sum Y_{ki}$, we obtain:

$$(6) \, G = \sum_k S_k \sum_i \frac{2}{n^2 \mu_k}\left(i - \frac{n+1}{2} \right) Y_{ki} = \sum_k S_k \overline{G}_k = \sum_k S_k R_k G_k$$

where R_k is the "Gini correlation" between source k and total income, with $0 \leq R \leq 1$; G_k is the Gini concerning the source k and S_k represents the share of source k in total income. We can also define the concentration ratio of source k as:

$$(7)\, C_k = R_k G_k$$

We can define the contribution of factor k to income inequality as:

$$(8)\, s_k = \frac{S_k R_k G_k}{G}$$

If $C_k > G$, the income source k contributes to raise inequality.

3.3.3. Lerman and Yitzhaki (1985)

Following Lerman and Yitzhaki (1985), we can assess the impact on to inequality of a variation bY_k in source k, where b approaches to 1. According to equation (6), we can write:

$$(9)\, \frac{\partial G}{\partial b_k} = S_k \left(R_k G_k - G \right)$$

This approach is indicated to understand the effect of marginal changes in each income source in total inequality. In our paper, for example, we assess the impact of a marginal increase in the benefit paid by *Bolsa-Família* on inequality. This is important because in practice, we show modest changes in each source in short run and it is interesting to have a method that permits to analyze the importance of these changes.

4 Results

The results concerning inequality evolution confirm previous findings of literature that point to a decrease in Brazilian inequality, especially since 2001, as Figure 1 shows. This fact is reflected not only in Gini, but also in Generalized Entropy measures.

Figure 1 – Income inequality measures – 1993-2005
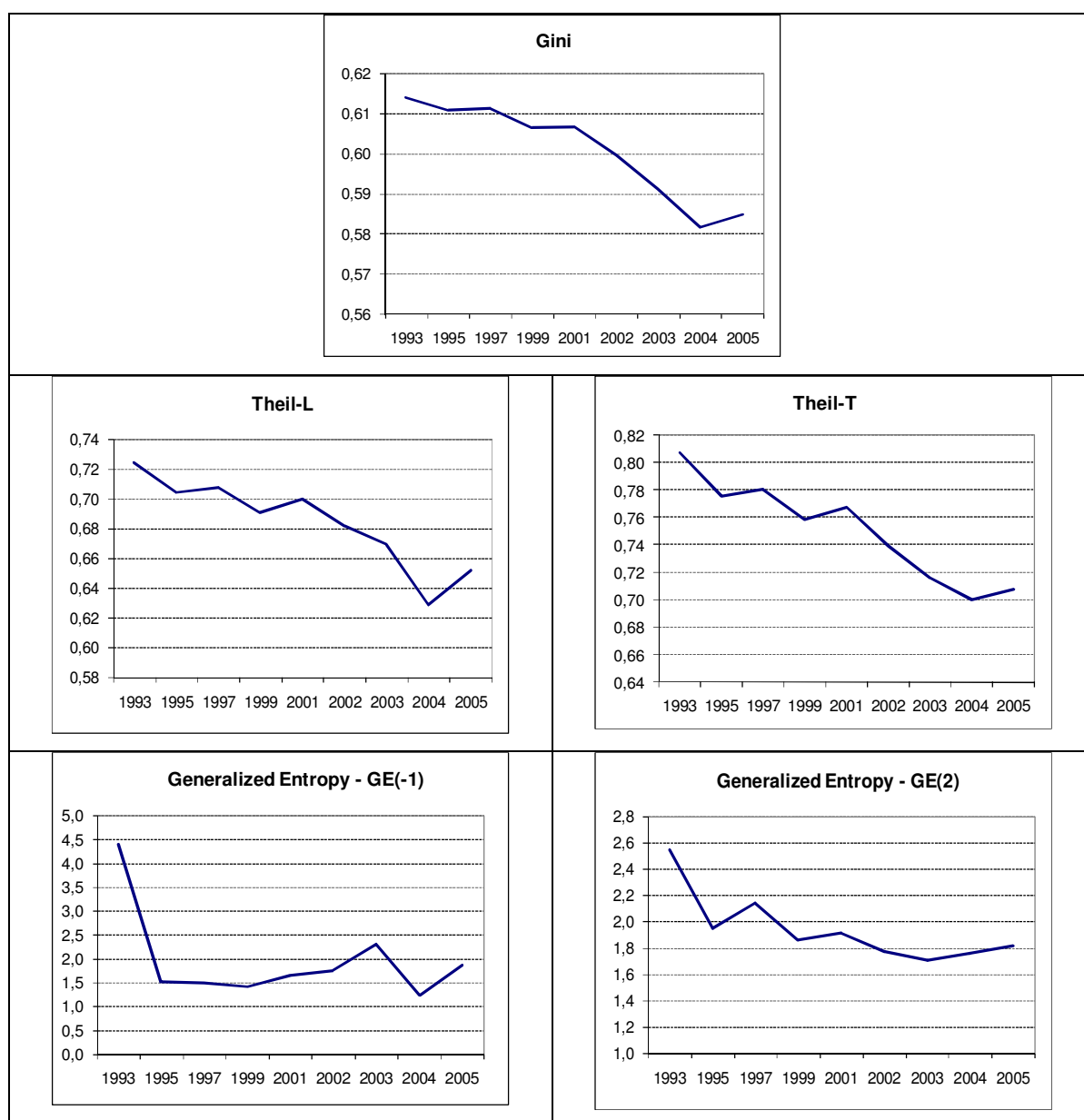
It is interesting to note that GE(-1), very sensitive to income variations in the lower tail of distribution, shows two moments of inequality fall. The first one is between 1993 and 1995, probably because the poorer are benefited by *Plano Real*, the successful inflation stabilization plan in 1994. The second moment is 2004, and in the next sections we will investigate this year carefully.

