

Understanding the dynamics of labor income inequality in Latin America (WB PRWP 7795)

Carlos Rodríguez-Castelán (World Bank)

Luis-Felipe López-Calva (UNDP)

Nora Lustig (Tulane University)

Daniel Valderrama (Georgetown University)



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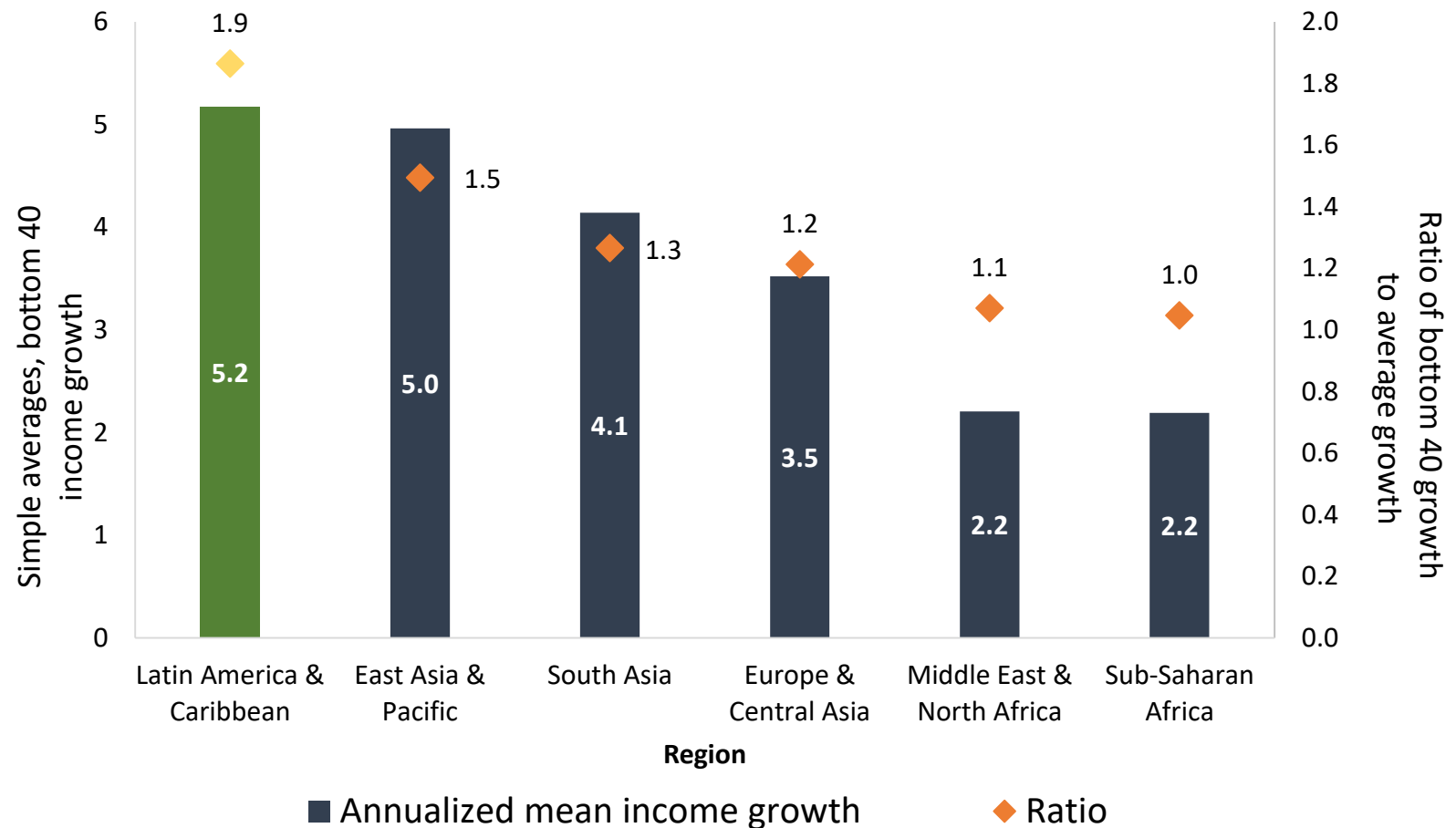


SOME CONTEXT OF INCOME INEQUALITY IN LATIN AMERICA

Over the past years Latin America experienced a period of inclusive growth

Shared Prosperity in developing regions, (circa) 2006-11

Annualized income growth of the bottom two quintiles with respect to the mean



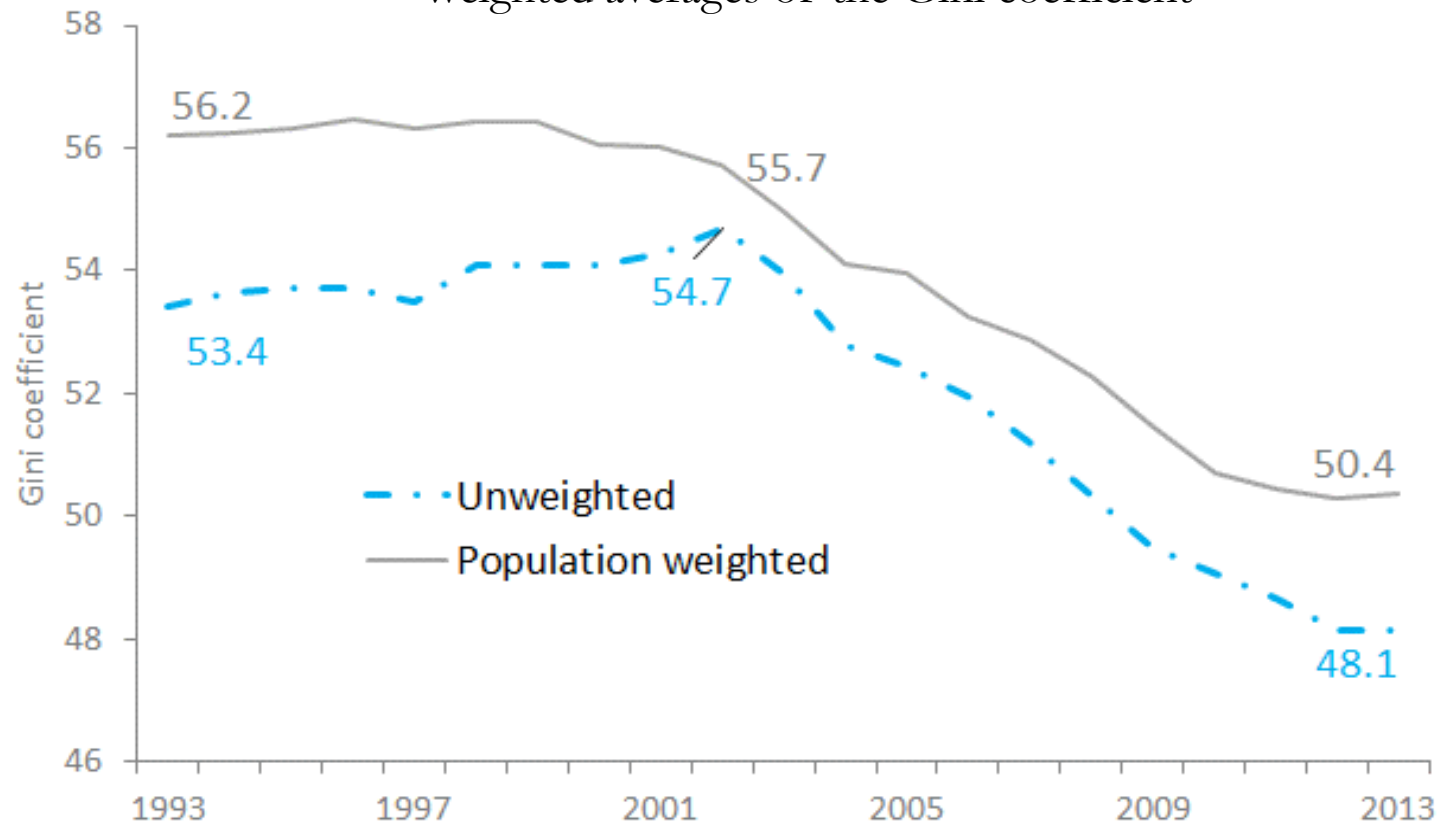
Source: Cord, Genoni, and Rodriguez-Castelan (2015). "Shared Prosperity and Poverty Eradication in LAC." World Bank, Washington DC

