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Accounting for the decline in earnings inequality in Brazil, 1995–2012

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Abstract

The Gini coefficient of labor earnings in Brazil fell by nearly a fifth between 1995 and 2012, from 0.50 to 0.41. The decline in earnings inequality was even larger by other measures, with the 90–10 percentile ratio falling by almost 40 percent. Although the conventional explanation of a falling education premium did play a role, an RIF regression-based decomposition analysis suggests that the decline in returns to potential experience was the main factor behind lower wage disparities during the period. Substantial reductions in the gender, race, informality and urban-rural wage gaps, conditional on human capital and institutional variables, also contributed to the decline. Although rising minimum wages were equalizing during 2003–2012, they had the opposite effects during 1995–2003, because of declining compliance. Over the entire period, the direct effect of minimum wages on inequality was muted.

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Accounting for the decline in earnings inequality in Brazil, 1995-2012

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1. Introduction

Rising income inequality has recently attracted a great deal of attention in both academic and policy circles. Best-selling books by Piketty (2014) and Stiglitz (2012) have described pronounced increases in inequality in advanced economies, and discussed their myriad social costs. The sustained rise in wage and income inequality in the United States since 1980 has attracted particular attention, with a long and distinguished literature documenting it and debating the relative importance of various contributing factors. Changes in relative skill supplies have been central to the debate, as they can affect the structure of earnings directly through composition effects (Lemieux, 2006) or indirectly through changes in the schooling and experience premiums (Katz and Murphy, 1992; Card and Lemieux, 2001). Changes in technology, subsumed under the rubric of skill-biased technical change, have long been thought to affect the relative demand for skilled and unskilled labor, and hence their relative wages.[1] Others have emphasized the role of changes in labor market institutions, such as the decline in unionization rates and in real minimum wages (e.g., DiNardo, Fortin and Lemieux, 1996). Changes in trading patterns and the effect of rising import competition on domestic wages have also gained prominence (Autor, Dorn and Hanson, 2013). As the vibrant debate on the causes of rising inequality in the United States continues, it seems increasingly unlikely that a single culprit will ultimately be identified.

But inequality can fall, as well as rise. A recent World Bank study has found that income inequality fell (by more than one Gini point) in 39 of 91 countries for which data were available in the 1993-2008 period (World Bank, 2016). Most of these declines were found among emerging and developing countries: inequality fell in 10 African and 11 Latin American countries, for example. Of course, as the World Bank study acknowledges, in many developing countries there are serious concerns about data quality and comparability, which make reliable analysis difficult. Yet, this is not true in all cases and, in those countries where the data are reliable and where the inequality trends are markedly different from those in the United States and Western Europe, it would seem possible to learn much that is of general interest.[2] It is therefore surprising that so little attention has been given in the mainstream

[1] See, for example, Bound and Johnson (1992), Katz and Autor (1999), Acemoglu (1998 and 2002), and Card and DiNardo (2002) among many others. More recently, changes in the distribution of occupations and, in particular, in the role that different tasks within occupations have on wage determination, have become central to the discussion of technical change (e.g. Autor, Levy and Murnane, 2003).

[2] This argument is analogous to the suggestion by Hamermesh (2004) that much of general interest could be learned from studying the determinants of labor demand in developing countries: "It is true that in many cases the data on labor markets in developing countries are not as complete as in developed economies, but in some cases they are, and in those instances the availability of good data that cover periods of widespread policy

economics literature to the drivers of inequality dynamics in countries other than the United States, Britain, France and Germany. In particular, studying cases where inequality actually fell for a sustained period of time can presumably teach us something about the combination of economic environments and policies under which such a trend is possible—even if, as in the case of rising disparities in the United States, there turn out to be many factors at play.

In this paper, we investigate the proximate determinants of a substantial decline in the inequality of labor incomes in Brazil—the largest economy in Latin America, and one of the 10 largest in the world—during the 1995-2012 period. Starting from very high levels, the Gini coefficient of the country's distribution of household per capita income fell by 12 percent, from 0.59 in 1995 to 0.52 in 2012. A 7 basis points reduction in the Gini coefficient in 17 years is truly remarkable. For comparison, the Gini coefficient of household income inequality in the US increased by 8 basis points between 1967 and 2011, from 0.40 to 0.48 (Jacobson and Occhino, 2012). Most of the decline in inequality in Brazil can be attributed to changes in the distribution of labor earnings (Barros et al., 2010; Azevedo et al., 2013), and the Gini coefficient for that distribution fell by 18% in the same period, from 0.50 to 0.41.

Economic studies of changes in inequality fall into two broad categories: the first uses exogenous sources of variation (instruments or experiments, say) to identify the effect of one or two factors on the overall distribution (e.g., Autor, Dorn and Hanson, 2013). The second group of studies decomposes the overall change in the distribution into its statistical components (e.g., DiNardo, Fortin and Lemieux, 1996; Juhn, Murphy and Pierce, 1993). There are, of course, advantages and disadvantages to both approaches. In the former, a successful identification strategy would render us confident of the causal impact of the particular factor under consideration (e.g., the effect of trade with China on wages in certain parts of the United States), but the remainder of the change—including any offsetting effects—remains unidentified. In the latter approach, one obtains an exact statistical decomposition of the overall change, but the assumptions required for treating that decomposition as causal identification are somewhat stronger (see Fortin, Lemieux and Firpo, 2011).

We view these two approaches as complements, rather than substitutes. In this paper, we follow the second route and use recent decomposition methods based on re-centered influence function (RIF) regressions (Firpo, Fortin and Lemieux, 2009; and Fortin, Lemieux

changes allows us to make inferences about labor demand that should be useful for students of labor market behavior generally" (Hamermesh, 2004: 554).

and Firpo, 2011) to estimate the quantitative impact of five groups of candidate explanatory factors on changes in the Brazilian earnings distribution. These factors are: i) human capital; ii) labor market institutions; iii) demographic characteristics of workers; iv) spatial segmentation; and v) sectoral distribution of the labor force. For each group of factors we separate out what can be attributed to changes in the distribution of observable workers' characteristics, the composition or endowment effect, and what is due to changes in the premiums associated with those characteristics, the pay structure effect.[3]

By casting the net wide and avoiding preconceived ideas, we come to somewhat different conclusions from those of most of the earlier literature about the recent decline in Brazilian—and Latin American—inequality. During the study period, Brazil experienced a large increase in the supply of relatively skilled workers (with completed secondary schooling or higher), which led to a decline in the returns to education (or skill premiums). Most early papers on falling inequality in Brazil (and elsewhere in Latin America) tend to attribute most of the decline to this falling skill premium effect.[4] More recently, other authors have attributed much – even most – of the decline to the direct and indirect effects of a rising real minimum wage policy (Alvarez et al., 2016, and Engbom and Moser, 2016).

To the best of our knowledge, ours is the first study to allow for possible contributions from all of these competing factors—as well as others—within a single empirical model. In so doing, we find that falling skill wage premiums did contribute to lower wage disparities, but that this effect was almost entirely offset by the inequality-increasing effect of higher endowments of education (which moved workers towards a steeper section of the convex earnings-schooling profile).[5] As a result, the overall effect of changes in education—taking both composition and structure effects into account—was economically insignificant. Similarly, rising minimum wages did contribute to falling wage inequality during 2003-2012 but were actually inequality-increasing in the earlier sub-period (1995-2003), when falling compliance with the policy led to higher wage gaps between workers who kept formal sector jobs and those who did not.

We find that the bulk of the decline in wage inequality in Brazil over the 1995-2012 period can be accounted for by two other factors. The first is a marked reduction in returns to potential experience[6]—an effect consistent with the age-biased technical change

[3] This follows a long tradition that can be traced back to Oaxaca (1973) and Blinder (1973).
[4] See, e.g., Ferreira, Leite and Litchfield (2008), Barros et al. (2010), Lustig, López-Calva, and Ortiz-Juárez (2013), and Gasparini et al. (2011).
[5] This is the "paradox of progress" of Bourguignon, Ferreira and Lustig (2005), on which more below.
[6] Our data, discussed below, does not permit us to observe actual experience for workers, so we rely on potential experience, defined as age minus years of schooling minus six.

hypothesis that has been put forward elsewhere in the literature.[7] Combining both composition and structure effects, experience accounts for 3.5 of the 9.0 Gini points decline in the full period. The second factor is a reduction in wage gaps associated with race, gender, location and formal work status, conditional on the observed human capital and labor market institutional variables. These gaps were closing in both of the sub-periods we study (1995-2003 and 2003-2012), thus substantially reducing what one might call "horizontal wage inequalities": between observationally equivalent men and women; blacks and whites; rural and urban areas; and formal and informal sector workers. We think of this effect as a move towards leveling the playing field in the Brazilian labor market. These two main findings are robust to widely different specification choices, including changes in the inequality indicator whose influence function is used as a dependent variable in the RIF regression.

By reporting on a statistical decomposition of inequality dynamics, we hope that this paper contributes an important first step in the analysis of Brazil's remarkable inequality dynamics during the late 1990s and until 2012, prior to the onset of its more recent economic crisis. But while it establishes the stylized facts that must be explained, it does not offer a causal analysis of why returns to experience and horizontal labor market inequalities fell. That task is left for future work.

The paper is organized as follows. The next section briefly describes our data. Section 3 then reviews the evidence on falling inequality in Brazil, and describes the main trends in the key variables under study. Our empirical approach is described in Section 4, and Section 5 presents the results. Section 6 concludes.

[7] See, for example, Behaghel and Greenan (2010), Friedberg (2003) and De Koning and Gelderblom (2004).

2. Data

The main data source for this study is the *Pesquisa Nacional por Amostra de Domicílios* (PNAD), and the period of analysis is 1995-2012. The PNAD is an annual, nationally representative household survey, covering both rural and urban areas.[8] It is fielded by the Brazilian Census Bureau (*Instituto Brasileiro de Geografia e Estatística*, IBGE) every year, except for census years. The descriptive analysis uses all available years in the period 1995-2012, but for the decompositions we use the PNAD datasets for six years: 1995, 1996, 2002, 2003, 2011 and 2012.

The following filters were applied to the data to generate our working sample. Our sample includes all workers aged 18-65 who reported positive earnings during the survey's reference week. Our measure of earnings is total monthly earnings from all jobs, and it is expressed in real values using the CPI deflator with base-year 2005. Monthly earnings are trimmed at the 1st and 99th percentiles. Sample sizes vary somewhat over time, but about 130,000 individuals per year are included on average.

All variables used in the analysis are categorical, except for earnings, schooling and experience in the labor market. The last two are measured in years. Demographic worker characteristics include a gender dummy and a three-way categorical variable for race (white, black and other). The analysis also distinguishes between rural and urban workers. Rural and urban areas are classified in accordance with the Brazilian census definitions. Spatial measures also include dummies for the five main geographic regions of Brazil: North, Northeast, Center-West, Southeast and South. Finally, regarding sectoral distribution, workers are divided into 17 different sectors of economic activity (see Table 2 below).

In terms of institutional factors, we distinguish three characteristics of the job. Workers are classified as formal employees if they have a job that is properly registered in their work-card or "*carteira de trabalho*," which provides workers with various benefits including rights to pensions, unemployment insurance and severance payments. Those employees whose employers have not registered their job in the "carteira de trabalho" are considered informal employees, and we also include in the analysis own-account or self-employed workers ("*conta própria*") as a separate category. Self-employment in developing countries is often considered as an indicator of informality, although it also encompasses workers engaged in liberal professions and some entrepreneurs with no employees of their

[8] Except for the rural areas of Acre, Amapá, Amazonas, Pará, Rondonia and Roraima states, which correspond to the Amazon rain forest. These areas, which according to census data account for 2.3 per cent of the Brazilian population, were excluded from the survey before 2003. To preserve sample comparability, we exclude these areas from our sample in all years.

own. We have also included in the analysis an indicator variable for workers below or at the national minimum wage in a given year. Minimum wage information is collected from the ILOSTAST Database. The description of trends in earnings and other variables in the next section is based on this dataset and variable definitions.

3. Falling Inequality in Brazil and Its Five Potential Drivers

As noted earlier, Brazil has experienced a non-trivial reduction in income inequality since the macroeconomic stabilization of 1994-1995. This decline was particularly pronounced since 2003, a period during which average incomes also grew relatively rapidly (Figure 1, Panel A) and poverty fell sharply.[9] Brazil was not alone: similar trajectories were observed in a number of other Latin American countries over the same period. A comprehensive discussion of the trends in Argentina, Brazil, Mexico and Peru can be found in López-Calva and Lustig (2010).[10]

Much of the popular discourse on falling inequality in Latin America has stressed the role of growing fiscal redistribution, through new social protection instruments such as conditional cash transfers (CCTs). Indeed, Brazil's federal government launched a conditional cash transfer program named *Bolsa Família* in 2003, which has since reached over 50 million people, and become one of the world's largest CCT programs. Although *Bolsa Família* and other fiscal redistribution programs did contribute to the reduction in household income inequality, the best available estimates put this contribution at between 30-40 percent of the overall decline (Barros et al., 2010; Azevedo et al. 2013). Another 10 percent or so has been attributed to demographic factors, chiefly the rapid decline in family sizes, which has been most pronounced among poorer households. The remaining 50-60 percent of the decline in inequality in household incomes has been attributed to changes in the distribution of labor earnings. It is these changes that are our subject here.

Figure 1 provides a visual description of the basic income trends in Brazil over this period. Panel A depicts trends in levels, rather than in dispersion: real labor earnings and (per capita) household incomes behaved similarly in the 1995-2012 period, but their behavior differed markedly across two sub-periods. From 1995 to 2003, both earnings and household incomes were either stable or declining: median labor earnings and average household per capita incomes were roughly constant, while mean labor earnings fell by 18 percent. The

[9] This section draws in part on our earlier paper (Ferreira, Firpo and Messina, 2016).