4.1 Income inequality decompositions: 1993-2005

In this section we show the results of decomposition techniques. Figure 2 shows the Shorrocks (1982) decomposition for Brazilian per capita household income between 1993 and 2005.

Figure 2 – Shorrocks Decomposition by Income Sources - 1993-2005
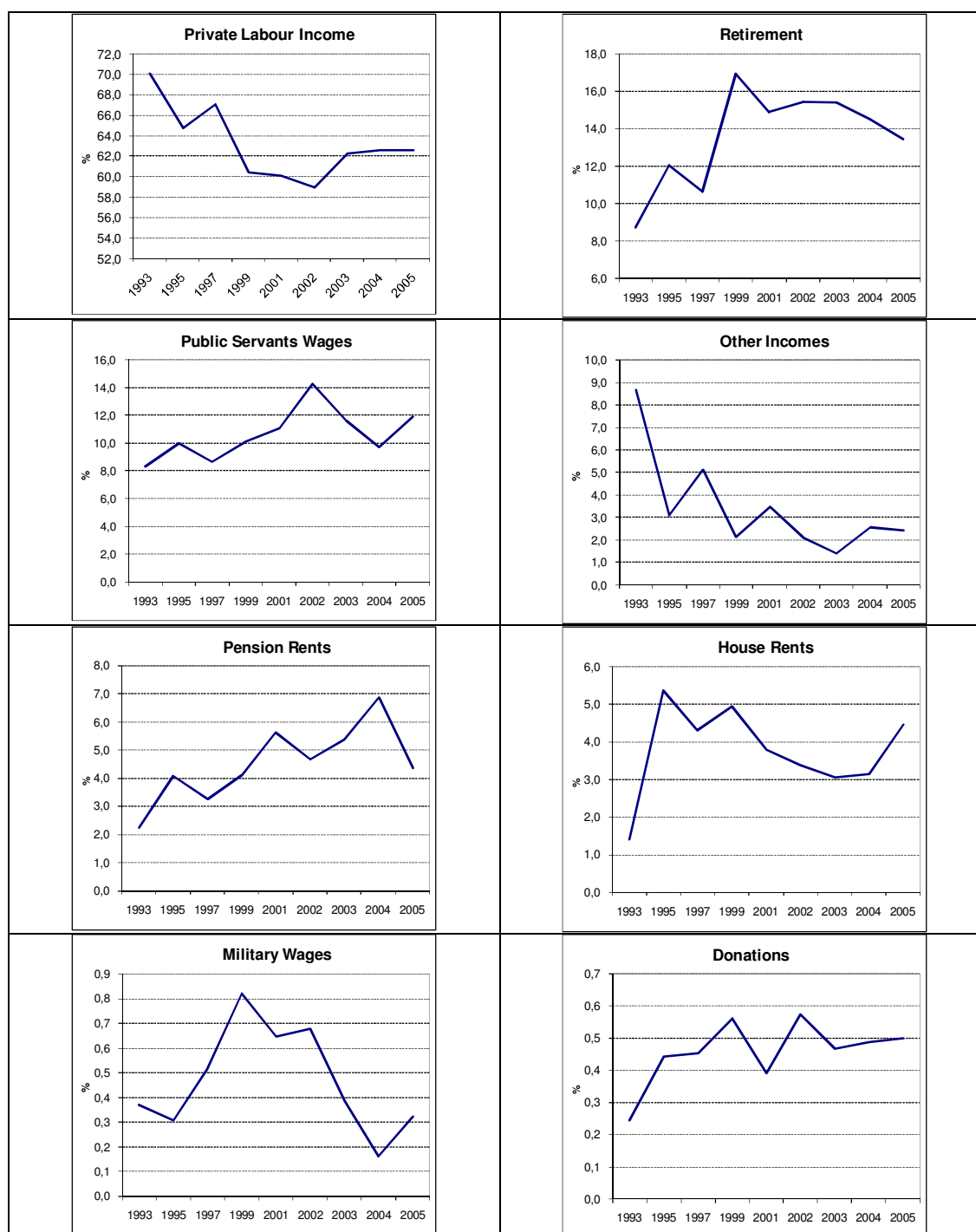
The results show that labor income is the main factor contributing to inequality, as more than 60% of inequality comes from this factor. However, its contribution shows a decreasing path over time. Retirement rents (9 e 15%) and public servants wages (8 a 14%) also contributes importantly to inequality. These two factors, together with pension rents are becoming more important over time in order to explain inequality in Brazil.