...which has translated into a **steady decline in income inequality**

Discussed in previous studies (See Gasparini et al. 2008; Lustig and Lopez-Calva 2010; WB 2011; Lustig, Lopez-Calva and Ortiz-Juarez, 2013; Cornia, 2014, Cord et al. 2016)

Household income inequality, Latin America, (circa) 1993-2013

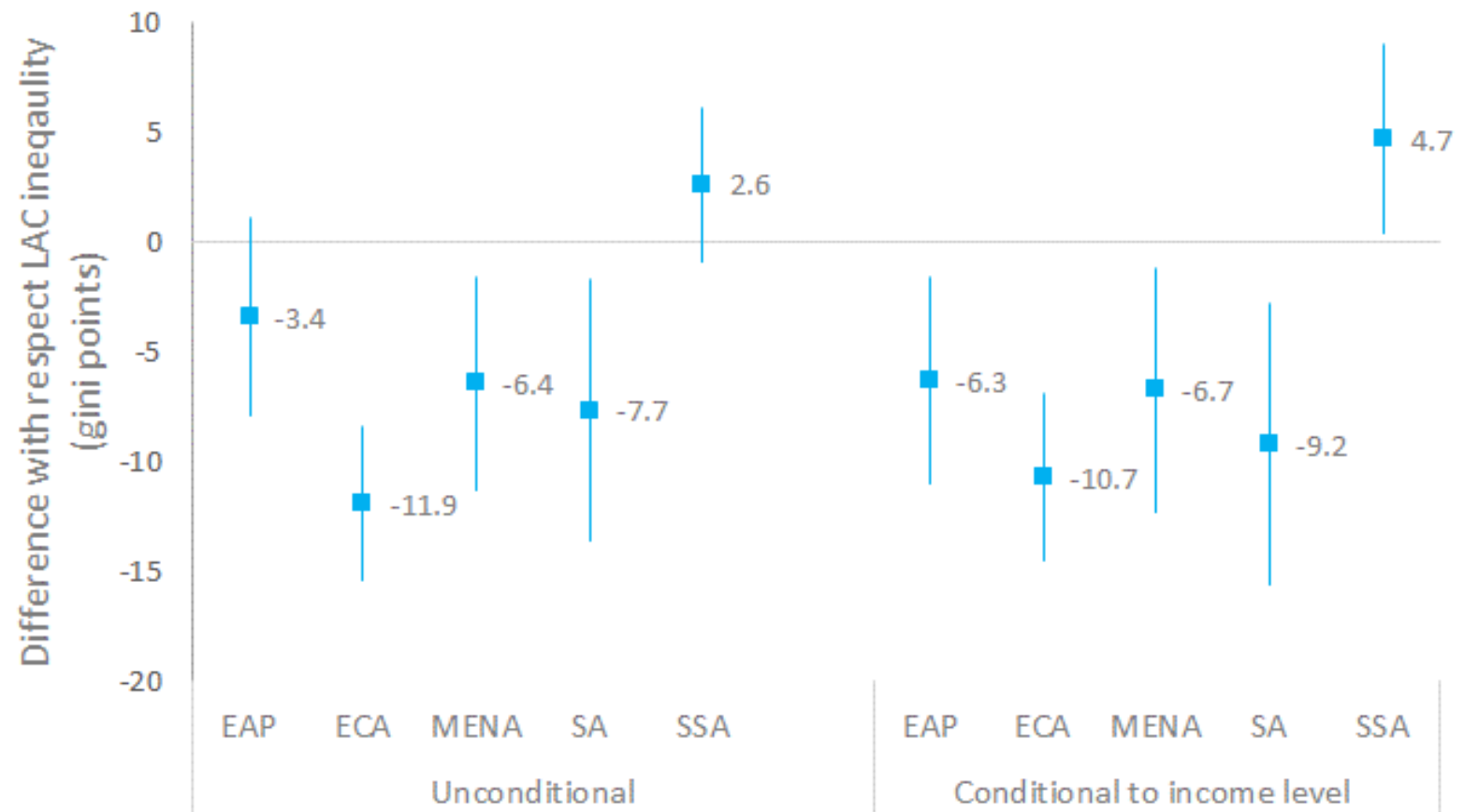
Weighted averages of the Gini coefficient



Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

Still, Latin America is the **second most unequal region** in the world, just behind Sub-Saharan Africa,

Benchmarking inequality in Latin America with respect to other developing regions, 2013



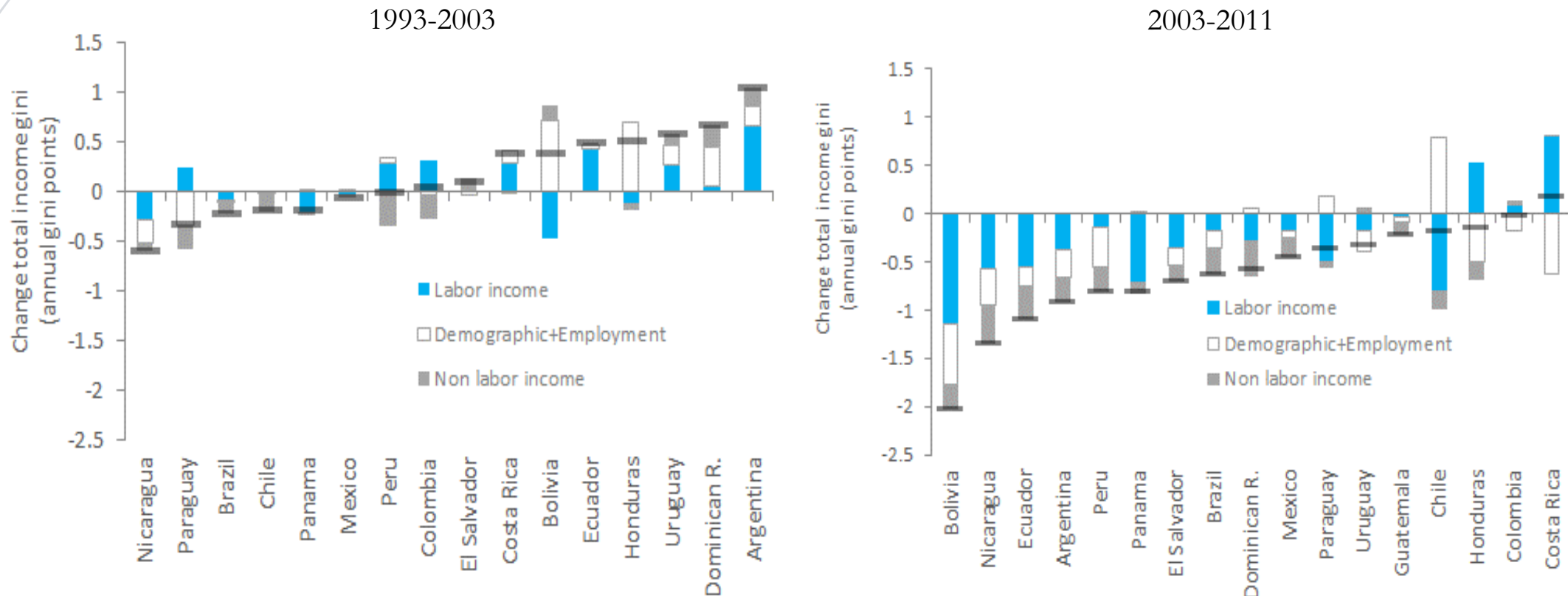
Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).



WHAT IS BEHIND THIS RECENT TREND OF
DECLINING INEQUALITY IN LATIN AMERICA?