[10] In addition to these four in-depth case studies, this volume contains thematic chapters looking at the Tinbergen race between educational upgrading and technological change, the political economy of redistribution and trends in top incomes.

situation changed around 2002-03, when all three series began to trend sharply upwards. Average labor earnings, for example, increased by about 40 percent from 2003 to 2012. Median earnings and household incomes also grew rapidly in this second sub-period.[11]

[Insert Figure 1 around here]

Panels B, C and D of Figure 1 present the trends in inequality. Panel B shows the point estimates and 95 percent confidence intervals for the Gini coefficients of total household income per capita and of labor earnings. During 1995-2003, the decline in income inequality is clearly less rapid than that in labor earnings, for which the Gini loses four points, but both fall throughout. The second sub-period sees a continuation in the decline in labor earnings inequality, and an acceleration in the decline for household incomes. Over the full seventeen years, income inequality falls by about 12 percent and earnings inequality by as much as 18 percent, when both are measured by the Gini coefficient. Furthermore, Panels C and D show that the decline in earnings inequality is robust to the choice of index: the reductions are actually proportionally larger when measured by the Theil index and by the 90-10 percentile ratio, at 34 percent and 37 percent, respectively.

The recent literature on the decline of income inequality in Brazil, exemplified by Barros et al. (2010) and Ferreira, Leite and Litchfield et al. (2008), suggests two main (and clearly related) mechanisms that may account for this reduction in earnings inequality: i) rising levels of educational attainment in the labor force, particularly at the secondary level; and ii) a decline in the wage schooling premium. In other words, they suggest that the dominant explanation for falling wage inequality in Brazil lay firmly in the domain of human capital and, more specifically, that of education: as the supply of educated workers rose faster than the demand for them, the skill premium fell, leading to a more compressed wage distribution.

But other factors besides rising levels of educational attainment and reductions in the school premium were also at play during these 17 years, including in the broad domain of human capital. For example, there was a sharp reduction in the experience or age premium, a phenomenon that may be related to the aging of the labor force (although those composition changes were small) or may indicate that technical change was most beneficial to young workers, who are more likely to be familiar with new technologies. There were also changes in the gender and racial composition of the labor force and in the corresponding

[11] The causes of this inflection and of the boom decade of 2002-2013 go beyond the scope of this paper. 2002 was the year in which President Luis Inácio Lula da Silva took office. It is also now commonly viewed as the beginning of the commodity price super-cycle, which benefited all commodity exporting countries in Latin America, including Brazil. Messina and Silva (2017) discuss possible mechanisms through which the super-cycle may have affected the proximate drivers of earnings inequality.

wage premiums. Similarly, changes in Brazil's labor market institutions, such as the level and coverage of minimum wages, and the degree of enforcement of formal employment contracts, may have played a role. Indeed, in a recent paper using administrative matched employer-employee data from Brazil's formal sector (the RAIS dataset), Engbom and Moser (2016) claim that the rise in the real value of the minimum wage, including indirect spillover effects along the distribution, may account for as much as 70 percent of the reduction in the variance of log earnings in essentially the same period we study here (1996-2012).

The commodity boom that benefited Brazil during the 2000s may have triggered sectoral reallocation of employment, with additional effects on skill premiums and inequality, to the extent that different sectors have different intensities of demand for skills. Finally, there were also changes in employment and wage gaps across spatial areas: both rural versus urban, and across the country's five main geographical regions.

We have therefore grouped the factors that may have affected earnings inequality in Brazil into five major categories: human capital, demographics, institutions, geography and sectoral distribution. Before describing our methodological approach in more detail in Section 4, and presenting results in Section 5, the remainder of this section looks descriptively at each of the five groups of candidate explanatory factors in turn. We first describe changes in the distribution of the relevant variables, and then report—again, descriptively – on changes in the partial correlation between labor earnings and each variable.

3.1 Changes in the Distribution of Candidate-Proximate Factors

We begin with human capital. Figure 2 shows the cumulative distribution functions for years of schooling in the working age population (18-65), at three points in time: 1995, 2003 and 2012. These distribution functions illustrate an impressive expansion in the supply of years of schooling in the labor force. The proportion of the working age population with at least 10 years of schooling, for example, doubled from 25 percent to 50 percent between 1995 and 2012.[12]

[Insert Figure 2 around here]

In the absence of information on actual experience per worker, we look at age and potential experience, defined as age minus years of schooling minus six, for each worker. As life expectancy increased over this period, the proportion of the working-age population aged

[12] This increase in the supply of educated workers reflects educational policy changes dating back to the late 1980s, but also the subsequent decentralization of basic education funding from the state level to municipal level, as well as changes in the funding system with the creation of FUNDEB (*Fundo Nacional para o Desenvolvimento da Educação Básica*) to reallocate funding according to demand. See Cruz and Rocha (2016).

30 or over increased from 64 percent to 69 percent (an 8 percent increase over the period), and those aged 45 or over increased from 22 percent to 29 percent (a 32 percent increase). Yet, the increase in years of schooling documented in Figure 1 proved sufficient to offset the age effect on experience: as shown in Table 1, average potential experience in the labor force experienced a slight decline from 23.1 years in 1995 to 22.3 years in 2012.

[Insert Table 1 around here]

The second group of factors concerns changes in Brazil's labor market institutions. Under this heading, we focus on two variables in particular: changes in the level and coverage of the national minimum wage; and changes in the extent of formal and informal employment, as well as self-employment. Panel A of Figure 3 plots the trajectory of minimum wages in the 1995-2012 period, alongside those of mean and median earnings. While real mean and median earnings increased by 14 percent and 43 percent, respectively, the real minimum wage increased by 103 percent over the full period. Interestingly, the bulk of that increase took place in the second sub-period: between 2003 and 2012, the real minimum wage index in Figure 3 (Panel A) rose from 1.26 to 2.03.

[Insert Figure 3 around here]

Panel B of Figure 3 plots the density functions for real earnings for the years 1995-96, 2002-03 and 2011-12.[13] Vertical lines indicate the values of the minimum wage in each year, and the corresponding spikes are clearly visible. One can also see how the earnings distribution shifted to the right and became more compressed over time. Nevertheless, although such a large increase in minimum wages is clearly associated with a move of density mass to the right, there is a non-negligible mass of workers that remains below the minimum wage threshold. Over the full period, the proportion of employed workers earning strictly less than the minimum wage actually *increased* by about four percentage points, from 12 to 16 percent. As documented in Table 1, this tendency was dominant in the first sub-period: Between 1995 and 2003 the share of workers below the minimum wage increased by 6 percentage points, and then declined during the 2003-2012 boom. This turns out to have important consequences for our results.

The relative extents of formal and informal employment also changed during this period, with a marked increase in the proportion of employees with formal labor contracts ("*carteira de trabalho assinada"*). This trend may reflect two underlying forces. First, the economic boom of the 2000s, which reduced unemployment rates to record levels and thus

[13] These pairs of surveys were pooled to increase precision in the non-parametric estimation of the kernel densities.

reduced job insecurity, may have increased the leverage of workers to demand that the labor contract be formalized. The second driver has to do with a more active role of two Brazilian institutions, the Brazilian Public Prosecutor's Office, or PPO (*Ministério Público*), and the Ministry of Labor and Employment (MLE). Corseuil, Almeida and Carneiro (2012) present evidence of increased enforcement from these two institutions. They document a causal relationship between changes in the frequency and effectiveness of labor inspections and increases in formal employment from 1996 to 2006, using municipality-level data on labor inspection intensity and job flows.

Whatever the exact causes for the increase in formalization, the fact is that the proportion of workers employed under formal contracts increased by almost a fifth, from 48 percent to 57 percent, over the complete period, as shown in Table 1. This came at the expense of both informal employees and self-employment. Interestingly, Table 1 also shows that the increase in the proportion of workers earning below the minimum wage during 1995-2003 occurred despite this rising formalization: doubling the real level of the minimum wage proved to be too large an increase to sustain coverage, even as informality as a whole was in retreat.

The third group of factors affecting earnings inequality is related to the demographic composition of the labor force. As shown in Table 1, there was a substantial increase in female labor force participation between 1995 and 2012, as a result of which the proportion of female workers increased by 10 percent, from 38 percent to 42 percent. This trend is associated with increases in women's educational attainment levels but, more recently, there were also large increases in the provision of public childcare. From 1991 to 2007, the proportion of 0-6 year old children attending childcare increased from 27% to 44.5%, according to the IBGE.[14] It is likely that such a large increase might also have had an enabling impact on female labor force participation. Table 1 also shows that the proportion of non-white workers (mostly Afro-Brazilians and people of mixed race) in the working-age population increased by 8 percentage points, to just over 51 percent of the total.

The fourth set of candidate explanatory factors relates to the spatial distribution of the labor force. Table 1 points to the continued trend towards a more urban labor force, with the rural share of the working-age population decreasing by 38 percent, from 16 percent to 10 percent of the total. On the other hand, changes in the regional composition of the labor force were not particularly pronounced, as seen in the same table.

[14] See http://seriesestatisticas.ibge.gov.br/series.aspx?vcodigo=CAJ318.

Finally, changes in the sectoral structure of the workforce may have a bearing on changes in inequality, since sectoral labor demands differ in skill intensity. Despite the commodity boom, the period was still characterized by a reduction in the proportion of workers in agriculture. The expansion of the construction sector (which gained 2 percentage points) and construction-related services (2 percentage points in the real estate sector) were also noteworthy. Because both agriculture and construction are sectors intensive in unskilled labor, the impact of these sectoral changes on the relative demand for skills is *a priori* ambiguous.

3.2 Changes in Labor Market Premiums

Having briefly described the main distributional and institutional changes that may have affected earnings inequality in the previous subsection, we now turn to the changes in the partial associations between these candidate explanatory variables and earnings. We use an extended Mincerian equation as a descriptive tool and will loosely refer to its coefficients as returns or "premiums" to various observed worker characteristics. Table 2 reports the coefficients of an OLS regression of log earnings on the characteristics listed in the previous subsection, by year.

[Insert Table 2 around here]

Once again we start by looking at the behavior of the human capital premiums. To simplify the exposition, we used the coefficients of our only two continuous regressors—years of schooling and years of potential experience, both of which are entered as quartic polynomials—to plot the predicted earnings-education and earnings-experience profiles. Both of these curves, shown in Figure 4, have changed dramatically over time. The convexity of the education premium and the concavity of the experience premium are preserved, but the average returns to both education and experience fell over the period. Other things equal, the wage gap between a highly-skilled worker—whether in terms of education or experience—and a low-skilled worker was considerably smaller in 2012 than in 1995.

[Insert Figure 4 around here]

Focusing on the evolution of the schooling premium, it is interesting to note differences across sub-periods. Between 1995 and 2003, returns to secondary education (complete or incomplete) and of incomplete tertiary fall, relative to no schooling. But the returns to completing tertiary education rise relative to secondary or incomplete tertiary. In other words, even as the earnings-education profile in Panel A of Figure 4 shifts downwards in this first sub-period, it also becomes more convex. In contrast, the 2003-2012 period is characterized by a reduction of all schooling premiums, as the log-earnings curve continues

to move downwards but also becomes less convex, a feature that is shared with other Latin American countries (Gasparini et al., 2011). Returns to potential experience also fall markedly, as shown in Panel B of Figure 4, and most of the observed decline takes place in the second sub-period.

In terms of the marginal effects related to institutional factors, there were two important changes during this period, which may have contributed to some earnings compression. As shown in Table 2, the (conditional) gap between those above and below the minimum wage fell from 102 percent to 94 percent, and that between formal and informal sector employees (that is, excluding the self-employed) fell from 13 percent to 2 percent.

The marginal effects of demographic characteristics also became smaller towards the end of the period. The gap between black and white workers, for example, fell from 13 percent to 8 percent,[15] and that between men and women fell from 35 percent to 26 percent,[16] a trend shared with other Latin American countries (Ñopo, 2012). This pattern is also a continuation of trends observed through the late 1980s and early 1990s (Ferreira, Leite and Litchfield, 2008).

Disparities across the five main geographical regions of the country, conditional on other observables, were generally stable over the study period, but the gap between rural and urban workers narrowed by two percentage points. Finally, sectoral wage gaps also declined. Earnings in the agriculture, fishing and, in particular, mining sectors—all of which tend to pay relatively low wages, but which benefitted from the commodity boom of the 2000s—grew closer to those in other sectors.

4. Methodology

As discussed in the previous section both the distribution of relevant worker characteristics and their partial correlations with earnings have changed over time, and these changes must have shaped the final earnings distribution. Indeed, we have already seen that both the mean and several inequality measures of the earnings distribution changed considerably over the

[15] The omitted group is the "indigenous and other" category that basically consists of Asian descendants, as the remaining indigenous population is very small in the Brazilian labor market, particularly since the rural areas of the Northern region are excluded from the sample. The negative coefficient on the white dummy comes from workers of Asian (mostly Japanese) descent, who have typically commanded a premium over observationally comparable white workers.

[16] Until the early 1980s the existence of such wage gaps was generally interpreted as a measure of labor market discrimination. Although we are now more careful, because of various omitted variables that may well be correlated with race or gender (such as the probability of taking time off for child care, or the quality of education), it is of course still quite possible that some of these gaps do reflect active discrimination.

1995-2012 period. So, we now briefly discuss how to connect changes in covariates and premiums to changes in the earnings distribution.