The Gini decomposition confirms results of Shorrocks (1982) one. Once again, private labor income contributes to near 60%of inequality, but its importance to inequality is decreasing over time. The path for retirement and pension is less clear in this case, but public servants wages keep its tendency of growth. It is interesting that "other incomes" shows an increasing importance after 2003, probably due to cash transfer programs of Brazilian government.

Gini decompositions permit to understand which factors most contributes to inequality. So, if concentration ratio of factor k is higher than Gini, this factor contributes to increase inequality. Results shows that private labor income is contributing to decrease inequality (in Table A3, $C_k > G$), while retirements, pensions and public servants wages are behaving in opposite way.

Figure 3 – Gini Decomposition – 1993-2005
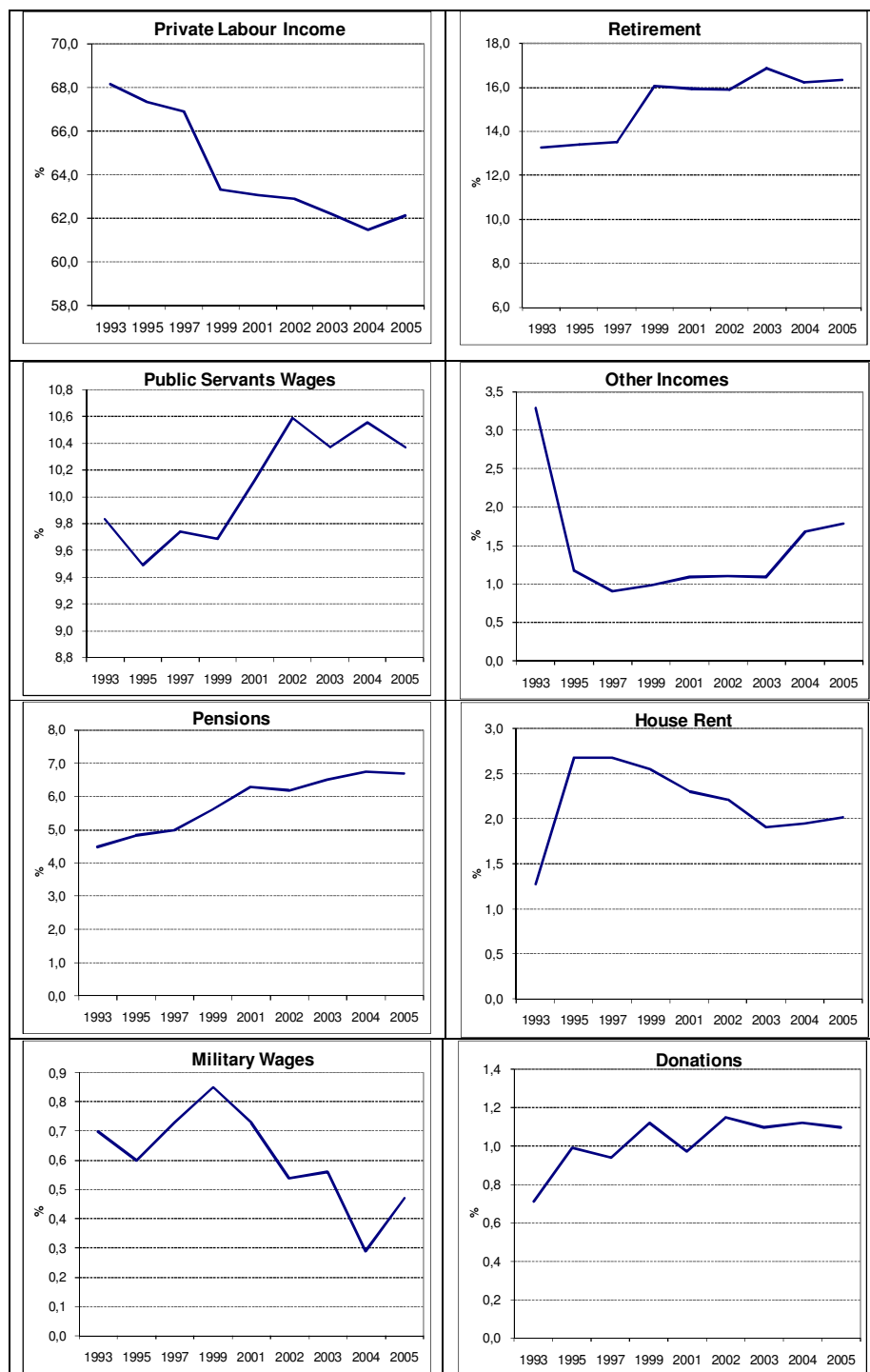
Now, we show the results of Lerman and Yitzhaki (1985) decomposition to assess the impact of a marginal increase of each income source on inequality. Inequality remains practically the

same when the income sources changes marginally. For example, if each private worker receives a 1% higher wage in 1995, inequality would fall only 0,025%. Although very small, bootstrap standard deviations show that they are statistically significant, in general, with few exceptions.

But the results of this methodology are interesting also because they give a sign about the direction of each factor in the contribution to inequality. Private labor income has a growing contribution to decrease inequality over time. N the other hand, retirement rents, that contributes to reduce inequality up to 1997, act in opposite way since then. Pensions and donations both contribute to decrease inequality.