Labor income was the most important factor associated to this turning point in income inequality in Latin America

Decomposition of change in total income inequality, Latin American countries

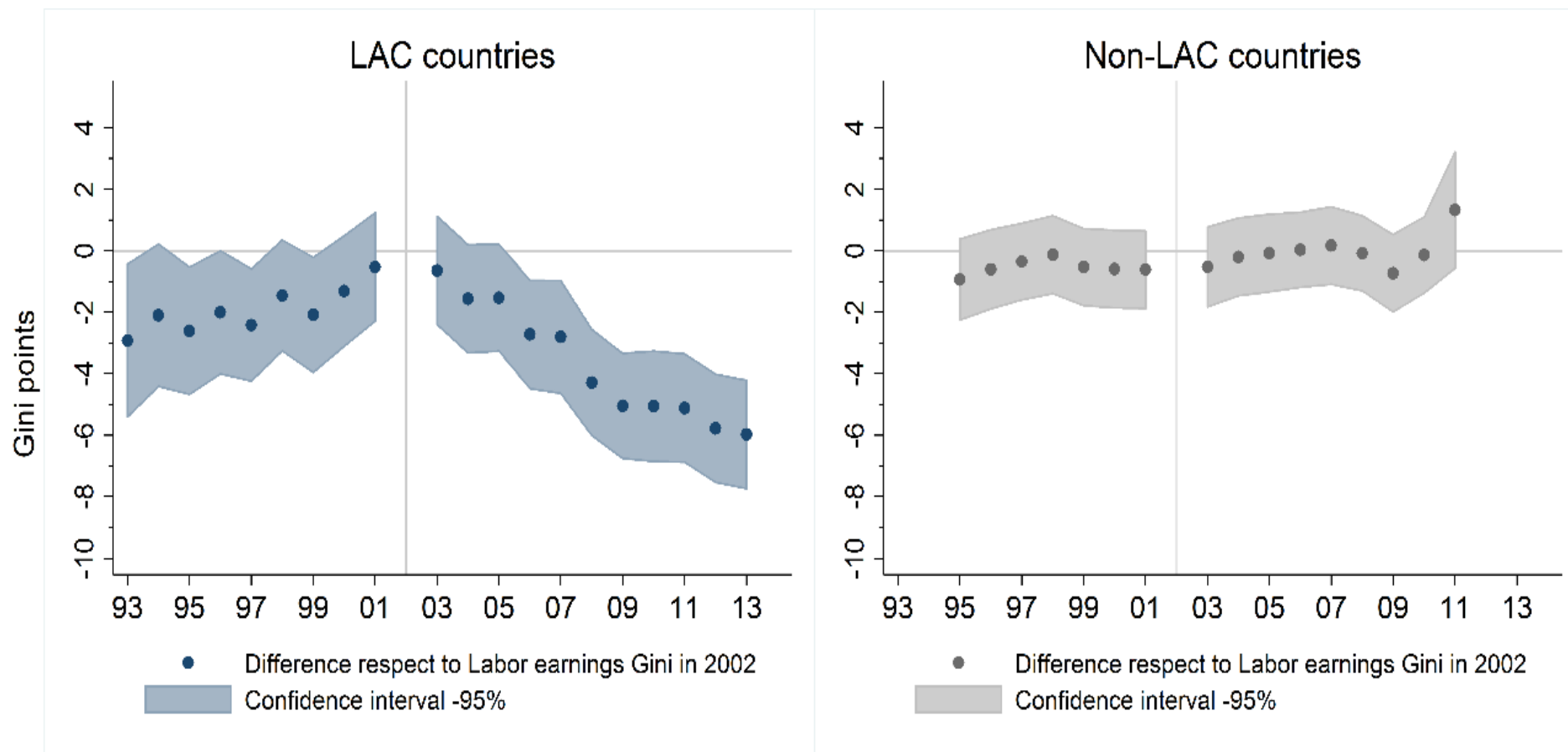


Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

This trend reversal of earnings inequality was a unique phenomenon relative to other middle income countries

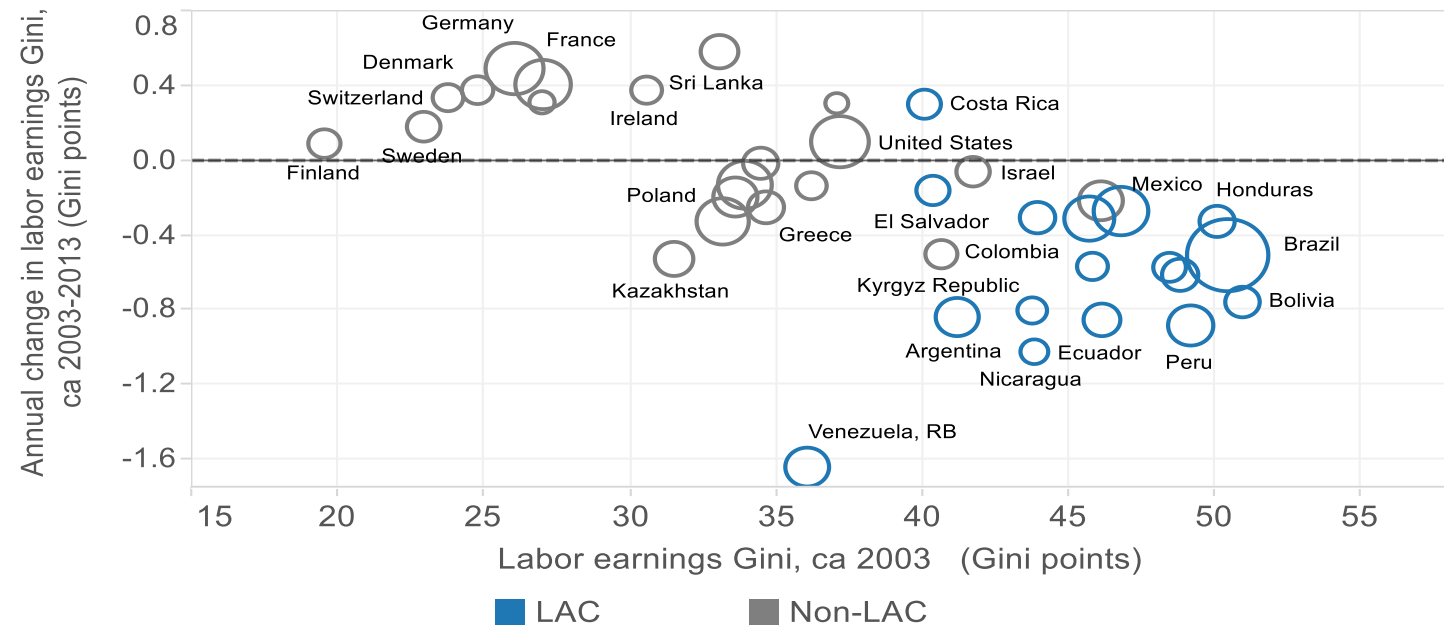
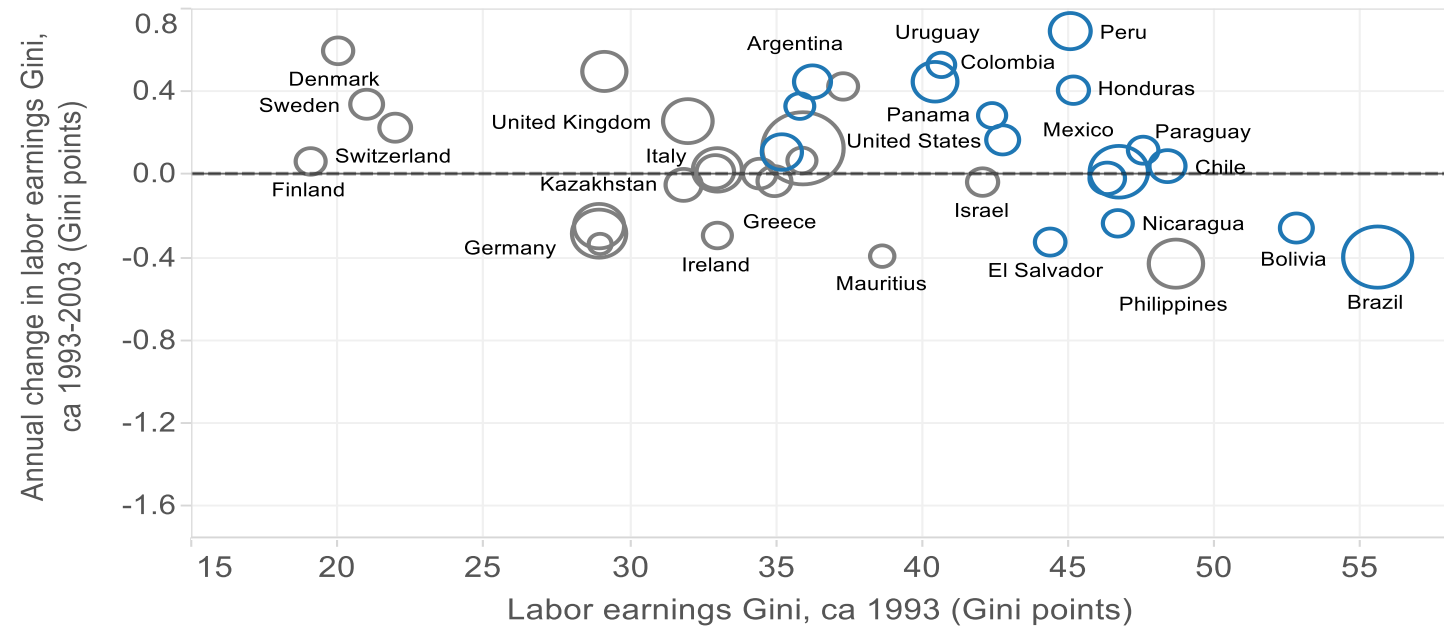
Labor income inequality in Latin America and other MICs