If one is interested in comparing average earnings between two time periods, say $t = 1$ and $t = 2$; then it is possible to apply the method proposed by Blinder (1973) and Oaxaca (1973). Following their seminal papers, one could postulate that earnings are linear and separable in observable and unobservable characteristics, for each time period $t = 1$ and $t = 2$:

$$(1) \qquad Y_t = X_t'\beta_t + \varepsilon_t, \quad for\ t = 1, 2,$$

where X_t is a vector of length k and β is a parameter vector of same length, such that $X_t'\beta_t$ is the inner product of these vectors. We also write a pooled model for earnings that combines both time periods:

$$(1)' \qquad Y = X'\beta + \varepsilon.$$

Let the variable D_t be an indicator of being observed at time $t = 2$. If unobservable components are mean independent of observable ones (and normalized to have same mean) then the overall mean earnings gap can be written as

$$(2) \qquad \begin{aligned} &\mathrm{E}[Y \mid D_t = 1] - \mathrm{E}[Y \mid D_t = 0] \\ &\quad = \mathrm{E}[X \mid D_t = 1]'(\beta_2 - \beta) + \mathrm{E}[X \mid D_t = 0]'(\beta - \beta_1) \\ &\qquad + (\mathrm{E}[X \mid D_t = 1] - \mathrm{E}[X \mid D_t = 0])'\beta \end{aligned}$$

Replacing expected values with sample averages (denoted by variables with an upper bar) and parameters with estimated coefficients, one obtains an estimate of the overall mean earnings gap:

$$(3) \qquad \bar{Y}_2 - \bar{Y}_1 = \left[\bar{X}_2'(\hat{\beta}_2 - \hat{\beta}) + \bar{X}_1'(\hat{\beta} - \hat{\beta}_1)\right] + (\bar{X}_2' - \bar{X}_1')\hat{\beta} = \hat{\Delta}_S^{\mu} + \hat{\Delta}_X^{\mu}.$$

The first term of the sum in equation (3) is the estimated *pay structure effect*, $\hat{\Delta}_S^{\mu} = \bar{X}_2'(\hat{\beta}_2 - \hat{\beta}) + \bar{X}_1'(\hat{\beta} - \hat{\beta}_1)$, while the second term is the estimated *composition effect*, $\hat{\Delta}_X^{\mu} = (\bar{X}_2' - \bar{X}_1')\hat{\beta}$. As their names and formulae indicate, $\hat{\Delta}_S^{\mu}$ is an estimate of how changes in average earnings can be explained by changes in premiums, whereas $\hat{\Delta}_X^{\mu}$ is an estimate of how changes in average earnings can be explained by changes in the distribution of covariates.

Because of the additive linearity assumption, it is easy to compute the various elements of a detailed decomposition, in which each term corresponds to a single covariate or observable characteristic. The structure and composition effects can be written as sums over the explanatory variables, indexed by *j*, as follows:

(4) $\widehat{\Delta}_S^{\mu} = \sum_{j=1}^{k} \bar{X}'_{2,j}\left(\hat{\beta}_{2,j} - \hat{\beta}_j\right) + \bar{X}'_{1,j}\left(\hat{\beta}_j - \hat{\beta}_{1,j}\right)$

(5) $\widehat{\Delta}_X^{\mu} = \sum_{j=1}^{k}\left(\bar{X}'_{2,j} - \bar{X}'_{1,j}\right)\hat{\beta}_j$

where $\left(\bar{X}'_{2,j} - \bar{X}'_{1,j}\right)\hat{\beta}_j$ and $\bar{X}'_{2,j}\left(\hat{\beta}_{2,j} - \hat{\beta}_j\right) + \bar{X}'_{1,j}\left(\hat{\beta}_j - \hat{\beta}_{1,j}\right)$ are the respective contributions of the j^{th} covariate to the composition and wage structure effects. One can allow for an intercept, which means that $X_{t,1}$ =1 for t=1, 2. That means that the structure effect will have a component $\left(\hat{\beta}_{2,1} - \hat{\beta}_{1,1}\right)$ that reflects changes in average returns to unobservables.

This standard Oaxaca-Blinder framework has been a workhorse of labor economics for decomposing gaps in average earnings since the 1970s. Because we are ultimately interested in how covariates have impacted not only average earnings, but also other features of the distribution, we use a variant of this method based on re-centered influence function (RIF) regressions, which was introduced by Firpo, Fortin, and Lemieux (2009). Usage of RIF-regressions as a way to extend the method by Oaxaca and Blinder to functionals of the distribution, such as quantiles and inequality measures, has been extensively discussed in Fortin, Lemieux and Firpo (2011). In fact, RIF-regressions, when applied to the mean, yield exactly the same decomposition proposed by Blinder (1973) and Oaxaca (1973).

RIF-regression methods provide a simple way of performing detailed decompositions for any statistic of the earnings distribution, as long as that statistic admits an influence function. The influence function can be understood as the leading part of a linearization procedure. Therefore, by using influence functions one can approximate non-linear functionals of the distribution, such as quantiles or specific inequality indices, by an expectation.

The RIF-regressions are used in exactly the same way as standard regressions in Oaxaca-Blinder decompositions, except that the dependent variable, *Y*, is replaced by the (re-centered) influence function of the statistic of interest. Let υ be a functional of the earnings distribution. In this paper, our choices for υ are the mean μ, the Gini coefficient *G* and the τ^{th} percentile q_τ. Then the structure and composition effects for a functional υ can be written as sums over the explanatory variables:

(6) $\widehat{\Delta}_S^{\upsilon} = \sum_{j=1}^{k} \widehat{\Delta}_{S,j}^{\upsilon} = \sum_{j=1}^{k} \bar{X}'_{2,j}\left(\hat{\beta}_{2,j}^{\upsilon} - \hat{\beta}_j^{\upsilon}\right) + \bar{X}'_{1,j}\left(\hat{\beta}_j^{\upsilon} - \hat{\beta}_{1,j}^{\upsilon}\right)$

(7) $\widehat{\Delta}_X^{\upsilon} = \sum_{j=1}^{k} \widehat{\Delta}_{X,j}^{\upsilon} = \sum_{j=1}^{k}\left(\bar{X}'_{2,j} - \bar{X}'_{1,j}\right)\hat{\beta}_j^{\upsilon}$

where $\hat{\beta}_{t,j}^{\upsilon}$ and $\hat{\beta}_{j}^{\upsilon}$ correspond respectively to the coefficients associated with covariate *j* in a regression of the re-centered influence function of υ on *X* for period *t* and for the pooling of the two periods. Interestingly, if $\upsilon = \mu$, then RIF equals *Y*, so the standard OLS regression used in the traditional Oaxaca-Blinder method is a special case of the decomposition method using RIF.

We then aggregate the contribution of each $\widehat{\Delta}_{S,j}^{\upsilon}$ and $\widehat{\Delta}_{X,j}^{\upsilon}$ into our five groups (human capital, institutional factors, demographics, geography and sectors), although we also further disaggregate human capital into education and experience, and institutional factors into minimum wage and formalization.

A relevant detail for the implementation of our method is the fact, noted in Section 2, that many of our regressors are categorical variables. It is well-known in the literature on Oaxaca-Blinder decomposition methods that results are not invariant to the choice of the excluded category (Oaxaca and Ransom, 1999; Yun, 2005; Gardeazabal and Ugidos, 2004; and Fortin, Lemieux, and Firpo, 2011). Several attempts to solve the invariance problem have been proposed in the literature. In this paper we do not impose restrictions on the parameters beyond the usual practice of dropping one from each set of dummies and including the constant. We opted for choosing the best performers (i.e., the categories displaying the highest wages in the pooled sample) to be the omitted categories (white males, urban center-west, and being a formal employee). There is a practical rationale for this choice: 1995-2012 is a period of rapid inequality reduction in Brazil. Hence, the earnings of the most disadvantaged groups tended to grow faster than the earnings of the most advantaged. By selecting the most advantaged as our reference category we minimize the role of the unobserved component in the decomposition.[17]

5. Results

We present our results in three parts. First, we briefly discuss the main features of the typical Oaxaca-Blinder decomposition for the mean, breaking the analysis down into the two sub-periods: 1995-2003 and 2003-2012. We then decompose the Gini coefficient in the same way. Finally, we consider individual percentiles and three specific percentile ratios (90/10, 90/50 and 50/10).

[17] As a robustness check, we tried all possible permutations of omitted categories. There are no important differences in the results, once the effects of the unobserved component are discounted.

5.1 Average Earnings

Table 3 presents the results of the Oaxaca-Blinder decomposition of differences in average earnings over time, disentangling the composition and pay structure effects of each of the five groups of candidate explanatory factors listed in the Introduction, and described in Section 3. The first column presents results for the full period, 1995-2012, whereas the next two columns refer to the first (1995-2003) and second (2003-2012) sub-periods, respectively. To improve the accuracy of the estimates we have pooled two years of data on each end: 1995 refers to the pooling of 1995 and 1996, 2003 refers to the pooling of 2002 and 2003 and 2012 refers to the pooling of 2011 and 2012. The top panel gives log earnings in each relevant year, the difference between them, and the decomposition of this difference into the overall composition and structure effects. The second panel further decomposes endowment effects into those of individual (or groups of) variables, whereas the third panel does the same for structure effects. The bottom panel combines structure and composition effects for each individual or group of variables, and reports their total contribution.

[Insert Table 3 around here]

Average earnings increased 0.26 log points in the entire period, but decreased 0.12 in the first sub-period and increased by 0.38 in the second. For the full period, the composition and structure effects are roughly identical: 0.12 and 0.13, respectively. However, looking at each sub-period separately, we find that changes in premiums explain all of the change in 1995-2003, while structure effects explain about two thirds of the increase in average earnings in 2003-2012. For the full period, pure compositional changes associated with the increase in educational attainment had a large effect on the rise of labor income (0.18 log points), but they were counter-balanced by the decline in the education premium (the structure effect of -0.26 log points). Changes in sectoral premiums (mainly in the first sub-period) and in the returns of unobservable components that are captured by changes in the intercept (mainly in the second sub period) explain most of the increase in earnings for the entire period.

The earnings losses during 1995-2003 are largely accounted for by unobserved structure effects, which may be attributable to macroeconomic factors that affect earnings in ways that are uncorrelated with specific individual characteristics.[18] Weak education and experience premiums also contributed significantly to the decline of income levels. The role of the unobserved factors is even more important during 2003-2012 (0.51 log points) but with the opposite sign, possibly reflecting economy-wide terms of trade gains associated with the commodity boom that are uncorrelated with the five forces discussed above. However,

[18] In particular, the 1999 currency crisis was associated with a large GDP decline.

there were also non-negligible effects of minimum wage increases, increasing formalization and the declines of the gender and ethnic wage gaps in overall earnings growth during this second sub-period.

5.2 Changes in the Gini Coefficient

Let us now consider changes in inequality and, in particular, in the Gini coefficient, whose RIF-decompositions are described in Table 4 (for the full 1995-2012 period), Table 5 (for 1995-2003) and Table 6 (for 2003-2012). Each table has the same four-panel structure as Table 3. The six columns present different, incrementally richer, specifications. In column 1 we report decomposition results when only education and potential experience are included as regressors in the Gini RIF regression. Columns 2-6 add the remaining candidate explanatory factors outlined earlier, one at a time: minimum wage, formality status, race and gender, geographical factors and sector of economic activity.[19]

Overall, the Gini coefficient decreased by 9 percentage points, from 0.498 in 1995 to 0.408 in 2012. In 2003, it was 0.467, so most of the reduction occurred in the second sub-period. Structure effects explain all of the inequality reduction between 1995 and 2012, and were indeed partly offset by a positive composition effect. Had only changes in distributions (the "composition effect") taken place during this period, inequality would have increased by four points (Table 4). The same pattern holds for both sub-periods, as changes in the distribution of observable characteristics of the workforce were inequality-enhancing between 1995 and 2003 (2.85 Gini points) and 2003 and 2012 (1.78 points).

[Insert Tables 4 to 6 around here]

To understand the inequality-increasing endowment effect, note that it is driven predominantly by the education component, both for the full period and in each sub-period. This is consistent with what is known as the "paradox of progress" (Bourguignon, Ferreira and Lustig, 2005): [20] increases in educational attainment—even when its dispersion declines—may be inequality-enhancing because of the marked convexity of the earnings-education profile. As the distribution of education shifts to the right, the density mass at the range of years of schooling with the steepest returns increases. That contributes to an increase in average earnings (as seen in Section 5.1), but also to rising earnings inequality.

[19] Although a number of insights can be gained by comparing results across columns, the discussion below focuses on the preferred specification in Column 6. Specific results refer to that specification, unless otherwise explicitly noted.

[20] See also Knight and Sabot (1983) and Lam (1999).

The second element in importance for the endowment effect is the minimum wage, which has an interestingly differentiated effect across the two sub-periods. Overall, changes in the proportion of people earning less than the minimum wage were inequality-enhancing (by 1.13 Gini points) and that is driven basically by the first sub period, when it added 1.84 points to the Gini. During 2003-2012, in contrast, the minimum wage endowment effect was negative. This result should be seen in the light of the changes in the proportion of workers below the minimum wage (Table 1), and of the real minimum wage trends and associated density functions in Figure 3. The picture that arises suggests that increases in the real minimum wage reduce inequality only if labor markets can afford them. In the first sub-period there was a decrease of 13 log points on average earnings (Table 3, second column), which reflected the weak conditions of the labor market for that period. Despite the weak labor market, the real minimum wage increased by 26 percent, contributing to an increase in the proportion of workers below the minimum wage of 6 percentage points (Table 1). It was this increase in non-compliance with the minimum wage policy that contributed to increasing inequality.