Finally, "other incomes" also changes its behavior, turning to a contribution to decrease inequality provoked by the cash transfer governmental programs.
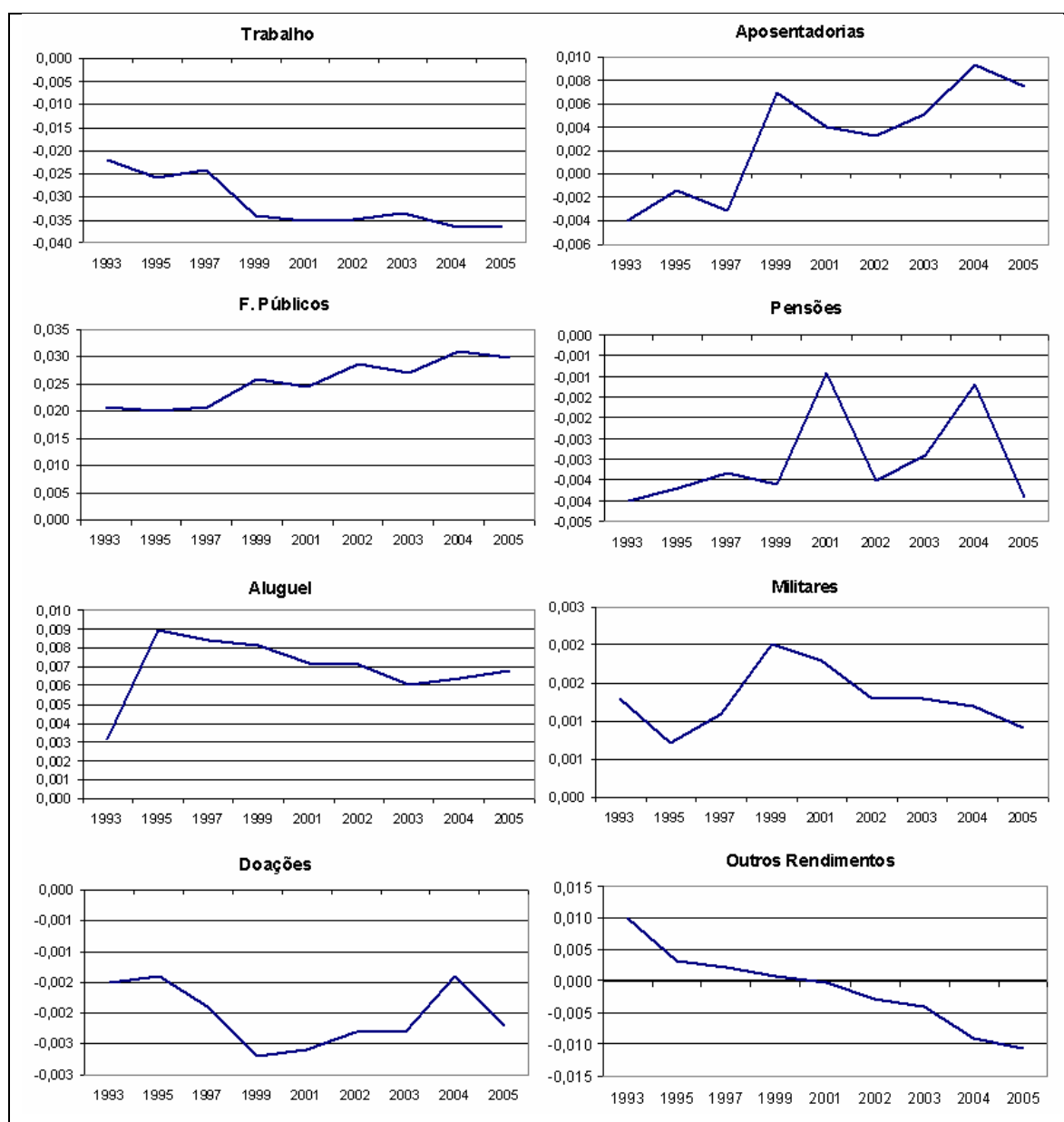
Figure 4 – Lerman and Yitzhaki Decomposition (1985)

4.2 Cash transfer programs and inequality; a detailed analysis for 2004

As mentioned before, PNAD 2004 has a supplement that permit to assess the impact of different governmental programs on inequality. So, here we will investigate which programs are most important to reduce (or increase) inequality in Brazil.

4.2.1 Descriptive Statistics

Initially, we calculate some descriptive statistics concerning the different income sources. As we can see below, military and public servants have higher mean wages than other workers. It is also interesting t note that about 7 million people received *Bolsa-Família* and one million people received PETI or BPC. Finally, BPC is the most generous program, paying the highest per capita benefit (R$96.63 per month).

Table 1 - Descriptive Statistics

Income source	Observations	Mean	Std. Dev.	Minimum	Maximum
Labor Income	42.044.617	373.48	776.03	0.16	61.250
Donations	1.694.452	158.34	332.56	1	5.000
Pensions	7.479.976	236.53	557.61	1.2	19.000
Retirement	12.434.050	332.50	617.58	8.89	24.288
House Rent	2.056.465	251.68	559.18	2.5	10.500
Other sources	2.349.895	108.68	506.01	0.14	15.000
Military	243.793	449.27	633.17	14	6.400
Public Servants	4.767.182	481.65	793.03	6.67	16.000
Bolsa-Família	6.999.669	10.81	9.94	0.14	130
PETI	358.733	12.94	6.03	2.08	32
BPC	738.517	96.63	67.48	20	260

In a simple procedure to assess the impact of governmental programs on inequality, we compared inequality indicators using two concepts of income: one that excludes governmental transfers (*Bolsa Família. PETI* e *BPC*) from per capita household income and other that deal with observed data, both in 2004.

