Research briefing:

Explaining the decline in earnings inequality in Brazil: 1995-2012

Summary

- After the Brazilian economy was stabilized in the mid-1990s, inequality declined substantially. The Gini coefficient for the country's distribution of household per capita income fell by 12%, from 0.59 in 1995 to 0.52 in 2012.
- It is estimated that 35-50% of the reduction in inequality can be attributed to changes in non-labour incomes (including Bolsa Familia cash transfers and other social assistance schemes). A further 10% or so can be attributed to demographic factors, particularly the declining household size among poorer families.
- The remaining 40-55% is attributed to changes in the distribution of labour earnings. So far, the dominant explanation for this has been the effects of a better educated workforce.
- Unlike most of the previous literature, which points to the effects of an increasingly educated workforce, our results highlight the importance of demographic, spatial and institutional factors in explaining the decrease in earnings inequality.
- The main factors behind the decline in earnings inequality were lower gender and race wage gaps, and lower urban and regional wage premia. There was also a reduction in the gap between formal and informal sector workers. In the latter part of the period of study (2004-2012), a rising minimum wage also contributed.

Declining inequality levels in Brazil

Long one of the world's most unequal countries, Brazil has experienced a significant reduction in income inequality since macroeconomic stabilization around 1994-1995. The Gini coefficient for the country's distribution of household per capita income fell by 12%, from 0.59 in 1995 to 0.52 in 2012.

The decline was particularly pronounced after 2003, a period during which average incomes grew relatively rapidly – by as much as 40% overall – and poverty fell sharply. Brazil was not alone: similar trajectories were observed in a number of other Latin American countries – such as Argentina, Peru and Ecuador - over the same period.

Figure 1 suggests that it may be helpful to distinguish between two sub-periods. From 1995 to 2002, both earnings and household incomes were stable or declining. The situation changed around 2002-03, when all three series begin to trend sharply upward. Average earnings in the labour market, for example, experienced an increase of about 40% from 2002 to 2012. Median earnings and

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

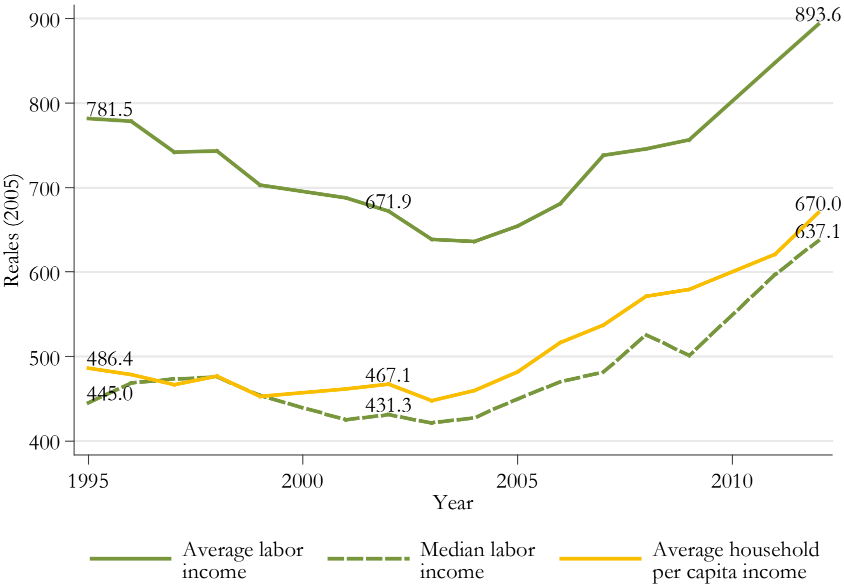
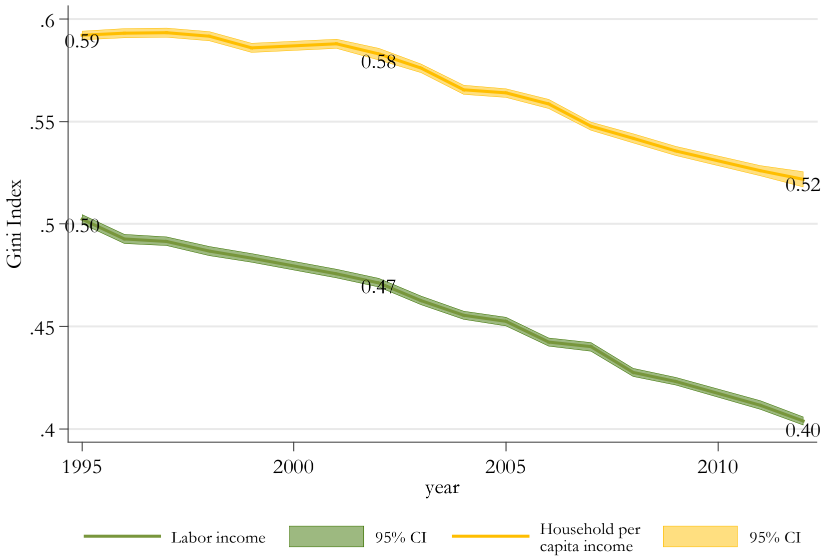
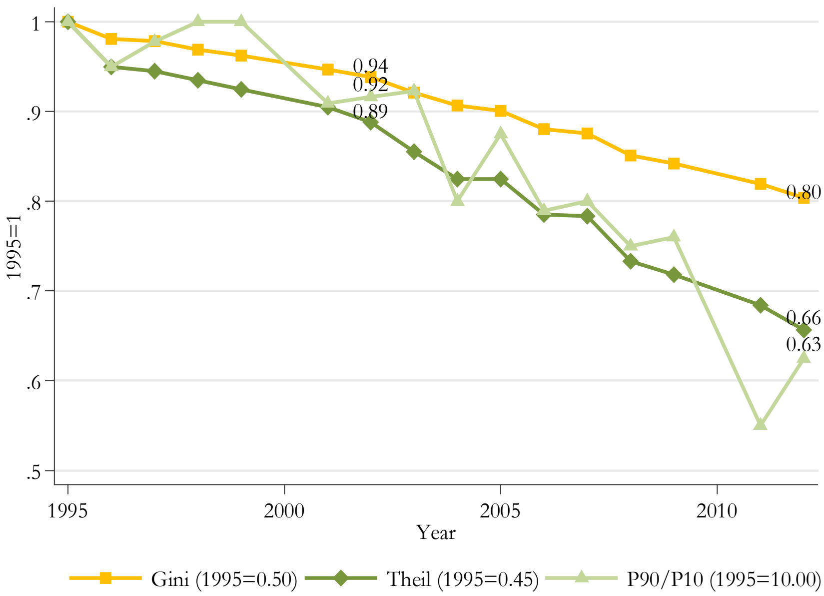