Aside from education and minimum wages, all of the remaining compositional changes contributed to reducing inequality. But their contributions were much smaller than those of education and minimum wages, in absolute terms. For example, in 1995-2003, the increase in the proportion of people earning less than the minimum wage contributed to an increase in inequality of 1.84 Gini points. The combined negative effects from changes in the distribution of potential experience, formality, race and gender, geographical and sectoral allocation was about one third that value. In the second sub-period, the "paradox of progress" effect was very substantial, with educational endowments contributing 3.1 Gini points towards higher inequality. Changes in the distribution of all other factors, including the proportion of workers below the minimum wage, contributed 1.32 Gini points to *reducing* inequality.

If compositional changes were by and large inequality-enhancing, then the bulk of inequality reduction during 1995-2012 must be explained by changes in different premiums, or the structure effect. The main drivers of the negative (inequality-decreasing) structure effect were the declines in those earning gaps outlined above. In particular, potential experience, formal vs. informal, race, gender and location gaps declined, all contributing to reductions of inequality.

The most important structure effect was the reduction in returns to experience. Its contribution to the reduction in inequality ranges from 4.9 Gini points (column 1 of Table

4) to 3.1 Gini points when all explanatory factors are included in the decomposition (column 6 of Table 4). But although it was the most important factor, the structure effect of potential experience did not act alone. Column 6 of Table 4 reports reductions in the wage penalty of informal workers (-1.14 Gini points), in the gender and racial wage gaps (-1.59) and in regional disparities in wages (-1.27). All of these are both statistically and economically significant. If we take these three factors together and add their impact through composition and structure effects their overall contribution to inequality reduction during 1995-2012 is 4.61 Gini points, or 51 percent of the observed inequality reduction during the period.[21] Driven by a strong structure effect that was equalizing across these three dimensions, this "leveling the playing field" effect was stronger during the 1995-2003 period than during 2003-2012.

The contribution of changes in the schooling and experience premium merits a separate discussion. For the 1995-2012 period as a whole, changes in the schooling premium had moderately negative (i.e., decreasing) effects on inequality, although they were not statistically significant in the full model (column 6 of Table 4). However, if we add the positive impact of compositional changes associated with increased schooling in the labor force, the total effect of education was strongly inequality-enhancing (by almost four Gini points; see bottom of Table 4).

There were important differences across sub-periods: Between 1995 and 2003, the total contribution of education to inequality is strongly positive (3.8 Gini points according to the estimates in column 6 of Table 5). The positive effect of compositional changes is reinforced by a positive structure effect. As noted in Section 3, this is a period when the high school premium with respect to basic or no education is falling, but the premium of tertiary education with respect to high-school is rising. This second effect turns out to dominate, in terms of the Gini coefficient. The 2003-2012 interval, in contrast, is characterized by a reduction in all schooling premiums. The between-group differences across all schooling levels declined, as captured by a negative and significant structure effect (-2.9 in column 6 of Table 6). The total effect of education (combining composition and structure) is slightly positive but statistically insignificant (column 6 of Table 6), reflecting opposing forces of similar magnitudes.

Potential experience turns out to be the main driving force behind Brazil's inequality reduction in 1995-2012. Both the endowment and structure effects of potential experience

[21] This corresponds to the joint total effects of formality status (-1.46), race and gender (-1.86) and geography (-1.29), according to column 6 of Table 4 (bottom panel).

reported in Table 4 are negative, although the structure effect was much larger in absolute terms. This large inequality-reducing structure effect comes entirely from the second sub-period, 2003-2012, reflecting the reduction of the experience premium previously discussed. A diminished gap between older and younger cohorts has also been documented in other countries (Behaghel and Greenan, 2010), and been attributed to changes in technology that are biased towards younger workers.

Given that the supply of potential experience was essentially unchanged over the period, one can be reasonably confident that the falling returns to experience in Brazil were driven by declining demand.[22] Beyond that, the deeper causes of this decline lie beyond the scope of the present paper, and remain a question for future research into Brazil's distributional dynamics. A number of plausible hypothesis suggests themselves. Age-biased technical change à la Behaghel and Greenan (2010) is one. Another is that sharp changes in terms of trade after 2003 altered the sectoral demand for labor in Brazil (Messina and Silva, 2017). Such a process generates employment and wage opportunities for those workers who are able to move from "losing" to "gaining" sectors. But worker mobility may be costlier for experienced workers, because older workers may face more difficulties to retrain, or a higher opportunity cost in general.

The premiums associated with unobserved skills, captured in our framework by the constant term under the structure effect, also fell and contributed to reducing inequality. This is consistent with a single index model of residual inequality, where the price of unobserved skills falls if the premium on observable skills declines (Acemoglu, 2002).

In Appendix Tables A1-A3 we report a number of robustness checks, both for the whole period, and for each sub-period separately. We show regressions without sampling weights, using only the male sample, using hourly earnings as the dependent variable and finally using hourly earnings for full-time workers only (those working more than 20 hours). Qualitatively, the main results are largely robust to these changes.

5.3 Percentiles and Percentile Ratios

We have also performed the RIF regression decompositions for each percentile of the earnings distribution, that is letting $\upsilon = q_\tau, \tau \in (0,1)$. In practice, 99 percentiles were used, and point estimates are presented graphically in Figure 5.[23] The curves plotting observed log

[22] Table 1 shows average potential experience declining slightly from 23.07 years in 1995 to 22.32 years in 2012.
[23] To facilitate the exposition, we exclude from the decomposition the sector effects, which were never found to be significant in the Gini decompositions, and were not significant either for the percentiles in exercises available upon request.

earnings differences in Figure 5 are essentially earnings growth incidence curves (see Ravallion and Chen, 2003), and the curves denoting each of the specific endowment or structure effects are the corresponding counterfactual growth incidence curves (see Ferreira, 2012).

The top panel of Figure 5 presents the overall decomposition of observed log income differences at each percentile into endowment and structure effects. These high-level results are very consistent with what we learned from the decomposition of the Gini. First, for the entire period, the structure and endowment components had partially mutually offsetting effects on earnings inequality: the structure effect is mostly downward-sloping (inequality-reducing) whereas the endowment effect is upward-sloping along the distribution. Thus, changes in the distribution of labor force characteristics were generally unequalizing, and the observed decline in earnings inequality (captured by the growth incidence curves) is driven by changes in the structure of pay. The only part where structure effects were un-equalizing was at the very bottom of the distribution, up to the 20th-25th percentile. This feature is only present in the first sub period, 1995-2003, and is consistent with a minimum wage spike that lifted earnings substantially around the minimum wage, but not by as much for those earning less than it.

[Insert Figure 5 around here]

Further decomposing the earnings changes at each percentile into detailed structure and endowment effects (middle panels in Figure 5), we see that the endowment effects associated with the minimum wage and with education are upward-sloping, and thus inequality-enhancing, in the first sub-period.[24] Moreover, the minimum wage effect fundamentally operates up to the 40th percentile, as its impact is less relevant for the top of the earnings distribution. The same is not true for composition effects associated with education, which are monotonically increasing after the 20th percentile.

During the second sub-period only education contributes to the endowment effect in a way that increases inequality (the paradox of progress effect). By contrast, the minimum wage presents different endowment and structure effects. The endowment effect during 2003-2012 depresses inequality at the bottom half of the distribution. The structure effect instead shows a mild inequality enhancing effect up to the 20th percentile, but inequality reducing from the 20th to the 50th. During this period, the minimum wage rises from 50 percent of median labor earnings in 2003 to 65 percent in 2012. The decomposition suggests that the minimum wage pulled up the wages of workers in the centiles right below the

[24] This too is highly consistent with results from the decomposition of changes in the Gini coefficient.

minimum (wage employees whose employers are not complying with the law and low-earning self-employed), but not the wages of the first centiles of the distribution.

The structure effect graphs in Figure 5 reveal some additional results. First, between 1995 and 2003, the education and experience structure effects are both U-shaped. Thus, the structure of pay components for education and experience were inequality-reducing for low-income workers, but inequality-enhancing for those higher up the distribution. In the case of education, this is consistent with our earlier observation that returns to completed high-school fell relative to no education, while the premium for a completed college education rose relative to high-school, between 1995 and 2003. For the second sub-period, the structure effects of education and experience were downward-sloping throughout, and thus unambiguously inequality-decreasing.

The remaining factors played relatively minor roles, but the gaps associated with demographic, geographic and informality factors tended to be equalizing, which is in line with our previous finding for the Gini. It is only when all of these factors are combined that they gain more importance for the reduction of inequality during 1995-2003 than education itself. In fact, when we sum endowment and structure effects for each factor (bottom panel of Figure 5) we can see that education is the sole exception that was inequality-enhancing. All the other factors contributed to the reduction of inequality. Particularly important was potential experience, which was a crucial inequality reducer.

These conclusions, based on visual inspection, are confirmed by a more formal analysis based on selected percentile ratios. In particular, we look at the log 90/10 percentile ratio, a measure of top-to-bottom gaps, and at the log 90/50 and log 50/10 ratios, which are informative of inequality developments at the top and bottom of the distribution, respectively. Results of the RIF decomposition applied to these three inequality measures are presented (as log differences) in Table 7.

[Insert Table 7 around here]

As in Table 3, the top panel of Table 7 shows the evolution of the three inequality measures in 1995-2012 and in the two sub-periods considered in the analysis, and shows how structure and endowment effects contributed to the observed patterns. For 1995-2012, the log difference of the 90/10 range declined by an impressive 0.45 log points, confirming the sharp inequality reduction in Brazil. This reduction was proportionally more marked at the bottom of the distribution. The 90/50 ratio decreased from 1.31 to 1.09, while the 50/10 ratio declined by 0.23 log points, from 0.94 to 0.71. Inequality declined during the two sub-periods and the reduction took place both at the top and at the bottom, but it was particularly

strong in the lower half of the distribution, and during 2003-2012. During this period the 90/10 ratio declined by -0.37 log points (of a total of -0.45), and about 76 percent of the inequality reduction (-0.28) was concentrated in the bottom half of the distribution. The top panel of Table 7 also confirms our finding from the Gini decomposition that the endowment effect was always inequality-increasing during the period. The decline of earnings inequality was driven by changes in the structure of pay.

The decomposition of the detailed determinants of the evolution of the 90/10 percentile ratio, reported in the lower panels of Table 7, confirms some of the patterns discussed for the evolution of the Gini coefficient, but places even greater emphasis on the importance of the reduction in the experience premium. Reductions of the experience premium explain even more than the observed changes in p90-p10 inequality during 2003-2012, and compensate for other factors that were inequality-augmenting.

The reduction of the schooling premium has also a large equalizing role, but this equalizing force was mostly offset by the composition effect, which was strongly unequalizing, as seen earlier. Increases in the minimum wage played a smaller, but still significant role, explaining less than 10 percent of the total reduction of the 90/10 ratio. Some of the "leveling the playing field" effects also lose importance. Changes in formality status retain a small equalizing effect that is statistically significant, but geographic, race and gender factors become generally insignificant.[25]

As expected, the minimum wage has much stronger inequality effects at the bottom half of the distribution, but some impacts at the top half are observed, which is suggestive of spillover effects that can extend up to median earnings.[26] The contribution of the minimum wage for inequality reduction is particularly strong in 2003-2012. About 40% of the p50-p10 inequality reduction during this period is associated with minimum wage increases.

6. Conclusions

After decades of rising or roughly stable income inequality, the period since macroeconomic stabilization in 1994 has seen a steady decline in income dispersion in Brazil. While increases in the volume and improvements in the targeting of social transfers have played a role in that decline, perhaps its most important driver has been a reduction in inequality in labor earnings:

[25] The latter is marginally significant but positive, hence unequalizing.

[26] See Engbom and Moser (2016) for a discussion of possible mechanisms for these minimum wage spillovers, related to a dilution of firms' monopsony power in a search-theoretic setting where matching occurs with friction.

between 1995 and 2012 the Gini coefficient for earnings fell by 18% and other measures, such as the Theil index and the p90-p10 ratio, by between 30% and 40%.

The dominant narrative in the literature attributes this decline primarily to educational dynamics: a substantial increase in years of schooling for working-age adults has translated into a rising supply of skills, followed by a decline in the returns to those skills in the labor market (revealing, presumably, that demand for skills has failed to keep pace with supply). Our analysis draws on RIF regression-based decompositions to investigate the relative roles of a broader set of potential determinants including—beside human capital—changes in minimum wages and formal employment; in demographic characteristics of the labor force (chiefly race and gender); and in the sectoral and spatial distribution of employment.

We find that the decline in earnings inequality between 1995 and 2012 was driven primarily by changes in the structure of remuneration in the Brazilian labor market, rather than directly by changes in the distribution of worker characteristics. The main exception to this was the inequality-augmenting effect of the increase in years of schooling across the population. This is the so-called "paradox of progress" effect, whereby a rightward movement in the distribution of years of schooling shifts population density to steeper segments of the earnings-education profile, leading to wider earnings gaps. Thus, contrary to the conventional view, the educational upgrade was roughly neutral for inequality dynamics. The reduction of the schooling premium was strong and did have important equalizing effects, particularly during 2003-2012, but it was largely offset by the inequality-augmenting compositional changes.