Table 2 - Per Capita Household Income Inequality – 2004

Inequality Measures	Without transfers	Observed
Gini	0,584	0,581
Theil-T - GE(1)	0,703	0,696
Theil-L - GE(0)	0,640	0,626
GE(-1)	1,276	1,226
GE(2)	1,753	1,742

Obs.: GE = Generalized Entropy

Gini is 0,5% higher if we exclude income transfer and the results are similar for Theil-T (1%) and for GE(2) (0,6%). GE(-1) has a different behavior (3,9%), yet expected because this indicator gives more weight to income variations in the bottom part of income distribution and the beneficiaries of cash transfer programs are concentrated in this part of the distribution. So, although the money quantity of this program is small relative to other income sources, they contribute to reduce inequality.

4.2.2 Decomposition Results

To assess the impacts of different sources of income in inequality, we apply the three decomposition methods already discussed. Now, we can disaggregate the effect of different social transfer programs in inequality.

According to Shorrocks (1982) decomposition, all programs have a small impact on inequality because the total amount of resources is a very small fraction of total income of society. It is interesting to note that retirement (15,48%), public servants wages (12,24%) and pensions (5,97%) have important impact on inequality.

Table 3 – Inequality Decomposition by Income Sources - Shorrocks (1982) - 2004

Source	Contribution
Labor Income	59,99
Donations	0,54
Pensions	5,97
Retirement	15,48
House Rent	3,02
Other Income	2,48
Military Wages	0,40
Public Servants	12,24
B. Família	-0,07
PETI	-0,01
BPC	-0,04
Total	100,0

Next, we present results concerning Gini decomposition and Lerman and Yitzhaki (1985).

Table 4 – Inequality Decomposition by Income Sources - Gini -2004

Source	S_k	G_k	R_k	C_k
Labor Income	0,611	0,663	0,824	0,546
Donations	0,011	0,989	0,512	0,507
Pensions	0,068	0,943	0,605	0,570
Retirement	0,162	0,901	0,682	0,614
House Rent	0,020	0,985	0,781	0,769
Other Income	0,010	0,991	0,676	0,669
Military Wages	0,005	0,998	0,717	0,715
Public Servants	0,106	0,958	0,783	0,750
B. Família	*0,003*	*0,920*	*-0,651*	*-0,599*
PETI	0,000	0,994	-0,608	-0,605
BPC	0,003	0,990	-0,077	-0,076
Total				

Obs.: Gini = 0,584

According to Gini decomposition, labor income, donations, pensions and especially, cash transfer programs (*Bolsa Família*, PETI e BPC) contribute to *decrease* income inequality. On the other hand, retirement, house rents and public servant wages increases income inequality.

Table 5 – Inequality Decomposition by Income Sources - Lerman e Yitzhaki (1985) - 2004

Source	Change (%)
Labor Income	-0,036
Donations	-0,001
Pensions	-0,001
Retirement	0,009
House Rent	0,006
Other Income	0,002
Military Wages	0,001
Public Servants	0,031
Bolsa-Família	-0,007
PETI	0,000
BPC	-0,004

Not only the cash transfer programs contribute to decrease inequality, but also labor income, donations and pensions act in same way. However, the magnitude of impacts is modest. For example, an increase in labor income of 1% decreases Gini in 0,036%. The impact of governmental programs is still smaller.

5. Concluding Remarks

In this paper, we assess the effect of different income sources into income inequality. The most important factor explaining the decrease in inequality is the behavior of private sector labor wages inequality. On the other hand, the governmental programs have a limited effect in inequality, although we find evidences that these policies benefit the bottom part of income distribution.

In a opposite direction, independent of the method used, the retirement income are contributing to attenuate the falling income inequality in Brazil, confirming previous findings of Hoffmann

(2003) and Ferreira and Souza (2004). With the ageing of population, retirement and pensions are becoming important sources of familiar income. So, government should worry about the inequality of this kind of income. The same recommendation is valid for public servants income that is increasingly contributing to inequality.

So, in order to keep the path of reducing inequality in Brazil, some practices should be implemented. Government should improve the efficiency of conditional cash transfer programs, particularly its focalization and the fiscalization of condicionalities. Investments in the public education system certainly will contribute to consolidate the decreasing path of labor income inequality.