Difference in Gini of labor income with respect its value in 2002, 1993–2013



Source: Calculations based on SEDLAC, Universidad Nacional de la Plata (CEDLAS) and World Bank, and the ILOSTAT Global Wage Report (GWR) database, International Labor Organization.

...but departing from high levels of labor income inequality



Source: Venezuela, RB and the non-Latin American countries: Global Wage Report, ILO. Seventeen Latin American countries: SEDLAC database.



WHAT EXPLAINS THIS UNIQUE SUCCESS
STORY?

Previous studies

Large evidence documenting changes in income inequality in LA sharply contrasts with scarce evidence on factors behind changes in labor income inequality

Most studies focus on understanding drivers behind the fall in the education premium (Manacorda, Sánchez-Páramo, and Schady 2010; Gasparini et al. 2011, Cornia, 2014).

Following Katz and Murphy (1992), several applications to Latin American countries to study “price effects” (i.e changes in skills premium):

- Mexico (Montes Rojas 2006), Chile (Gallego 2011), Panama (Galiani 2009), Manacorda et al. (2010) on the five largest economies in Latin America, and Gasparini et al. (2011), which is the broadest study in terms of spatial coverage (17 Latin American countries) and time coverage (1990s and 2000s).

Recently, Fernandez and Messina (2016) applied this framework, including variations in the experience premium, to Argentina, Brazil and Chile.

This paper is more related to Azevedo et al. (2013), but that paper focuses its analysis on a decomposition method proposed by John, Murphy, and Pierce (1993).



This study...

- Takes stock of the main determinants of labor income inequality and the earnings structure (relative returns of different skills/attributes) in Latin America
- Also, to a lesser degree, seeks to contrast these trends with those of other middle- and high-income countries in the world.
- Examines these changes in terms of real earnings growth. Because different movements in real earnings could lead to the same change in relative returns to different attributes, but not to the same conclusions about the underlying causes.
- Presents a set of stylized facts on the variance in earnings across workers of observable different characteristics and residual earnings inequality. Unlike other studies, we do not impose any assumption about the dynamics of the residual distribution.
- Conducts analysis at the regional level -- we use data from the SEDLAC database on 17 countries in LA which account for >90% of total population.
- Takes a long-term perspective (1990s) to define whether the factors considered important in the 2000s were also present during the previous decade, when labor market inequality showed a different trend.

Overview of results and outline

Trend reversal in labor income inequality after 2002 (in 16 of 17 countries but CR).

Supported by:

1. A substantial expansion in real hourly earnings at the bottom of the distribution (but more pronounced in South America).
2. A steady decline in the education premium -- driven by larger growth in labor earnings among less well educated workers relative those with HS or college;
3. A steady fall in the experience premium -- most experienced workers have seen a reduction by almost half in this premium with respect to younger workers;
4. Small effects of the gender wage gap -- which has narrowed consistently since the mid-1990s, but it has been almost stagnant since early 2000s;
5. The urban-rural earnings gap narrowed sharply during the 2000s; and,
6. Key role of unobservable attributes of workers. More than half of the decline was derived from a reduction in residual earnings inequality.

Framework to analyze relative returns

- Wage inequality can be seen as a result of differences in the productivity of workers related to differences in attributes, plus an error term.
- Some attributes can be easily observed (education and experience), while others are more difficult to observe or measure (such as ability and soft skills).
- We follow the framework of Autor and Katz (1999), Lemieux (2006), and Autor, Katz, and Kearney (2008) to analyze overall earnings inequality by:
 - Separating the range in the earnings of workers with different and similar observed attributes.
 - The latter term—residual earnings inequality—may be a product of differences in the unobserved skills among otherwise equal observable workers.
- Mechanisms through which returns to human capital (education and experience) and other worker characteristics change are the result of interactions among demand, supply, and institutional factors, and beyond this study

Some definitions and assumptions

For our analysis, we estimate standard Mincer equations (Mincer 1974), but in a semiparametric way using a multiple dummy specification, as follows:

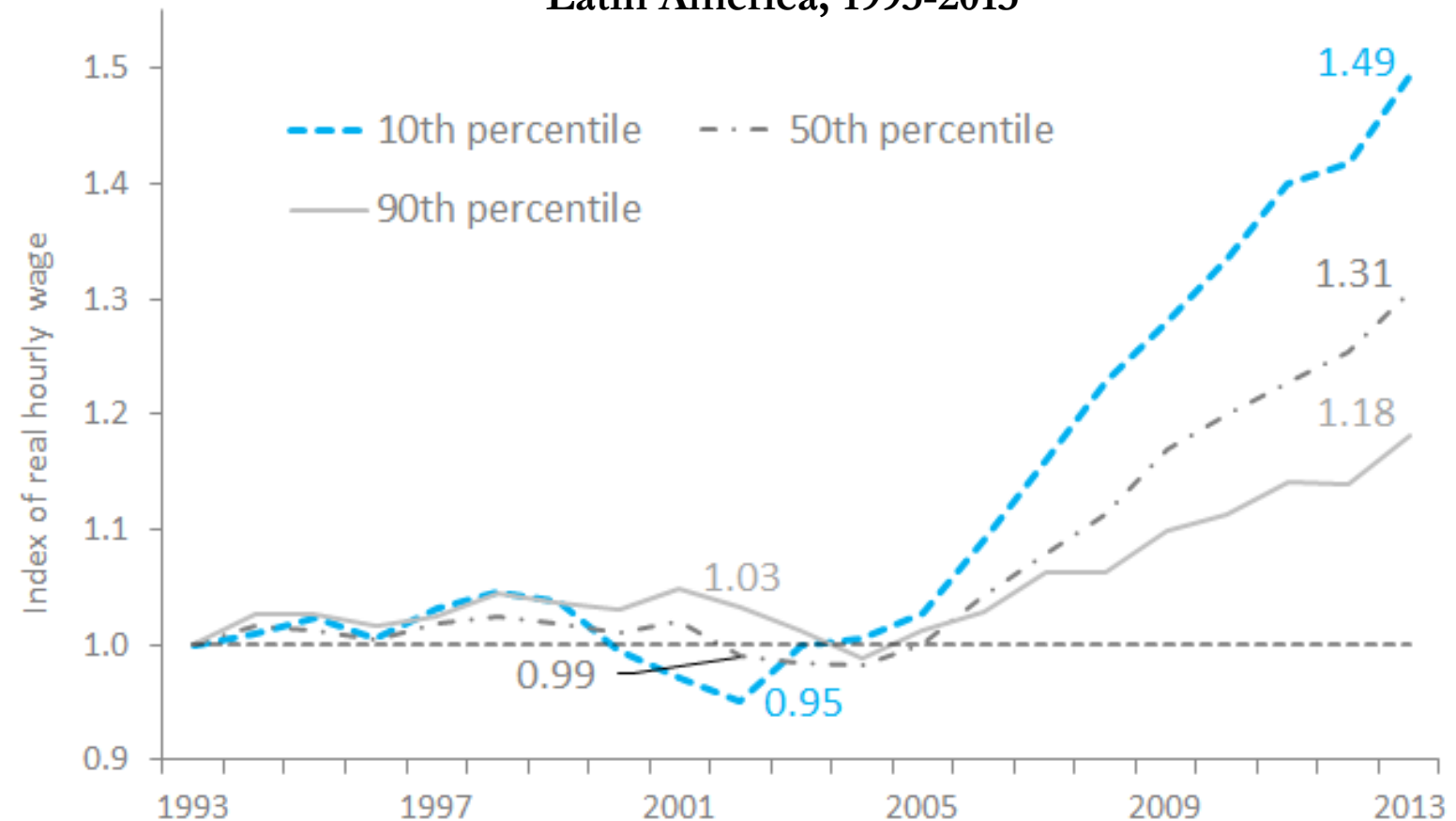
$$\log(W) = f(\text{education}, \text{experience}, \text{gender}, \text{region}, e)$$