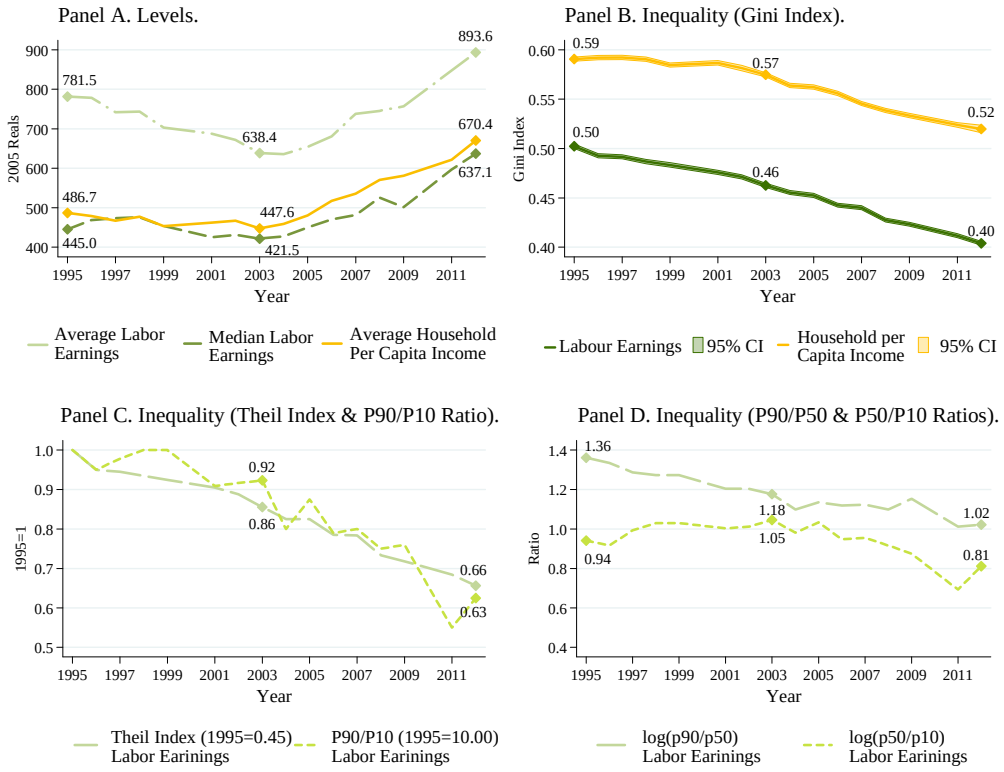
The most important driver of the observed inequality dynamics was the reduction in the experience premium, in particular during 2003-2012. Almost two-thirds (63 percent) of the reduction in the Gini during this period can be attributed to reductions in the returns to potential experience. If one considers the p90-p10 earnings ratio instead, the reduction in the experience premium accounts for even more than the observed changes in inequality, and was partly offset by other, inequality-augmenting, factors. Since the supply of potential experience was largely unchanged over the period—because population ageing was offset by longer educational spells—one can be relatively confident that this large change in returns was driven by a decline in the demand for more experience workers. The deeper causes of this reduction in the demand for experience—which is consistent with evidence on "age-biased technical change" from elsewhere—are beyond the scope of this paper, but invite further research.

Other changes in pay structure that contributed to declining inequality can be understood straightforwardly as declines in various different conditional wage premiums: reductions in the gender wage gap (with women's earnings rising faster than men's), the racial wage gaps (with wages for people of color rising faster than for whites), and the urban-rural wage gap (with wages rising faster in rural areas). Each of these gaps was, of course, estimated conditionally on the full set of observable characteristics, including education and experience. Another gap whose narrowing contributed to the overall earnings equalization was that between formal ("com carteira") and informal ("sem carteira") employees. While these changes in the structure of the labor market are equilibrium phenomena, which may well reflect market forces such as an increase in the bargaining power of workers vis-à-vis their employers, we have argued that they also reflect changes in enforcement patterns by government institutions.

The other key institutional variable we considered was the real minimum wage, which more than doubled over the period, generating a formidable spike in the density function of earnings by 2012. As suspected, this rise in the minimum wage contributed to falling inequality in the 2003-2012 sub-period. Its effects were particularly large for the bottom half of the distribution. Some 40 percent of the reduction of p50-p10 inequality was associated with increases in the minimum wage. However, minimum wage increases during 1995-2003—a period characterized by a much softer labor market—triggered non-compliance with the law, and rising self-employment. During this period rises in the minimum wage were inequality-enhancing, which emphasize the importance of business cycle considerations for the effectiveness of minimum wage policy.

Figures and tables

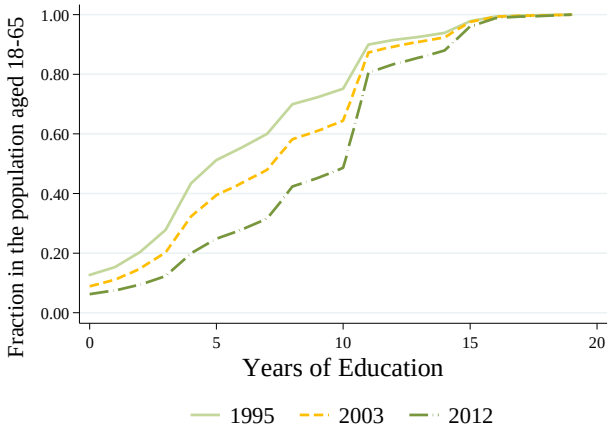
Figure 1: Household incomes and labor earnings in Brazil, 1995-2012.



Notes: All measures are calculated over the estimating sample (formal, informal and self-employed of ages 18-65). Negative incomes and the 99th and 1st percentiles of earnings are trimmed. Labor earnings refer to monthly earnings reported in the main occupation. The household per capita income includes all the incomes perceived by the household members. Source: *Pesquisa Nacional por Amostra de Domicílios* PNAD.

Figure 2: Schooling and age distributions by year.

Panel A. Education.

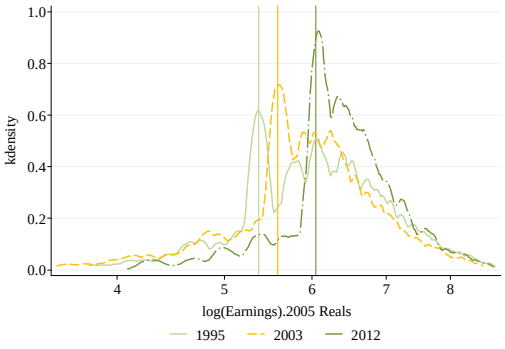


Note: The distributions of years of education are calculated for all the individuals over the estimating sample (formal, informal and self-employed of ages 18-65). The year 1995 includes 1995 and 1996 PNAD samples, the year 2003 includes 2002 and 2003 PNAD sample, and the year 2012 included 2011 and 2012 PNAD sample.

Figure 3: Minimum Wage and the Distribution of Earnings

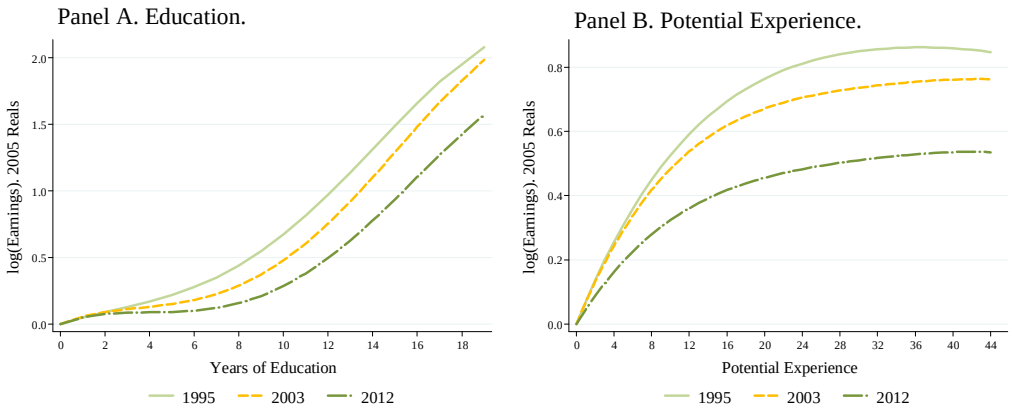
Panel A. The evolution of real minimum wage and earnings: 1995-2012.

Panel B. Earnings distributions and minimum wage spikes by year.



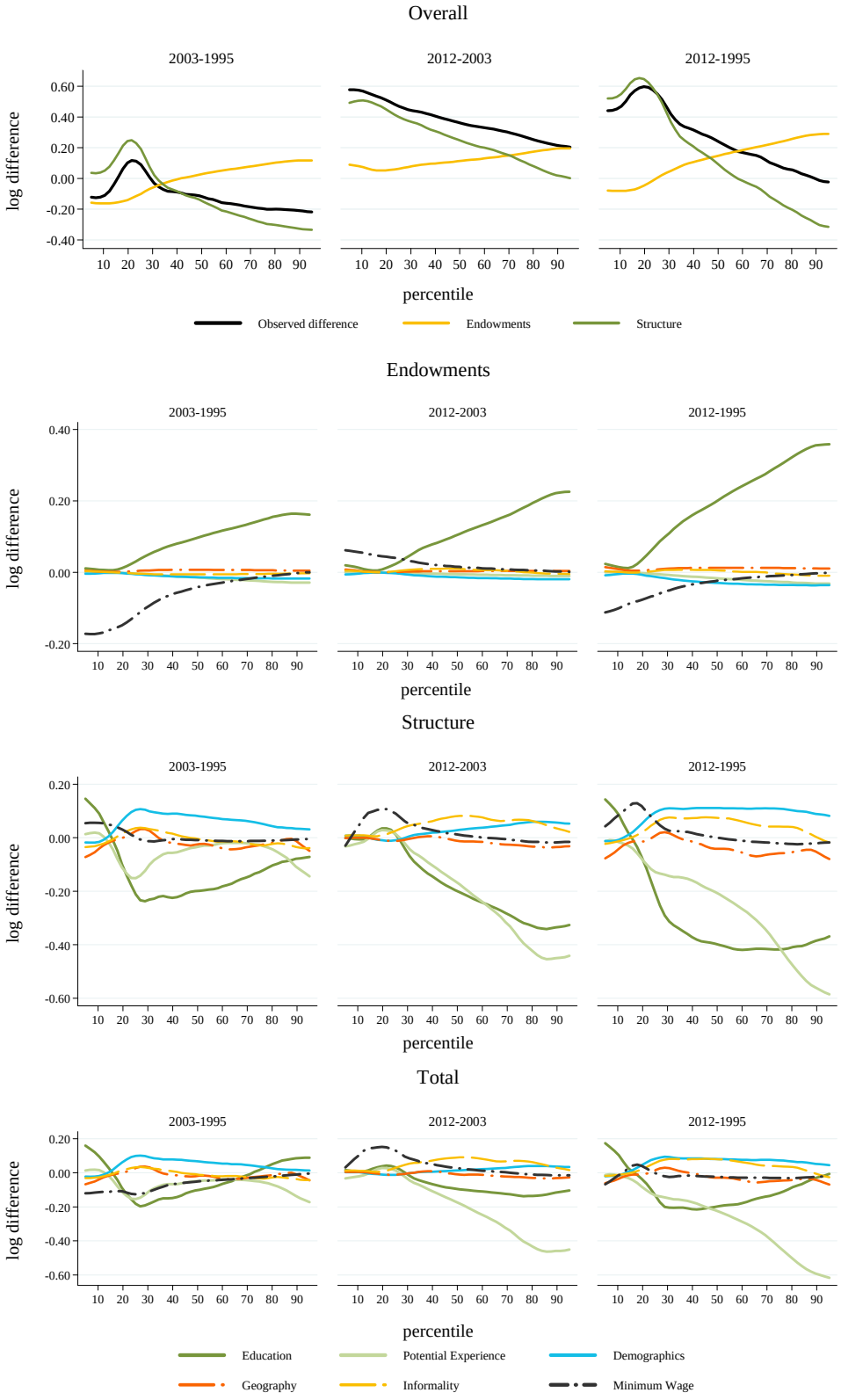
Notes.
Panel A: Median and average labor monthly earnings are calculated with the estimating sample (formal, informal and self-employed of ages 18-65). Negative earnings and the 99th and 1st percentiles of earnings distribution are trimmed. The minimum wage is the national monthly minimum wage. All series are deflated using 2005 Consumer Price Index (CPI) from the World Development Indicators. Panel B: Kernel density functions for all years use the same bandwidth, 0.7. Source: Pesquisa Nacional por Amostra de Domicílios PNAD.

Figure 4: Education and experience premium by year.



Note. Each line represents the predictions of a yearly regression that includes a quartic polynomial in education, a quartic polynomial in potential experience, a dummy variable for workers below the minimum wage, two dummies for formality status, two race dummies, a gender dummy, four region dummies and an indicator of work in rural areas (see Table 2). The year 1995 includes 1995 and 1996 PNAD samples, the year 2003 includes 2002 and 2003 PNAD sample, and the year 2012 included 2011 and 2012 PNAD sample. Source: *Pesquisa Nacional por Amostra de Domicílios* PNAD.

Figure 5: Decomposing Changes in Earnings by Percentile



Note: The graph shows the generalized kernel-weighted local polynomial Oaxaca decomposition for each centile of the earnings distribution. See notes in Table 3 for details on the individual effects included in each category.

Table 1: Summary Statistics

	Mean		
	1995	2003	2012
Years of Education	6.31	7.41	8.92
Potential Experience	23.07	22.51	22.32
Below Minimum Wage	0.12	0.18	0.16
Self-Employment	0.27	0.25	0.21
Informal	0.25	0.27	0.21
Formal	0.48	0.48	0.57
White	0.56	0.54	0.48
Black	0.43	0.45	0.51
Other	0.01	0.01	0.01
Female	0.38	0.40	0.42
Rural	0.16	0.12	0.10
Northeast	0.25	0.24	0.24
North	0.04	0.06	0.06
Southeast	0.47	0.46	0.46
South	0.16	0.16	0.16
Center-West	0.07	0.08	0.08
Agriculture, Fishing and Mining	0.15	0.12	0.09
Industry	0.15	0.16	0.14
Construction	0.07	0.08	0.09
Services	0.62	0.64	0.67
Earnings in 2005 Reals	780.12	655.01	870.97
log(Earnings). 2005 Reals	6.22	6.10	6.48

Note: All the statistics are calculated over the estimating sample (formal, informal and self-employed of ages 18-65).