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APENDIX

A. Inequality Measures

	1993	1995	1997	1999	2001	2002	2003	2004	2005
Gini	0,614	0,611	0,611	0,606	0,607	0,600	0,591	0,581	0,5840
Theil-T - GE(1)	0,808	0,776	0,781	0,759	0,768	0,739	0,716	0,696	0,7049
Theil-L - GE(0)	0,724	0,704	0,707	0,690	0,700	0,681	0,669	0,626	0,6489
GE(-1)	4,393	1,516	1,487	1,412	1,643	1,745	2,294	1,226	1,8395
GE(2)	2,543	1,946	2,139	1,858	1,912	1,769	1,702	1,742	1,7981

B. Decomposition Results

	Shorrocks (1982)								
	1993	1995	1997	1999	2001	2002	2003	2004	2005
Labor Income	70,012	64,694	67,030	60,379	60,111	58,922	62,256	59,987	62,551
Donations	0,245	0,442	0,451	0,562	0,389	0,573	0,466	0,543	0,498
Pensions	2,253	4,093	3,280	4,107	5,633	4,678	5,400	5,969	4,374
Retirement	8,720	12,041	10,645	16,941	14,881	15,417	15,372	15,477	13,438
House Rent	1,414	5,367	4,301	4,944	3,806	3,390	3,073	3,021	4,475
Military	0,370	0,308	0,514	0,820	0,647	0,679	0,386	0,396	0,322
Public Servants	8,318	9,972	8,639	10,121	11,051	14,244	11,640	12,245	11,898
Other Incomes	8,668	3,082	5,142	2,126	3,483	2,096	1,407	2,363	2,445
B. Família								-0,068	
PETI								-0,004	
BPC								-0,040	
Other								2,476	

	Gini								
	1993	1995	1997	1999	2001	2002	2003	2004	2005
Labor Income	68,160	67,350	66,880	63,290	63,050	62,870	62,190	59,987	62,551
Donations	0,710	0,990	0,940	1,120	0,970	1,150	1,100	0,543	0,498
Pensions	4,480	4,820	4,980	5,610	6,300	6,180	6,510	5,969	4,374
Retirement	13,240	13,370	13,500	16,060	15,940	15,870	16,840	15,477	13,438
House Rent	1,280	2,680	2,680	2,550	2,310	2,220	1,910	3,021	4,475
Military	0,700	0,600	0,730	0,850	0,730	0,540	0,560	0,396	0,322
Public Servants	9,830	9,490	9,740	9,690	10,120	10,590	10,370	12,245	11,898
Other Incomes	3,290	1,170	0,900	0,980	1,080	1,100	1,090	1,680	2,445
B. Família								-0,068	
PETI								-0,004	
BPC								-0,040	
Other								2,476	

	Lerman and Yitzhaki (1985)								
	1993	**1995**	**1997**	**1999**	**2001**	**2002**	**2003**	**2004**	**2005**
Labor Income	-0,022	-0,0258	-0,0243	-0,0343	-0,0351	-0,0349	-0,0337	-0,036	-0,0367
Donations	-0,002	-0,0014	-0,0019	-0,0027	-0,0026	-0,0023	-0,0023	-0,001	-0,0022
Pensions	-0,004	-0,0037	-0,0033	-0,0036	-0,0009	-0,0035	-0,0029	-0,001	-0,0039
Retirement		-0,0014	-0,0031	0,0069	0,0041	0,0032	0,0051	0,009	0,0074
House Rent	0,003	0,0089	0,0084	0,0081	0,0072	0,0071	0,006	0,006	0,0068
Military	0,010	0,0031	0,0023	0,0008	-0,0002	-0,0028	-0,0039	0,001	-0,0106
Public Servants		0,0007	0,0011	0,002	0,0018	0,0013	0,0013	0,031	0,0009
Other Incomes		0,0200	0,0209	0,0257	0,0243	0,0287	0,0269	-0,009	0,0299
B. Família								**-0,007**	
PETI								**0,000**	
BPC								**-0,004**	
Other								**0,002**	

C. Gini Decomposition

1993				
Source	**Sk**	**Gk**	**Rk**	**Ck**
Labor Income	0,682	0,680	0,874	0,594
Donations	0,007	0,993	0,488	0,485
Pensions	0,045	0,957	0,584	0,559
Retirement	0,132	0,913	0,652	0,595
House Rent	0,013	0,988	0,775	0,766
Military	0,007	0,997	0,732	0,730
Public Servants	0,098	0,960	0,776	0,745
Other	0,033	0,987	0,814	0,803
Total Income	|0,6140			