where W corresponds to the real hourly earnings (of full-time workers).

- We focus on the hourly earnings inequality of the main occupation of full-time workers between 15 and 65 years of age.
- Education is measured through three educational categories: college, high school, and primary education.
- Experience refers to potential experience and is divided into five groups: 0–5 years, 6–10 years, 11–20 years, 21–30 years, and 31+ years.
- Gender and urban are dummies for men and for urban residence.
- We assume $f(*)$ is a linear function so that the parameters associated with each covariate can be interpreted as the returns to worker characteristics.

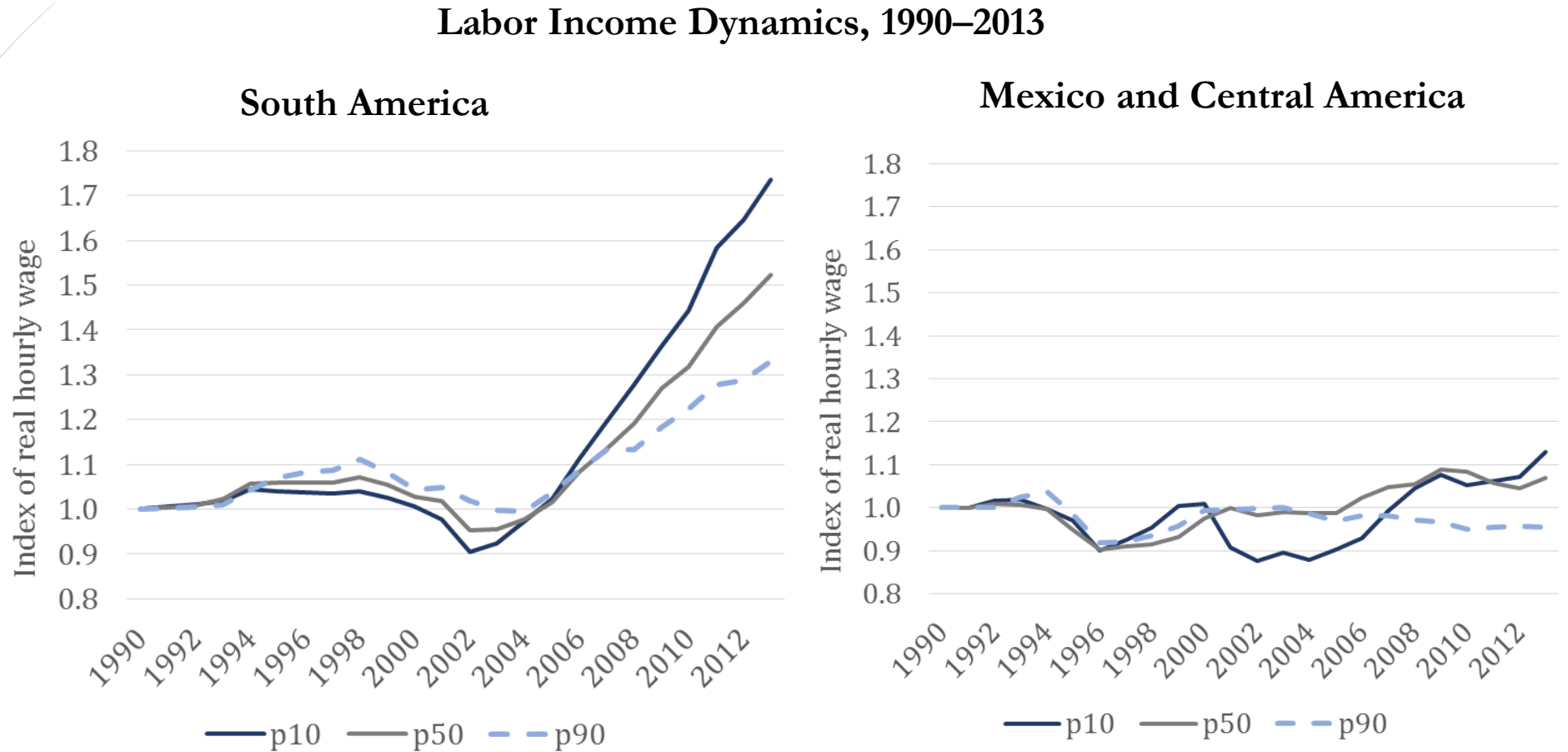
1. Labor incomes grew faster at the bottom. Since 2002, these have risen by more than 50 percent

Index real hourly earnings, 10th, 50th and 90th percentile of the labor income distribution
Latin America, 1993-2013



Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

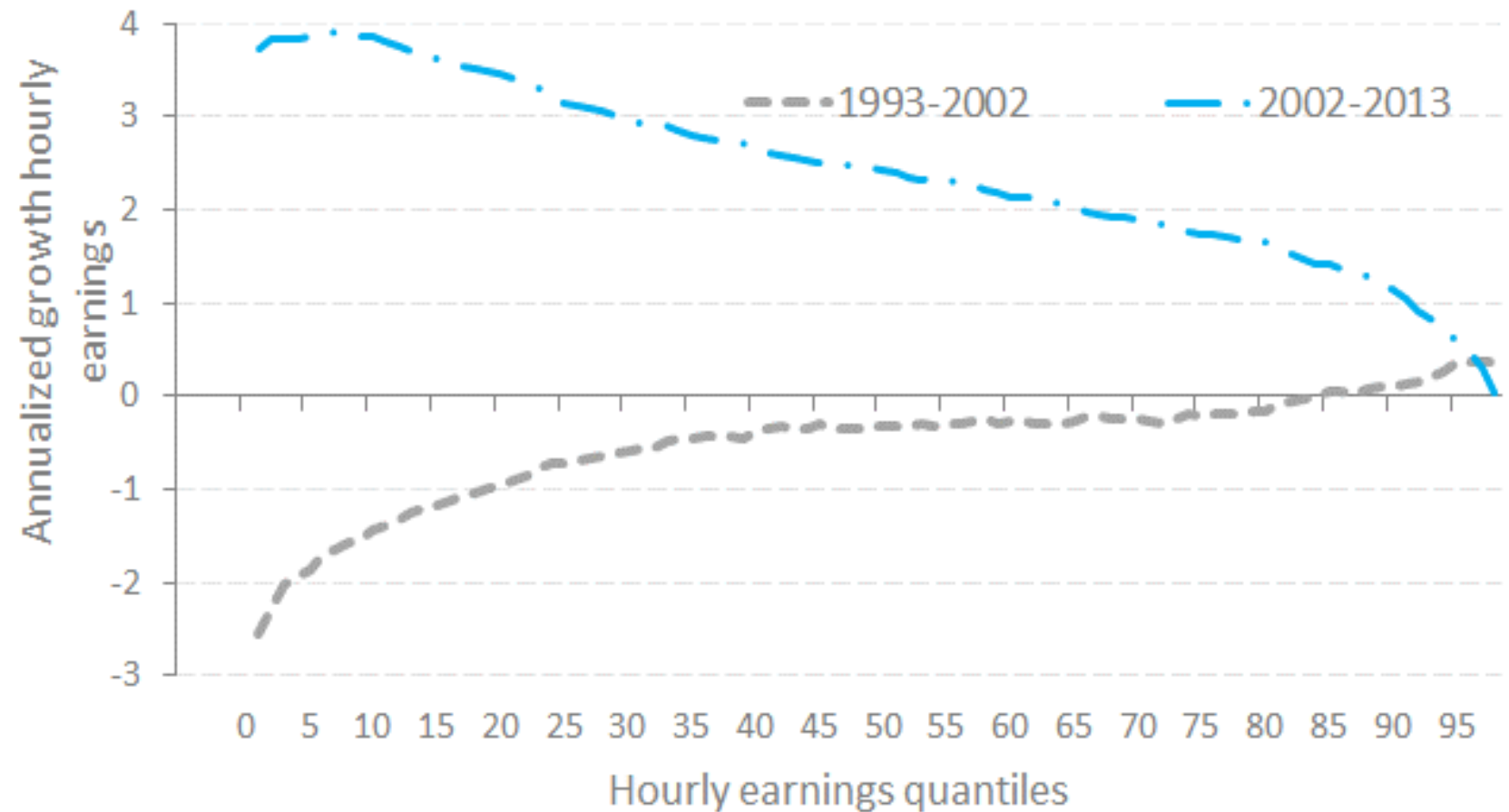
1.b. A trend more pronounced (and with different causes) in South America, where inequality fell more sharply