Table 2: Labor Market Premiums. Marginal Effects

	(1) 1995		(2) 2003		(3) 2012	
	Coeff.	Std. Error	Coeff.	Std. Error	Coeff.	Std. Error
Years of Education	0.058**	0.003	0.073**	0.003	0.068**	0.003
Years of Education^2/100	-0.884**	0.098	-1.722**	0.079	-1.816**	0.077
Years of Education^3/1000	1.389**	0.098	2.002**	0.076	1.900**	0.071
Years of Education^4/10000	-0.412**	0.031	-0.531**	0.023	-0.475**	0.021
Potential Experience	0.073**	0.002	0.071**	0.001	0.048**	0.001
Potential Experience^2/100	-0.238**	0.014	-0.275**	0.01	-0.184**	0.009
Potential Experience^3/1000	0.037**	0.004	0.051**	0.003	0.036**	0.003
Potential Experience^4/10000	-0.002**	0.000	-0.004**	0.000	-0.003**	0.000
Below Minimum Wage	-1.020**	0.004	-1.037**	0.003	-0.941**	0.003
Self-employment	0.078**	0.004	-0.011**	0.003	0.081**	0.003
Informal	-0.133**	0.004	-0.100**	0.003	-0.023**	0.003
White	-0.170**	0.025	-0.060**	0.017	-0.027*	0.013
Black	-0.296**	0.025	-0.156**	0.017	-0.105**	0.013
Female	-0.351**	0.003	-0.297**	0.003	-0.259**	0.002
Northeast	-0.211**	0.005	-0.217**	0.004	-0.224**	0.003
North	-0.059**	0.006	-0.101**	0.004	-0.113**	0.004
Southeast	0.067**	0.004	0.023**	0.003	-0.019**	0.003
South	-0.017**	0.005	-0.022**	0.004	-0.008*	0.004
Rural	-0.104**	0.004	-0.054**	0.004	-0.084**	0.004
Agriculture	-0.621**	0.013	-0.403**	0.012	-0.364**	0.011
Fishing	-0.581**	0.02	-0.416**	0.02	-0.455**	0.019
Mining and Quarrying	-0.344**	0.024	-0.183**	0.021	-0.002	0.019
Manufacturing Industries	-0.341**	0.012	-0.304**	0.011	-0.260**	0.01
Electricity, Gas and Water	-0.273**	0.019	-0.03	0.019	-0.081**	0.019
Construction	-0.423**	0.013	-0.354**	0.012	-0.266**	0.011
Trade	-0.424**	0.012	-0.329**	0.011	-0.308**	0.01
Hotels and Restaurants	-0.447**	0.014	-0.367**	0.012	-0.325**	0.011
Transport and Storage	-0.212**	0.013	-0.133**	0.012	-0.182**	0.011
Real Estate	-0.385**	0.015	-0.304**	0.012	-0.270**	0.01
Public Administration	-0.403**	0.013	-0.179**	0.012	-0.129**	0.011
Teaching	-0.681**	0.013	-0.430**	0.011	-0.346**	0.011
Social and Health	-0.443**	0.014	-0.297**	0.012	-0.258**	0.011
Community Services	-0.550**	0.014	-0.353**	0.012	-0.288**	0.011
Domestic Service	-0.558**	0.013	-0.388**	0.011	-0.370**	0.011
Extra-territorial Org.	0.158	0.161	0.238*	0.121	0.315**	0.118
Constant	6.097**	0.03	5.915**	0.022	6.396**	0.018
Observations	214,001		263,774		270,053	
R-squared	0.62		0.66		0.61	

Note: Robust standard errors in brackets. **, * and + denote statistical significance at the 1%, 5% and 10% levels, respectively. The omitted categories are: above minimum wage, formal employees, center-west, other race, male, urban and financial services.

Table 3: Decomposition Results. Changes in Average Earnings.

	2012-1995	2003-1995	2012-2003
Overall			
Post	6.48**	6.10**	6.48**
	[0.002]	[0.002]	[0.002]
Pre	6.23**	6.23**	6.10**
	[0.002]	[0.002]	[0.002]
Difference	0.26**	-0.12**	0.38**
	[0.003]	[0.003]	[0.002]
Endowments	0.12**	0	0.12**
	[0.002]	[0.002]	[0.002]
Structure	0.13**	-0.13**	0.26**
	[0.002]	[0.002]	[0.002]
Endowments			
Education	0.18**	0.08**	0.10**
	[0.001]	[0.001]	[0.001]
Potential Experience	-0.02**	-0.01**	-0.00**
	[0.000]	[0.001]	[0.000]
Minimum Wage	-0.04**	-0.06**	0.02**
	[0.001]	[0.001]	[0.001]
Formality Status	-0.00**	-0.00**	0.00**
	[0.000]	[0.000]	[0.000]
Race and Gender	-0.02**	-0.01**	-0.01**
	[0.000]	[0.000]	[0.000]
Region and Urban	0.01**	0.00**	0.00**
	[0.000]	[0.000]	[0.000]
Economic Sector	0.01**	0.01**	0.01**
	[0.000]	[0.000]	[0.000]
Structure			
Education	-0.26**	-0.11**	-0.16**
	[0.006]	[0.006]	[0.006]
Potential Experience	-0.27**	-0.07**	-0.19**
	[0.010]	[0.012]	[0.008]
Minimum Wage	0.01**	-0.00*	0.02**
	[0.001]	[0.001]	[0.001]
Formality Status	0.03**	-0.01**	0.04**
	[0.002]	[0.002]	[0.002]
Race and Gender	0.06**	0.04**	0.02**
	[0.003]	[0.003]	[0.003]
Region and Urban	-0.04**	-0.02**	-0.02**
	[0.005]	[0.005]	[0.004]
Economic Sector	0.16**	0.13**	0.04*
	[0.015]	[0.016]	[0.014]
Constant	0.44**	-0.07**	0.51**
	[0.021]	[0.022]	[0.019]
Total			
Education	-0.08**	-0.03**	-0.06**
	[0.006]	[0.006]	[0.006]
Potential Experience	-0.28**	-0.09**	-0.20**
	[0.011]	[0.012]	[0.008]
Minimum Wage	-0.03**	-0.06**	0.04**
	[0.001]	[0.001]	[0.001]
Formality Status	0.02**	-0.02**	0.04**
	[0.002]	[0.002]	[0.002]
Race and Gender	0.04**	0.03**	0.01**
	[0.003]	[0.003]	[0.003]
Region and Urban	-0.03**	-0.02**	-0.02**
	[0.005]	[0.005]	[0.004]
Economic Sector	0.18**	0.14**	0.04**
	[0.015]	[0.016]	[0.014]
N	484,054	477,775	533,827

Note: Robust Standard Errors in Brackets. **, * and + denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are calculated using the delta method. Each category summarizes the contribution of the sum of individual effects. Education and experience refer to quartic polynomials in education and experience, respectively, in the underlying regressions. Minimum wage refers to a dummy variable that takes value one for individuals below minimum wage. Formality status summarizes the contribution of two dummies: informal employee and self-employed. Race and gender capture the interactions between a gender and race dummies ('mestiço' and Afro-Brazilian, white and others). Region and urban includes the interactions between an indicator variable of living in an urban area and region (northeast, north, southeast, south and center-west). Economic sector adds 17 dummies for economic sector. Omitted categories in the underlying regressions are: above minimum wage, formal employees, center-west, white, male, urban and financial services.

Table 4: Decomposition Results. Changes in Inequality. Gini. 2012-1995.

	(1)	(2)	(3)	(4)	(5)	(6)
			Overall			
Post	40.83**	40.83**	40.83**	40.83**	40.83**	40.82**
	[0.077]	[0.075]	[0.075]	[0.075]	[0.075]	[0.075]
Pre	49.79**	49.79**	49.79**	49.79**	49.79**	49.77**
	[0.071]	[0.071]	[0.071]	[0.071]	[0.071]	[0.071]
Difference	-8.96**	-8.96**	-8.96**	-8.96**	-8.96**	-8.95**
	[0.104]	[0.104]	[0.104]	[0.103]	[0.103]	[0.103]
Endowments	1.27**	4.46**	4.26**	4.21**	4.15**	4.01**
	[0.051]	[0.058]	[0.059]	[0.060]	[0.060]	[0.066]
Structure	-10.23**	-13.42**	-13.23**	-13.17**	-13.10**	-12.96**
	[0.109]	[0.103]	[0.103]	[0.103]	[0.103]	[0.106]
			Endowments			
Education	1.61**	3.66**	3.81**	3.94**	3.98**	4.11**
	[0.053]	[0.054]	[0.055]	[0.056]	[0.056]	[0.060]
Potential Experience	-0.34**	-0.41**	-0.40**	-0.40**	-0.40**	-0.39**
	[0.012]	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]
Minimum Wage		1.21**	1.15**	1.18**	1.15**	1.13**
		[0.031]	[0.030]	[0.031]	[0.030]	[0.029]
Formality Status			-0.29**	-0.28**	-0.26**	-0.32**
			[0.011]	[0.011]	[0.011]	[0.012]
Race and Gender				-0.24**	-0.29**	-0.27**
				[0.012]	[0.012]	[0.012]
Region and Urban					-0.04**	-0.03**
					[0.008]	[0.009]
Economic Sector						-0.22**
						[0.022]
			Structure			
Education	2.74**	1.62**	0.58*	0.90**	0.75**	-0.16
	[0.279]	[0.235]	[0.238]	[0.248]	[0.247]	[0.258]
Potential Experience	-4.92**	-2.91**	-3.60**	-3.18**	-3.16**	-3.12**
	[0.600]	[0.566]	[0.568]	[0.565]	[0.566]	[0.577]
Minimum Wage		-0.16**	-0.04+	0.07**	0.09**	0.07**
		[0.018]	[0.024]	[0.025]	[0.025]	[0.026]
Formality Status			-1.38**	-1.47**	-1.43**	-1.14**
			[0.104]	[0.104]	[0.105]	[0.112]
Race and Gender				-1.60**	-1.58**	-1.59**
				[0.171]	[0.173]	[0.177]
Region and Urban					-1.59**	-1.27**
					[0.289]	[0.285]
Economic Sector						2.16
						[1.472]
Constant	-8.05**	-11.97**	-8.79**	-7.89**	-6.18**	-7.91**
	[0.690]	[0.641]	[0.654]	[0.652]	[0.719]	[1.646]
			Total			
Education	4.35**	5.28**	4.40**	4.84**	4.73**	3.95**
	[0.285]	[0.239]	[0.242]	[0.252]	[0.252]	[0.263]
Potential Experience	-5.26**	-3.32**	-4.00**	-3.58**	-3.55**	-3.52**
	[0.600]	[0.567]	[0.568]	[0.565]	[0.566]	[0.577]
Minimum Wage		1.05**	1.11**	1.25**	1.24**	1.20**
		[0.037]	[0.039]	[0.040]	[0.040]	[0.040]
Formality Status			-1.67**	-1.74**	-1.69**	-1.46**
			[0.103]	[0.102]	[0.104]	[0.111]
Race and Gender				-1.84**	-1.88**	-1.86**
				[0.173]	[0.175]	[0.180]
Region and Urban					-1.62**	-1.29**
					[0.288]	[0.285]
Economic Sector						1.94
						[1.472]
N	485,442	485,442	485,442	485,407	485,407	484,054

Note: Robust Standard Errors in Brackets. **, * and + denote statistical significance at the 1% ,5% and 10% levels, respectively. The Gini coefficient is expressed in percentage points and goes from 0 (perfect equality) to 100 (perfect inequality). Standard errors are calculated with the delta method. See notes in table 3 for details on the individual effects included in each category.

Table 5: Decomposition Results. Changes in Inequality. Gini. 2003-1995.