Figure 2: Household incomes and labour earnings in Brazil, 1995-2012: inequality



Note: The Gini index of labour income covers all the occupied employees between 18 and 65 years. The Gini index of household per capita income covers the entire population.

Figure 3: Changes in earnings inequality in Brazil, 1995-2012: different indices.



household incomes also grew rapidly in this second sub-period.

There is no correspondingly sharp break when one looks at the trends in inequality, rather than in levels. Figure 2 shows the point estimates and 95% confidence intervals for the Gini coefficients of total household income per capita (in yellow) and of labour earnings (in green).

During 1995-2002, the decline in income inequality is clearly less rapid than that in labour earnings, for which the Gini loses three points. But both appear to be falling throughout. The second sub-period sees a continuation in the decline in labour earning inequality, and an acceleration in the decline for household incomes.

Over the full seventeen years, income inequality falls by about 12% and earnings inequality by as much as 20%, when both are measured by the Gini coefficient. Furthermore, Figure 3 shows that the decline in earnings inequality is robust to the choice of index: the reductions are actually larger when measured by the Theil (T) index, and by the 90-10 percentile ratio, at 34% and 37% respectively.

What factors have helped to reduce inequality?

Much of the popular discourse on this subject has typically stressed the role of fiscal redistribution as a key driver of Brazil's inequality decline. In 2003, Brazil's federal government launched a conditional cash transfer (CCT) program, named Bolsa Família, which has since reached upwards of 50 million people, and become one of the world's largest CCT programs.

Key IRIBA findings:

Unlike most of the previous literature, our results highlight the importance of demographic, spatial and institutional factors in explaining the decrease in earnings inequality over the period being analyzed.

While increases in the stock of human capital in the Brazilian labour force – both in terms of years of education and experience – account for an important share of the increase in *levels* of pay, human capital is a relatively small contributor to the decline in inequality – and then only because of falling returns to schooling. (The endowment component of the human capital effect was inequality-increasing).

Institutional factors play a role – largely through the increase in the share of formal employment. Perhaps most surprisingly, a substantial share of the decline in earnings inequality can be attributed to lower gender and race wage gaps, and to lower urban and regional wage premia, *conditional* on educational and institutional factors. Together, these factors account for 6.3 of the ten Gini points reduction between 1995 and 2012.