1995				
Source	**Sk**	**Gk**	**Rk**	**Ck**
Labor Income	0,674	0,674	0,872	0,587
Donations	0,010	0,991	0,527	0,522
Pensions	0,048	0,954	0,591	0,564
Retirement	0,134	0,914	0,661	0,604
House Rent	0,027	0,985	0,826	0,814
Military	0,006	0,997	0,688	0,686
Public Servants	0,095	0,958	0,772	0,739
Other	0,012	0,991	0,777	0,770
Total Income	|0,6109			

1997				
Source	**Sk**	**Gk**	**Rk**	**Ck**
Labor Income	0,669	0,676	0,871	0,589
Donations	0,009	0,990	0,496	0,491
Pensions	0,050	0,954	0,598	0,570
Retirement	0,135	0,909	0,657	0,597
House Rent	0,027	0,985	0,815	0,803
Military	0,007	0,996	0,703	0,700
Public Servants	0,097	0,958	0,775	0,742
Other	0,009	0,994	0,774	0,769
Total Income	|0,6114			

1999				
Source	**Sk**	**Gk**	**Rk**	**Ck**
Labor Income	0,633	0,675	0,850	0,574
Donations	0,011	0,988	0,466	0,461
Pensions	0,056	0,950	0,598	0,568
Retirement	0,161	0,908	0,697	0,632
House Rent	0,026	0,985	0,810	0,798
Military	0,009	0,997	0,751	0,749
Public Servants	0,097	0,989	0,776	0,767
Other	0,010	0,991	0,662	0,656
Total Income	|0,6064			

2001					2002				
Source	**Sk**	**Gk**	**Rk**	**Ck**	**Source**	**Sk**	**Gk**	**Rk**	**Ck**
Labor Income	0,631	0,677	0,847	0,573	**Labor Income**	0,629	0,671	0,844	0,566
Donations	0,010	0,989	0,448	0,442	**Donations**	0,012	0,988	0,483	0,477
Pensions	0,063	0,950	0,629	0,598	**Pensions**	0,062	0,944	0,599	0,565
Retirement	0,159	0,905	0,688	0,622	**Retirement**	0,159	0,901	0,679	0,612
House Rent	0,023	0,986	0,808	0,797	**House Rent**	0,022	0,985	0,804	0,792
Military	0,007	0,997	0,761	0,759	**Military**	0,005	0,998	0,745	0,743
Public Servants	0,101	0,960	0,784	0,752	**Public Servants**	0,106	0,960	0,794	0,762
Other	0,011	0,988	0,600	0,593	**Other**	0,011	0,979	0,458	0,449
Total Income		0,607			**Total Income**	0,600			

2003					2004				
Source	**Sk**	**Gk**	**Rk**	**Ck**	**Source**	**Sk**	**Gk**	**Rk**	**Ck**
Labor Income	0,622	0,672	0,833	0,559	**Labor Income**	0,611	0,663	0,824	0,546
Donations	0,011	0,988	0,471	0,466	**Donations**	0,011	0,989	0,512	0,507
Pensions	0,065	0,944	0,599	0,565	**Pensions**	0,068	0,943	0,605	0,570
Retirement	0,168	0,896	0,680	0,609	**Retirement**	0,162	0,901	0,682	0,614
House Rent	0,019	0,986	0,787	0,776	**House Rent**	0,020	0,985	0,781	0,769
Military	0,006	0,998	0,725	0,723	**Military**	0,005	0,998	0,717	0,715
Public Servants	0,104	0,958	0,778	0,745	**Public Servants**	0,106	0,958	0,783	0,750
Other	0,011	0,973	0,389	0,379	*Bolsa Família*	0,003	0,920	-0,651	-0,599
Total Income		0,591			**PETI**	0,000	0,994	-0,608	-0,605
					BPC	0,003	0,990	-0,077	-0,076
					Other	0,010	0,991	0,676	0,669
					Total Income	0,581			

2005				
Source	**Sk**	**Gk**	**Rk**	**Ck**
Labor Income	0,620	0,664	0,828	0,549
Donations	0,011	0,988	0,474	0,469
Pensions	0,067	0,938	0,587	0,550
Retirement	0,163	0,897	0,681	0,610
House Rent	0,020	0,985	0,790	0,778
Military	0,005	0,998	0,695	0,694
Public Servants	0,104	0,959	0,784	0,751
Other	0,018	0,959	0,243	0,233
Total Income	0,584			