	(1)	(2)	(3)	(4)	(5)	(6)
			Overall			
Post	46.77**	46.77**	46.77**	46.77**	46.77**	46.74**
	[0.073]	[0.073]	[0.073]	[0.072]	[0.072]	[0.072]
Pre	49.79**	49.79**	49.79**	49.79**	49.79**	49.77**
	[0.079]	[0.078]	[0.078]	[0.078]	[0.078]	[0.078]
Difference	-3.01**	-3.01**	-3.01**	-3.01**	-3.01**	-3.03**
	[0.108]	[0.107]	[0.106]	[0.106]	[0.106]	[0.106]
Endowments	0.02	2.98**	2.99**	2.99**	2.94**	2.85**
	[0.036]	[0.048]	[0.049]	[0.049]	[0.049]	[0.053]
Structure	-3.04**	-6.00**	-6.00**	-6.00**	-5.95**	-5.87**
	[0.105]	[0.100]	[0.099]	[0.099]	[0.099]	[0.100]
			Endowments			
Education	0.29**	1.32**	1.42**	1.47**	1.49**	1.61**
	[0.037]	[0.040]	[0.041]	[0.042]	[0.041]	[0.044]
Potential Experience	-0.27**	-0.33**	-0.33**	-0.32**	-0.32**	-0.32**
	[0.010]	[0.012]	[0.012]	[0.012]	[0.012]	[0.012]
Minimum Wage		1.99**	1.89**	1.93**	1.89**	1.84**
		[0.034]	[0.032]	[0.033]	[0.032]	[0.032]
Formality Status			0.01+	0.02**	0.02**	0
			[0.006]	[0.006]	[0.006]	[0.006]
Race and Gender				-0.11**	-0.12**	-0.11**
				[0.008]	[0.008]	[0.008]
Region and Urban					-0.03**	-0.03**
					[0.005]	[0.006]
Economic Sector						-0.14**
						[0.018]
			Structure			
Education	0.98**	3.22**	2.43**	2.74**	2.46**	2.14**
	[0.256]	[0.221]	[0.225]	[0.236]	[0.235]	[0.249]
Potential Experience	-2.21**	0.45	0.03	0.47	0.46	0.69
	[0.675]	[0.641]	[0.642]	[0.640]	[0.642]	[0.652]
Minimum Wage		0.16**	0.22**	0.34**	0.40**	0.35**
		[0.017]	[0.023]	[0.024]	[0.024]	[0.024]
Formality Status			-0.93**	-1.03**	-0.96**	-0.81**
			[0.114]	[0.114]	[0.116]	[0.125]
Race and Gender				-1.45**	-1.40**	-1.42**
				[0.161]	[0.163]	[0.169]
Region and Urban					-0.84**	-0.70*
					[0.292]	[0.289]
Economic Sector						0.27
						[1.548]
Constant	-1.80*	-9.82**	-7.75**	-7.07**	-6.08**	-6.40**
	[0.758]	[0.715]	[0.733]	[0.722]	[0.790]	[1.749]
			Total			
Education	1.27**	4.54**	3.85**	4.21**	3.95**	3.76**
	[0.258]	[0.223]	[0.227]	[0.239]	[0.238]	[0.252]
Potential Experience	-2.48**	0.12	-0.3	0.14	0.14	0.37
	[0.676]	[0.642]	[0.643]	[0.640]	[0.642]	[0.652]
Minimum Wage		2.15**	2.11**	2.27**	2.30**	2.19**
		[0.038]	[0.040]	[0.041]	[0.041]	[0.040]
Formality Status			-0.92**	-1.01**	-0.94**	-0.80**
			[0.114]	[0.114]	[0.116]	[0.125]
Race and Gender				-1.55**	-1.52**	-1.53**
				[0.161]	[0.164]	[0.169]
Region and Urban					-0.87**	-0.72*
					[0.292]	[0.289]
Economic Sector						0.12
						[1.549]
N	479,686	479,686	479,686	479,635	479,635	477,775

Note: Robust Standard Errors in Brackets. **, * and + denote statistical significance at the 1% ,5% and 10% levels, respectively. The Gini coefficient is expressed in percentage points and goes from 0 (perfect equality) to 100 (perfect inequality). Standard errors are calculated with the delta method. See notes in table 3 for details on the individual effects included in each category.

Table 6: Decomposition Results. Changes in Inequality. Gini. 2012-2003.

	(1)	(2)	(3)	(4)	(5)	(6)
			Overall			
Post	40.83**	40.83**	40.83**	40.83**	40.83**	40.82**
	[0.078]	[0.077]	[0.076]	[0.076]	[0.076]	[0.076]
Pre	46.77**	46.77**	46.77**	46.77**	46.77**	46.74**
	[0.067]	[0.067]	[0.067]	[0.067]	[0.067]	[0.067]
Difference	-5.95**	-5.95**	-5.95**	-5.95**	-5.95**	-5.92**
	[0.103]	[0.102]	[0.102]	[0.102]	[0.102]	[0.102]
Endowments	1.34**	2.00**	1.86**	1.80**	1.79**	1.78**
	[0.040]	[0.050]	[0.051]	[0.051]	[0.051]	[0.054]
Structure	-7.29**	-7.95**	-7.81**	-7.74**	-7.74**	-7.71**
	[0.100]	[0.094]	[0.094]	[0.094]	[0.094]	[0.094]
			Endowments			
Education	1.46**	2.86**	2.91**	3.02**	3.02**	3.10**
	[0.040]	[0.043]	[0.044]	[0.045]	[0.045]	[0.047]
Potential Experience	-0.11**	-0.14**	-0.13**	-0.14**	-0.13**	-0.13**
	[0.009]	[0.012]	[0.011]	[0.011]	[0.012]	[0.011]
Minimum Wage		-0.72**	-0.70**	-0.72**	-0.71**	-0.67**
		[0.033]	[0.032]	[0.033]	[0.032]	[0.032]
Formality Status			-0.21**	-0.20**	-0.19**	-0.23**
			[0.010]	[0.010]	[0.010]	[0.011]
Race and Gender				-0.17**	-0.21**	-0.19**
				[0.009]	[0.010]	[0.009]
Region and Urban					0.01	0.01
					[0.005]	[0.005]
Economic Sector						-0.10**
						[0.014]
			Structure			
Education	1.62**	-2.12**	-2.37**	-2.39**	-2.25**	-2.91**
	[0.293]	[0.240]	[0.241]	[0.254]	[0.253]	[0.263]
Potential Experience	-2.67**	-3.30**	-3.57**	-3.59**	-3.56**	-3.75**
	[0.515]	[0.475]	[0.478]	[0.478]	[0.479]	[0.488]
Minimum Wage		-0.37**	-0.31**	-0.30**	-0.35**	-0.31**
		[0.023]	[0.030]	[0.031]	[0.032]	[0.032]
Formality Status			-0.53**	-0.53**	-0.57**	-0.43**
			[0.102]	[0.102]	[0.103]	[0.108]
Race and Gender				-0.11	-0.15	-0.14
				[0.174]	[0.176]	[0.180]
Region and Urban					-0.76**	-0.58*
					[0.280]	[0.275]
Economic Sector						1.92
						[1.502]
Constant	-6.25**	-2.15**	-1.04+	-0.82	-0.11	-1.51
	[0.621]	[0.562]	[0.573]	[0.577]	[0.644]	[1.635]
			Total			
Education	3.08**	0.74**	0.54*	0.63*	0.77**	0.19
	[0.296]	[0.244]	[0.246]	[0.259]	[0.257]	[0.268]
Potential Experience	-2.78**	-3.44**	-3.70**	-3.72**	-3.70**	-3.89**
	[0.515]	[0.475]	[0.478]	[0.478]	[0.479]	[0.488]
Minimum Wage		-1.10**	-1.00**	-1.02**	-1.06**	-0.98**
		[0.040]	[0.043]	[0.045]	[0.045]	[0.044]
Formality Status			-0.75**	-0.73**	-0.75**	-0.65**
			[0.101]	[0.101]	[0.102]	[0.106]
Race and Gender				-0.28	-0.35*	-0.33+
				[0.176]	[0.177]	[0.182]
Region and Urban					-0.76**	-0.57*
					[0.279]	[0.275]
Economic Sector						1.82
						[1.502]
N	535,040	535,040	535,040	535,024	535,024	533,827

Note: Robust Standard Errors in Brackets. **, * and + denote statistical significance at the 1% ,5% and 10% levels, respectively. The Gini coefficient is expressed in percentage points and goes from 0 (perfect equality) to 100 (perfect inequality). Standard errors are calculated with the delta method. See notes in table 3 for details on the individual effects included in each category.

Table 7: Decomposition Results. Changes in log (p90/p10), log(p90/p50), and log(p50/p10).

	2003-1995			2012-2003			2012-1995		
	p90-p10	p90-p50	p50-p10	p90-p10	p90-p50	p50-p10	p90-p10	p90-p50	p50-p10
Overall									
Post	2.17**	1.18**	0.99**	1.80**	1.09**	0.71**	1.80**	1.09**	0.71**
	[0.007]	[0.009]	[0.009]	[0.004]	[0.019]	[0.023]	[0.004]	[0.023]	[0.023]
Pre	2.25**	1.31**	0.94**	2.17**	1.18**	0.99**	2.25**	1.31**	0.94**
	[0.006]	[0.006]	[0.004]	[0.005]	[0.009]	[0.008]	[0.005]	[0.003]	[0.003]
Difference	-0.08**	-0.14**	0.05**	-0.37**	-0.09**	-0.28**	-0.45**	-0.23**	-0.22**
	[0.008]	[0.012]	[0.010]	[0.007]	[0.023]	[0.027]	[0.006]	[0.023]	[0.024]
Endowments	0.29**	0.09**	0.20**	0.12**	0.08**	0.04**	0.37**	0.14**	0.23**
	[0.005]	[0.002]	[0.003]	[0.003]	[0.003]	[0.002]	[0.003]	[0.005]	[0.003]
Structure	-0.37**	-0.22**	-0.15**	-0.49**	-0.17**	-0.32**	-0.82**	-0.37**	-0.45**
	[0.006]	[0.012]	[0.010]	[0.006]	[0.025]	[0.028]	[0.007]	[0.028]	[0.026]
Endowments									
Education	0.16**	0.07**	0.09**	0.21**	0.12**	0.09**	0.35**	0.17**	0.19**
	[0.004]	[0.002]	[0.001]	[0.003]	[0.003]	[0.002]	[0.003]	[0.004]	[0.003]
Potential Experience	-0.03**	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**	-0.03**	-0.02**	-0.02**
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Minimum Wage	0.17**	0.04**	0.14**	-0.06**	-0.01**	-0.04**	0.09**	0.02**	0.07**
	[0.003]	[0.001]	[0.003]	[0.002]	[0.001]	[0.002]	[0.003]	[0.001]	[0.002]
Formality Status	-0.00**	0.00**	-0.01**	-0.01**	-0.01**	0.01**	-0.01**	-0.02**	0.01**
	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]	[0.001]	[0.000]
Race and Gender	-0.01**	-0.00**	-0.01**	-0.02**	-0.01**	-0.01**	-0.03**	-0.01**	-0.03**
	[0.001]	[0.001]	[0.001]	[0.001]	[0.000]	[0.000]	[0.001]	[0.001]	[0.001]
Region and Urban	0.00**	-0.00**	0.00**	-0.00	0.00**	-0.00*	0.00**	-0.00*	0.00**
	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]	[0.001]
Structure									
Education	-0.19**	0.08**	-0.27**	-0.31**	-0.10**	-0.20**	-0.48**	-0.00	-0.48**
	[0.016]	[0.015]	[0.013]	[0.020]	[0.018]	[0.021]	[0.014]	[0.015]	[0.019]
Potential Experience	-0.14**	-0.11**	-0.03	-0.41**	-0.26**	-0.15**	-0.56**	-0.37**	-0.18**
	[0.037]	[0.043]	[0.025]	[0.033]	[0.027]	[0.034]	[0.038]	[0.027]	[0.029]
Minimum Wage	0.01	0.01**	-0.00	-0.11**	-0.04**	-0.08**	-0.09**	-0.02**	-0.06**
	[0.004]	[0.001]	[0.004]	[0.004]	[0.006]	[0.007]	[0.003]	[0.005]	[0.006]
Formality Status	-0.04**	-0.08**	0.04**	0.04**	-0.02*	0.06**	0.00	-0.09**	0.09**
	[0.008]	[0.006]	[0.004]	[0.005]	[0.008]	[0.004]	[0.004]	[0.007]	[0.004]
Race and Gender	0.08**	-0.02*	0.10**	0.03**	0.01	0.02**	0.11**	-0.02*	0.13**
	[0.007]	[0.009]	[0.005]	[0.009]	[0.008]	[0.006]	[0.008]	[0.009]	[0.005]
Region and Urban	0.03*	0.03	0.01	-0.04**	-0.03*	-0.01	-0.01	-0.00	-0.00
	[0.016]	[0.018]	[0.012]	[0.016]	[0.015]	[0.009]	[0.015]	[0.019]	[0.006]
Constant	-0.12**	-0.13*	0.01	0.31**	0.26**	0.05	0.20**	0.14**	0.06
	[0.043]	[0.063]	[0.036]	[0.043]	[0.058]	[0.081]	[0.046]	[0.052]	[0.059]
Total									
Education	-0.03*	0.15**	-0.18**	-0.09**	0.02	-0.11**	-0.13**	0.16**	-0.29**
	[0.013]	[0.014]	[0.014]	[0.020]	[0.019]	[0.021]	[0.015]	[0.017]	[0.021]
Potential Experience	-0.17**	-0.13**	-0.05+	-0.42**	-0.26**	-0.15**	-0.59**	-0.39**	-0.20**
	[0.038]	[0.043]	[0.024]	[0.033]	[0.027]	[0.034]	[0.038]	[0.027]	[0.029]
Minimum Wage	0.18**	0.04**	0.13**	-0.17**	-0.05**	-0.12**	0.01*	-0.00	0.01+
	[0.003]	[0.002]	[0.004]	[0.004]	[0.006]	[0.006]	[0.004]	[0.006]	[0.007]
Formality Status	-0.04**	-0.07**	0.03**	0.04**	-0.03**	0.07**	-0.01+	-0.10**	0.10**
	[0.008]	[0.006]	[0.004]	[0.005]	[0.008]	[0.005]	[0.004]	[0.007]	[0.004]
Race and Gender	0.06**	-0.03**	0.09**	0.01	-0.00	0.01+	0.07**	-0.03**	0.10**
	[0.007]	[0.009]	[0.006]	[0.010]	[0.009]	[0.006]	[0.008]	[0.009]	[0.005]
Region and Urban	0.04*	0.02	0.01	-0.04**	-0.03*	-0.01	-0.00	-0.01	0.00
	[0.016]	[0.018]	[0.012]	[0.016]	[0.015]	[0.009]	[0.015]	[0.019]	[0.006]
Observations	479,635	479,635	479,635	535,024	535,024	535,024	485,407	485,407	485,407

Note: Standard Errors in Brackets. **, * and + denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are bootstrapped with 100 replications. The ratios are calculated as the log difference between the effect at the 90th percentile and the effect at the 10th percentile (50th and 10th, 90th and 50th, respectively). See notes in table 3 for details on the individual effects included in each category.