Source: Silva et al. (2016), based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

1.c The redistribution momentum of labor income led to gains in real terms for almost all parts of the distribution during the 2000s

**Growth incidence curve, real hourly earnings
Latin America, 1993-2002 and 2002-2013**

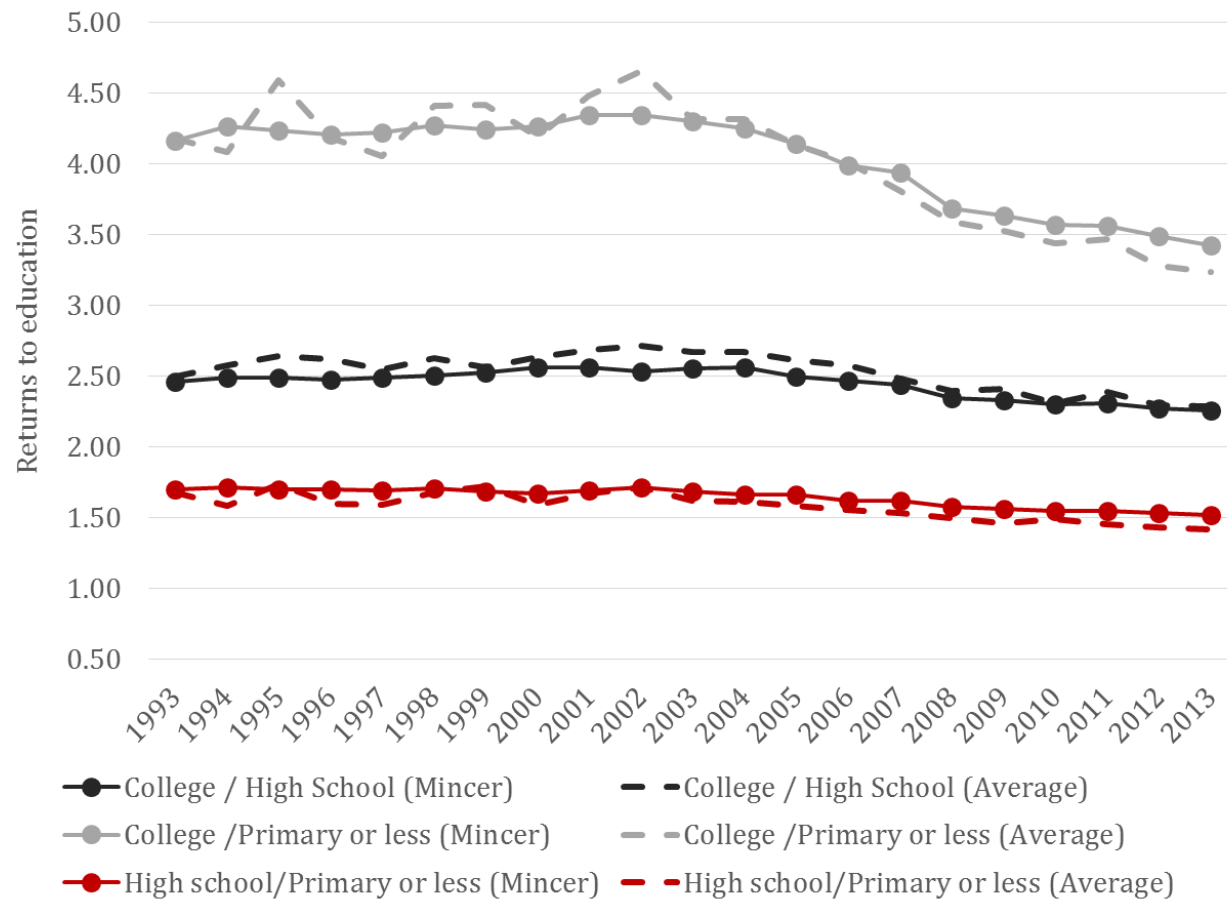


Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

2. Labor incomes **grew faster for unskilled workers** than for skilled workers since early 2000s, after being relatively stable in the 1990s

Returns to education Latin America, 1993-2013

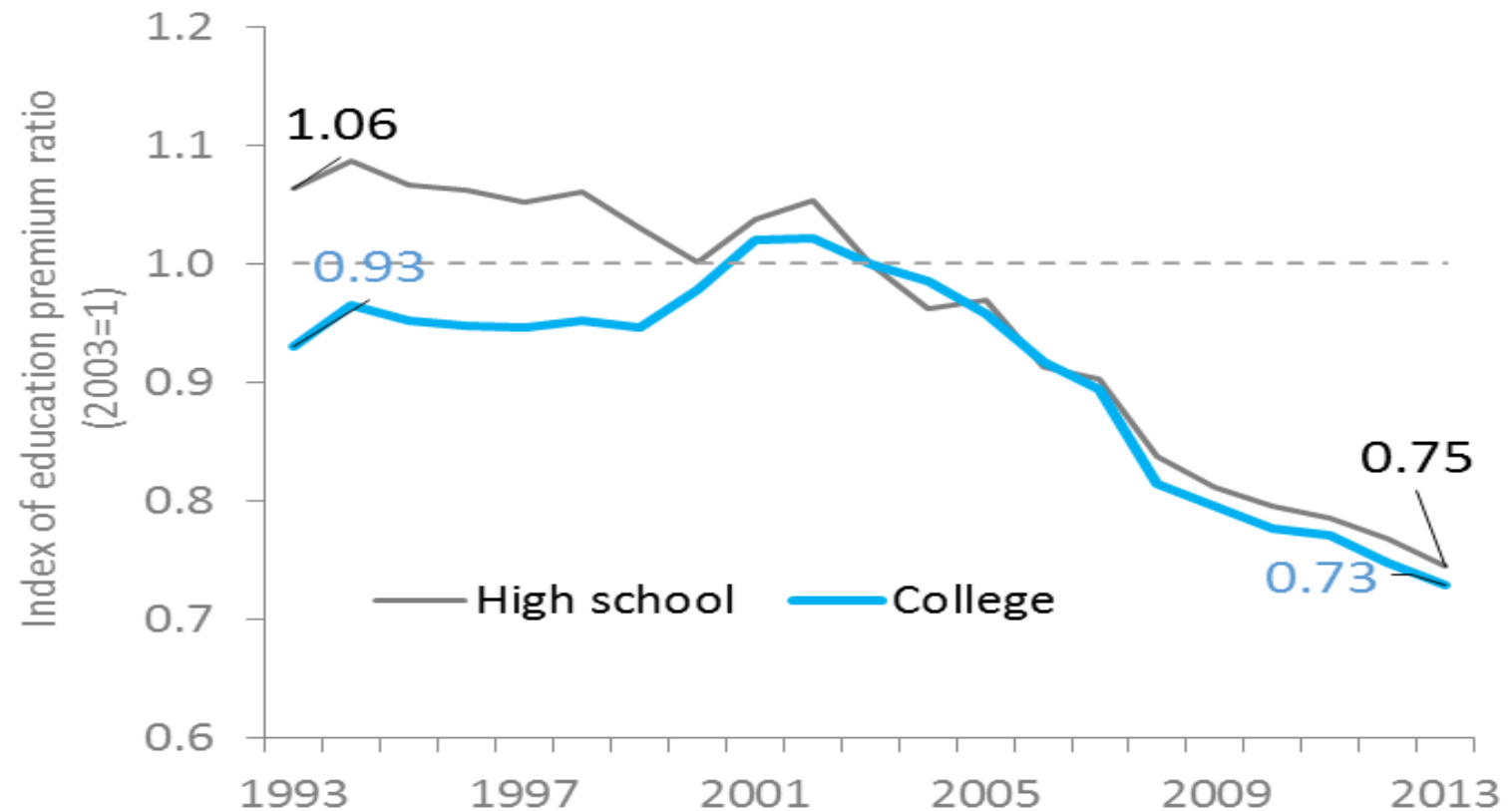
(Wage ratios)



Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

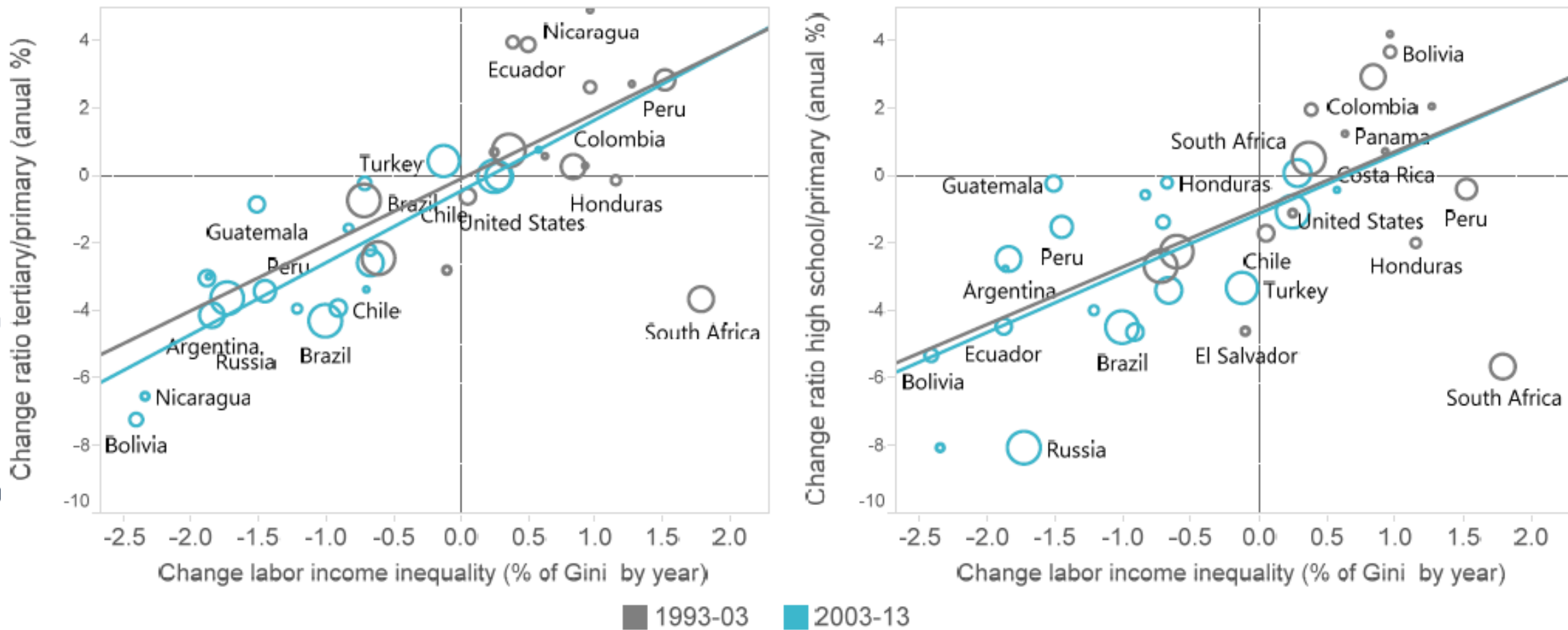
2.b. The average gap between college-educated workers and workers with primary schooling narrowed by 25% after 2003

Earnings gap between workers with greater educational attainment and workers with primary education or less, Latin America, 1993-2013



Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

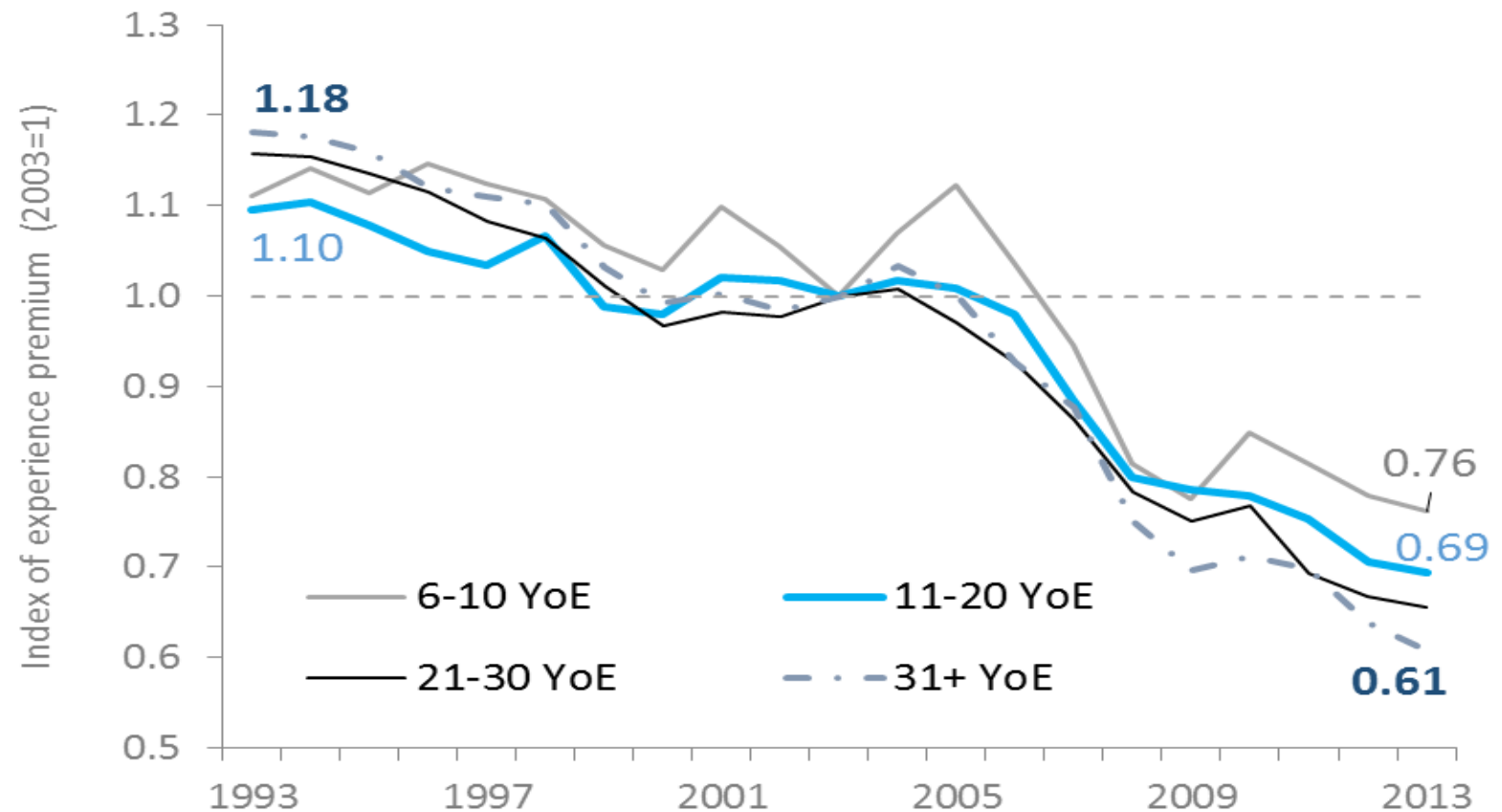
Lower wage inequality linked to a reduction in the earnings premiums of workers with HS and college education (relative to primary education)



Sources: Seventeen Latin American countries: SEDLAC database; Russia: the Russia Longitudinal Monitoring Survey; Post Apartheid Labor Market Series: South Africa; Turkey: I2D2-LFS; the United States: I2D2-IPUMS.