Although Bolsa Família and other fiscal redistribution programs – such as the Benefício de Prestação Continuada (BPC) and non-contributory rural pensions – have indeed contributed to the reduction in household income inequality, the best available estimates put this contribution at between 35-50% of the overall decline (Barros et al. 2010; Azevedo et al. 2013). Another 10% 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 40-55% of the decline in inequality in household incomes is attributed to changes in the distribution of labour earnings. The dominant narrative in the literature attributes that decline primarily to human capital 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 labour market (revealing, presumably, that demand for skills has failed to keep pace with supply).

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 labour market, rather than directly by changes in the distribution of worker characteristics. These changes in pay structure can be understood very straight-forwardly as declines in various different wage premia: In addition to falling schooling premia, the period was also characterized by 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.

Another gap whose narrowing contributed to the overall equalization was that between formal ("com carteira") and informal ("sem carteira") employees. While these changes in the structure of the labour market are equilibrium phenomena, which reflect market forces such as an increase in the bargaining power of workers vis-à-vis their employers, we argue that they also reflect changes in enforcement patterns by government institutions.

Another 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 2004-2012 sub-period. However, its more lackluster performance between 1995 and 2003, combined with a much softer labour market then, meant that the overall impact of minimum wages in the whole period was inequality-increasing.

All in all – and in stark contrast to earlier documented periods – the story of these seventeen years was a happy one in Brazilian labour markets. Unemployment fell and earnings rose. Not only did average earnings rise, but they rose by most for those groups of workers who used to earn the least. There was indeed a compression in the schooling wage premia, which used to be unusually large in Brazil. But even more impressive were the reductions in wage gaps among workers that are observationally equivalent in terms of their human capital, but differ along such dimensions as race, gender, location and type of job.

Is Brazil's experience relevance to African countries?

Brazil's performance has naturally attracted widespread attention, both among researchers and among policy-makers in other countries. Interest has been piqued in Africa, for example, where a handful of countries – including South Africa, Namibia and Botswana – also have very high levels of inequality. Brazil is often seen as a more relevant case study for these countries than, say, nations in Europe or North America: it is also a developing country, albeit with somewhat higher levels of per capita income. It is also a primary commodity exporter, benefitting (at the time) from the commodity price boom. It is natural, therefore, that there should be interest from many quarters on whether there might be any lessons from the Brazilian experience with poverty and inequality reduction in a context of rising incomes.

Policy Implications

Are there any lessons from this analysis for African countries embarking in their own policy struggles for a fairer and less unequal labour market? This is a difficult question, because local context and institutions matter a great deal, and there are non-trivial differences between Brazil's economy and those of most African countries. Nevertheless, four general implications appear to be broad enough that they must apply, in some locally coherent form, to most other countries:

1. An educated labour force is a more productive labour force and, if education is promoted wisely, with a focus on primary and secondary levels, it leads to greater prosperity *and* greater equity;
2. All forms of discrimination – among the sexes, ethnic groups, or other forms – tend to be both inefficient and inequitable. Encouraging female education, reduction in fertility rates, and greater labour force participation has contributed to growth in average earnings, and to a less unequal distribution in Brazil.
3. Integrate the rural areas, and the workers who live there: greater connectivity and less labour market segmentation between cities and the countryside are an ongoing part of Brazil's recently successful fight against poverty and inequality.
4. And finally, do not fear fiscal redistribution: well-designed transfer programs are perfectly consistent with vibrant labour markets, with rising average wages and declining dispersion.

This briefing is based upon an IRIBA working paper 12 'A more level playing field? Explaining the decline in earnings inequality in Brazil, 1995-2012' by Francisco Ferreira, Sergio Firpo and Julián Messina available at **http://www.brazil4africa.org**

Further reading:

- Azevedo, João Pedro, Gabriela Inchauste and Viviane Sanfelice (2013): "Decomposing the Recent Inequality Decline in Latin America", World Bank Policy Research Working Paper 6715.
- Barros, Ricardo, Mirela de Carvalho, Samuel Franco and Rosane Mendonça (2010): "Markets, the State, and the Dynamics of Inequality in Brazil", Chapter 6 in López-Calva, L.F and N. Lustig (eds.) Declining Inequality in Latin America: A decade of progress? (Washington, DC: The Brookings Press)
- Ferreira, Francisco, Phillippe Leite and Julie Litchfield (2008): "The rise and fall of Brazilian inequality: 1981–2004". Macroeconomic Dynamics, 12(S2): 199-230
- Fortin, Nicole, Thomas Lemieux and Sergio Firpo (2011): "Decomposition methods in economics." Handbook of labor economics, 4, 1-10

IRIBA is a DFID funded research programme, based at the University of Manchester. It brings together an international team of researchers, examining how lessons from Brazil's development experience can be learned and adapted for African countries.

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