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APPENDIX

Table A.1: Robustness Decomposition Results. Changes in Inequality. Gini. 2012-1995.

	(1)	(2)	(3)	(4)	(5)
	Monthly Earnings	Monthly Earnings Without Sampling Weights	Monthly Earnings Males	Hourly Earnings	Hourly Earnings full time workers (20-80 hours)
Overall					
Post	40.83**	41.20**	39.99**	41.74**	40.79**
	[0.075]	[0.065]	[0.094]	[0.075]	[0.078]
Pre	49.79**	49.87**	48.66**	50.12**	49.83**
	[0.071]	[0.071]	[0.086]	[0.069]	[0.072]
Difference	-8.96**	-8.67**	-8.67**	-8.38**	-9.04**
	[0.103]	[0.096]	[0.128]	[0.102]	[0.106]
Endowments	4.15**	4.57**	3.60**	3.03**	3.57**
	[0.060]	[0.059]	[0.075]	[0.057]	[0.061]
Structure	-13.10**	-13.23**	-12.27**	-11.41**	-12.61**
	[0.103]	[0.098]	[0.126]	[0.106]	[0.107]
Endowments					
Education	3.98**	4.03**	3.49**	3.25**	3.83**
	[0.056]	[0.053]	[0.069]	[0.056]	[0.060]
Potential Experience	-0.40**	-0.37**	-0.43**	-0.36**	-0.43**
	[0.013]	[0.013]	[0.017]	[0.012]	[0.014]
Minimum Wage	1.15**	1.37**	1.04**	0.71**	0.71**
	[0.030]	[0.029]	[0.034]	[0.019]	[0.022]
Formality Status	-0.26**	-0.20**	-0.23**	-0.20**	-0.16**
	[0.011]	[0.009]	[0.013]	[0.011]	[0.011]
Race and Gender	-0.29**	-0.27**	-0.10**	-0.25**	-0.28**
	[0.012]	[0.011]	[0.011]	[0.012]	[0.012]
Region and Urban	-0.04**	0.01	-0.16**	-0.12**	-0.10**
	[0.008]	[0.010]	[0.012]	[0.010]	[0.009]
Structure					
Education	0.75**	0.50*	1.32**	0.43	1.14**
	[0.247]	[0.233]	[0.277]	[0.272]	[0.262]
Potential Experience	-3.16**	-3.28**	-3.42**	-4.00**	-3.50**
	[0.566]	[0.527]	[0.819]	[0.586]	[0.585]
Minimum Wage	0.09**	0.04	0.04	-0.29**	-0.29**
	[0.025]	[0.022]	[0.025]	[0.031]	[0.025]
Formality Status	-1.43**	-1.34**	-1.18**	-0.75**	-1.06**
	[0.105]	[0.094]	[0.130]	[0.107]	[0.102]
Race and Gender	-1.58**	-1.50**	-0.76**	-0.88**	-1.09**
	[0.173]	[0.165]	[0.111]	[0.168]	[0.170]
Region and Urban	-1.59**	-1.66**	-1.81**	-0.39	-0.61*
	[0.289]	[0.299]	[0.358]	[0.288]	[0.298]
Constant	-6.18**	-5.99**	-6.44**	-5.53**	-7.22**
	[0.719]	[0.671]	[0.986]	[0.753]	[0.748]
Total					
Education	4.73**	4.53**	4.81**	3.68**	4.98**
	[0.252]	[0.233]	[0.284]	[0.278]	[0.268]
Potential Experience	-3.55**	-3.65**	-3.86**	-4.35**	-3.93**
	[0.566]	[0.529]	[0.820]	[0.586]	[0.585]
Minimum Wage	1.24**	1.41**	1.08**	0.42**	0.42**
	[0.040]	[0.038]	[0.044]	[0.037]	[0.034]
Formality Status	-1.69**	-1.53**	-1.42**	-0.95**	-1.22**
	[0.104]	[0.094]	[0.129]	[0.105]	[0.100]
Race and Gender	-1.88**	-1.77**	-0.86**	-1.13**	-1.36**
	[0.175]	[0.165]	[0.114]	[0.171]	[0.173]
Region and Urban	-1.62**	-1.66**	-1.98**	-0.51+	-0.71*
	[0.288]	[0.299]	[0.357]	[0.287]	[0.297]
N	485,407	485,407	287,390	482,368	457,735

Note: Robust Standard Errors in Brackets. **, * and + denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are calculated with the delta method. The Gini coefficient is expressed in percentage points and goes from 0 (perfect equality) to 100 (perfect inequality). Part-time workers in column 5 are those working less than 20 hours in the reference week. See notes in table 3 for details on the individual effects included in each category.

Table A.2: Robustness Decomposition Results. Changes in Inequality. Gini. 2003-1995.

	(1)	(2)	(3)	(4)	(5)
	Monthly Earnings	Monthly Earnings Without Sampling Weights	Monthly Earnings Males	Hourly Earnings	Hourly Earnings full time workers (20-80 hours)
Overall					
Post	46.77**	47.05**	45.96**	48.23**	47.74**
	[0.072]	[0.068]	[0.090]	[0.075]	[0.078]
Pre	49.79**	49.87**	48.66**	50.12**	49.83**
	[0.078]	[0.071]	[0.094]	[0.076]	[0.079]
Difference	-3.01**	-2.82**	-2.69**	-1.89**	-2.09**
	[0.106]	[0.098]	[0.130]	[0.107]	[0.111]
Endowments	2.94**	3.28**	2.65**	2.10**	2.35**
	[0.049]	[0.049]	[0.063]	[0.047]	[0.051]
Structure	-5.95**	-6.10**	-5.34**	-3.99**	-4.45**
	[0.099]	[0.089]	[0.120]	[0.101]	[0.103]
Endowments					
Education	1.49**	1.41**	1.26**	1.30**	1.50**
	[0.041]	[0.042]	[0.053]	[0.044]	[0.048]
Potential Experience	-0.32**	-0.31**	-0.35**	-0.30**	-0.33**
	[0.012]	[0.012]	[0.015]	[0.011]	[0.013]
Minimum Wage	1.89**	2.20**	1.80**	1.26**	1.33**
	[0.032]	[0.032]	[0.037]	[0.022]	[0.025]
Formality Status	0.02**	0.05**	0.05**	0.05**	0.04**
	[0.006]	[0.005]	[0.007]	[0.005]	[0.005]
Race and Gender	-0.12**	-0.12**	-0.03**	-0.12**	-0.12**
	[0.008]	[0.008]	[0.005]	[0.008]	[0.008]
Region and Urban	-0.03**	0.05**	-0.07**	-0.09**	-0.06**
	[0.005]	[0.008]	[0.008]	[0.007]	[0.006]
Structure					
Education	2.46**	2.73**	3.05**	2.38**	2.71**
	[0.235]	[0.217]	[0.260]	[0.253]	[0.253]
Potential Experience	0.46	1.09+	1.65+	-0.36	-0.14
	[0.642]	[0.568]	[0.921]	[0.673]	[0.673]
Minimum Wage	0.40**	0.41**	0.30**	0.27**	0.26**
	[0.024]	[0.022]	[0.024]	[0.030]	[0.024]
Formality Status	-0.96**	-0.90**	-0.76**	-0.40**	-0.66**
	[0.116]	[0.103]	[0.143]	[0.118]	[0.114]
Race and Gender	-1.40**	-1.64**	-0.58**	-1.17**	-1.28**
	[0.163]	[0.158]	[0.102]	[0.162]	[0.163]
Region and Urban	-0.84**	-1.55**	-1.62**	-0.75*	-0.81**
	[0.292]	[0.305]	[0.358]	[0.303]	[0.310]
Constant	-6.08**	-6.24**	-7.38**	-3.95**	-4.53**
	[0.790]	[0.704]	[1.089]	[0.834]	[0.835]
Total					
Education	3.95**	4.14**	4.31**	3.67**	4.21**
	[0.238]	[0.221]	[0.264]	[0.257]	[0.257]
Potential Experience	0.14	0.79	1.29	-0.66	-0.47
	[0.642]	[0.568]	[0.922]	[0.673]	[0.673]
Minimum Wage	2.30**	2.60**	2.10**	1.53**	1.59**
	[0.041]	[0.039]	[0.044]	[0.038]	[0.035]
Formality Status	-0.94**	-0.85**	-0.71**	-0.35**	-0.61**
	[0.116]	[0.103]	[0.143]	[0.118]	[0.114]
Race and Gender	-1.52**	-1.76**	-0.61**	-1.29**	-1.40**
	[0.164]	[0.159]	[0.103]	[0.163]	[0.163]
Region and Urban	-0.87**	-1.50**	-1.69**	-0.84**	-0.87**
	[0.292]	[0.305]	[0.358]	[0.303]	[0.310]
N	479,635	479,635	289,598	478,798	451,938

Note: Robust Standard Errors in Brackets. **, * and + denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are calculated with the delta method. The Gini coefficient is expressed in percentage points and goes from 0 (perfect equality) to 100 (perfect inequality). Part-time workers in column 5 are those working less than 20 hours in the reference week. See notes in table 3 for details on the individual effects included in each category.

Table A.3: Robustness Decomposition Results. Changes in Inequality. 2012-2003.

	(1)	(2)	(3)	(4)	(5)
	Monthly Earnings	Monthly Earnings Without Sampling Weights	Monthly Earnings Males	Hourly Earnings	Hourly Earnings full time workers (20-80 hours)
			Overall		
Post	40.83**	41.20**	39.99**	41.74**	40.79**
	[0.076]	[0.065]	[0.096]	[0.076]	[0.079]
Pre	46.77**	47.05**	45.96**	48.23**	47.74**
	[0.067]	[0.068]	[0.084]	[0.070]	[0.073]
Difference	-5.95**	-5.85**	-5.97**	-6.49**	-6.95**
	[0.102]	[0.094]	[0.127]	[0.103]	[0.107]
Endowments	1.79**	1.99**	1.57**	1.61**	1.94**
	[0.051]	[0.051]	[0.066]	[0.047]	[0.052]
Structure	-7.74**	-7.83**	-7.54**	-8.11**	-8.88**
	[0.094]	[0.088]	[0.116]	[0.100]	[0.101]
			Endowments		
Education	3.02**	3.25**	2.80**	2.55**	2.94**
	[0.045]	[0.045]	[0.057]	[0.045]	[0.050]
Potential Experience	-0.13**	-0.13**	-0.16**	-0.12**	-0.14**
	[0.012]	[0.012]	[0.014]	[0.010]	[0.012]
Minimum Wage	-0.71**	-0.77**	-0.73**	-0.43**	-0.51**
	[0.032]	[0.032]	[0.038]	[0.020]	[0.024]
Formality Status	-0.19**	-0.14**	-0.19**	-0.18**	-0.12**
	[0.010]	[0.009]	[0.013]	[0.011]	[0.010]
Race and Gender	-0.21**	-0.19**	-0.10**	-0.18**	-0.22**
	[0.010]	[0.009]	[0.008]	[0.009]	[0.010]
Region and Urban	0.01	-0.02**	-0.06**	-0.03**	-0.02**
	[0.005]	[0.005]	[0.008]	[0.006]	[0.006]
			Structure		
Education	-2.25**	-2.85**	-2.30**	-2.54**	-2.17**
	[0.253]	[0.234]	[0.285]	[0.287]	[0.276]
Potential Experience	-3.56**	-4.30**	-4.99**	-3.58**	-3.31**
	[0.479]	[0.441]	[0.682]	[0.522]	[0.518]
Minimum Wage	-0.35**	-0.43**	-0.29**	-0.68**	-0.66**
	[0.032]	[0.029]	[0.032]	[0.038]	[0.031]
Formality Status	-0.57**	-0.54**	-0.52**	-0.43**	-0.49**
	[0.103]	[0.093]	[0.129]	[0.109]	[0.103]
Race and Gender	-0.15	0.19	-0.15	0.34+	0.25
	[0.176]	[0.167]	[0.114]	[0.175]	[0.177]
Region and Urban	-0.76**	-0.14	-0.22	0.36	0.18
	[0.280]	[0.291]	[0.351]	[0.287]	[0.296]
Constant	-0.11	0.24	0.94	-1.58*	-2.69**
	[0.644]	[0.591]	[0.869]	[0.706]	[0.698]
			Total		
Education	0.77**	0.39+	0.50+	0.01	0.77**
	[0.257]	[0.235]	[0.291]	[0.290]	[0.280]
Potential Experience	-3.70**	-4.44**	-5.15**	-3.69**	-3.45**
	[0.479]	[0.441]	[0.683]	[0.522]	[0.518]
Minimum Wage	-1.06**	-1.20**	-1.02**	-1.11**	-1.17**
	[0.045]	[0.043]	[0.049]	[0.042]	[0.039]
Formality Status	-0.75**	-0.68**	-0.71**	-0.60**	-0.61**
	[0.102]	[0.094]	[0.127]	[0.108]	[0.102]
Race and Gender	-0.35*	0	-0.25*	0.16	0.04
	[0.177]	[0.167]	[0.116]	[0.177]	[0.179]
Region and Urban	-0.76**	-0.16	-0.28	0.33	0.16
	[0.279]	[0.291]	[0.351]	[0.286]	[0.296]
N	535,024	535,024	312,910	532,750	503,761

Note: Robust Standard Errors in Brackets. **, * and + denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are calculated with the delta method. The Gini coefficient is expressed in percentage points and goes from 0 (perfect equality) to 100 (perfect inequality). Part-time workers in column 5 are those working less than 20 hours in the reference week. See notes in table 3 for details on the individual effects included in each category.