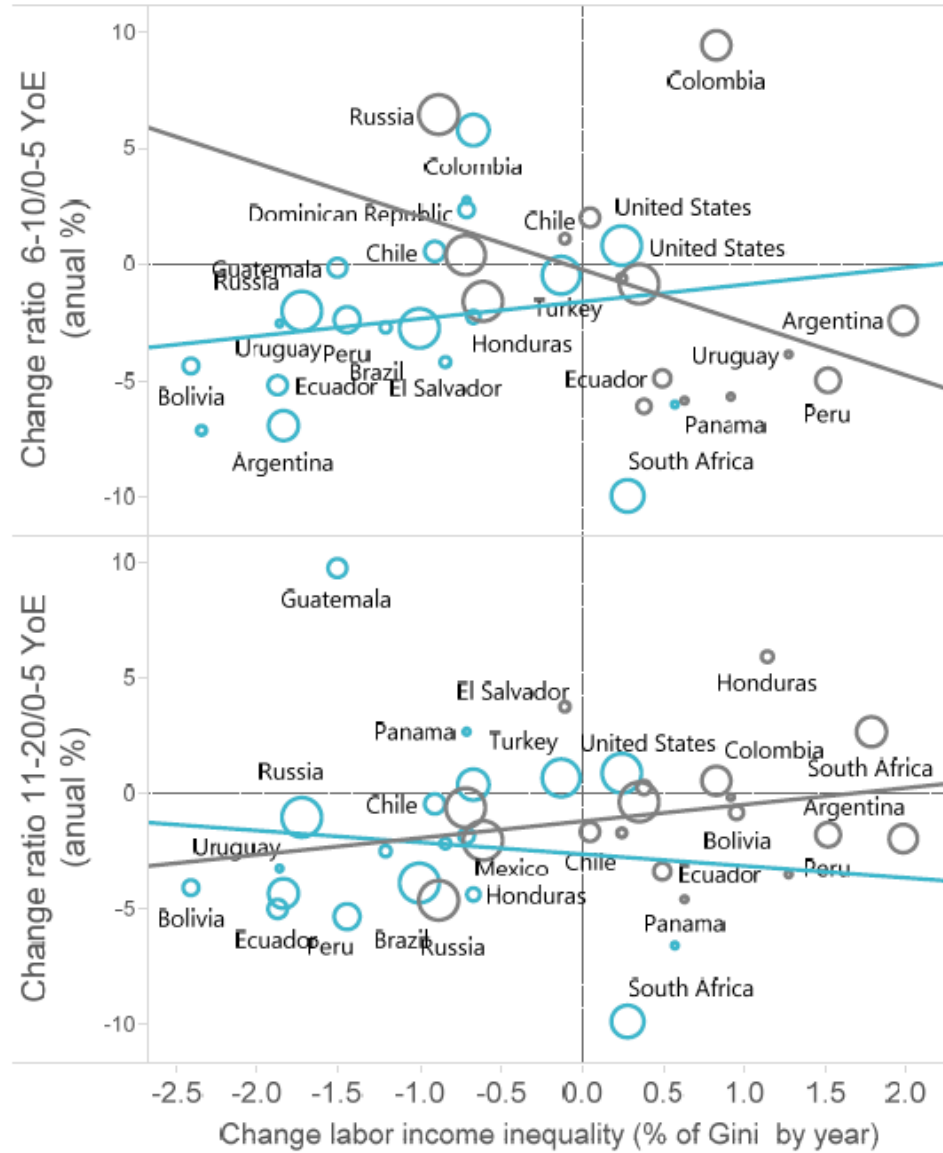
3. The most experienced workers have seen a reduction by almost half in their experience premium with respect to younger workers (continuous process since 1990s, which accelerated in the 2000s)

Earnings gap at different ratios of potential experience, Latin America, 1993-2013

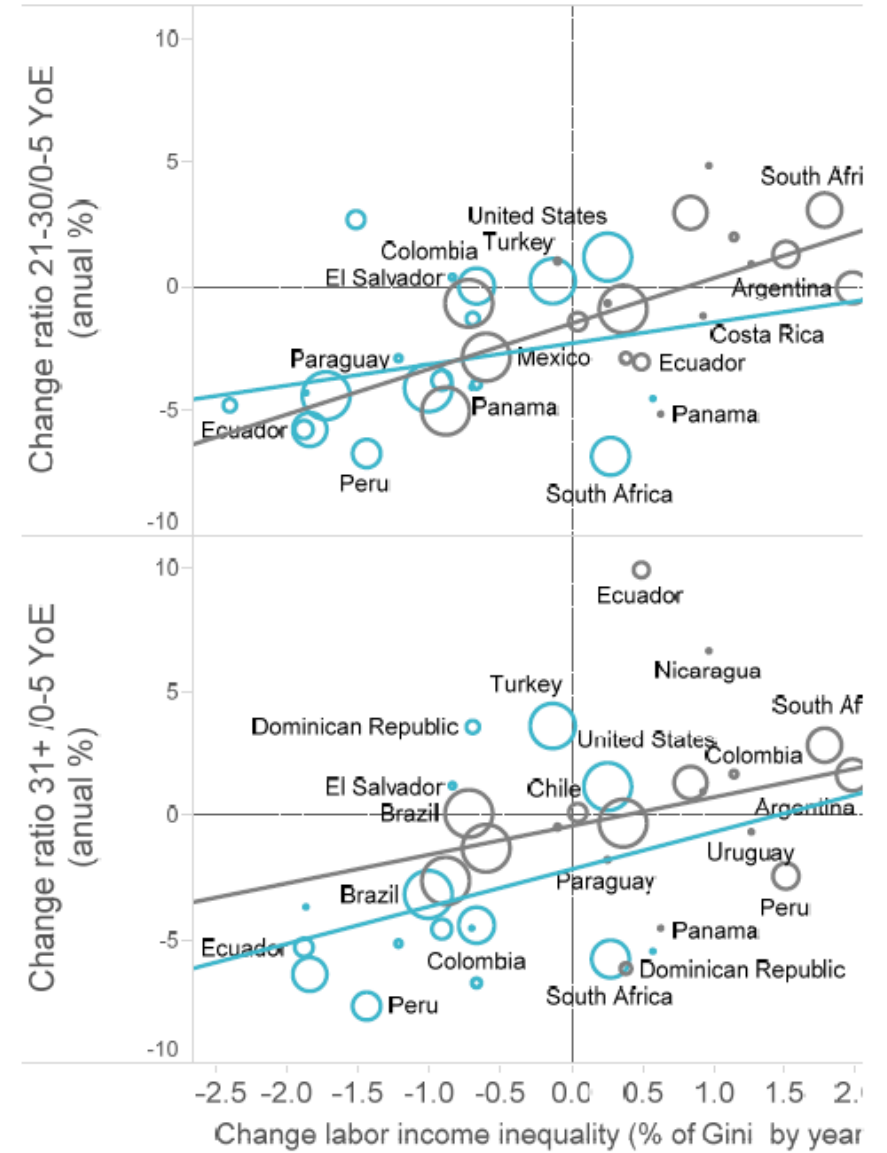


Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

a. Low (6–10) and lower middle (11–20) experience groups



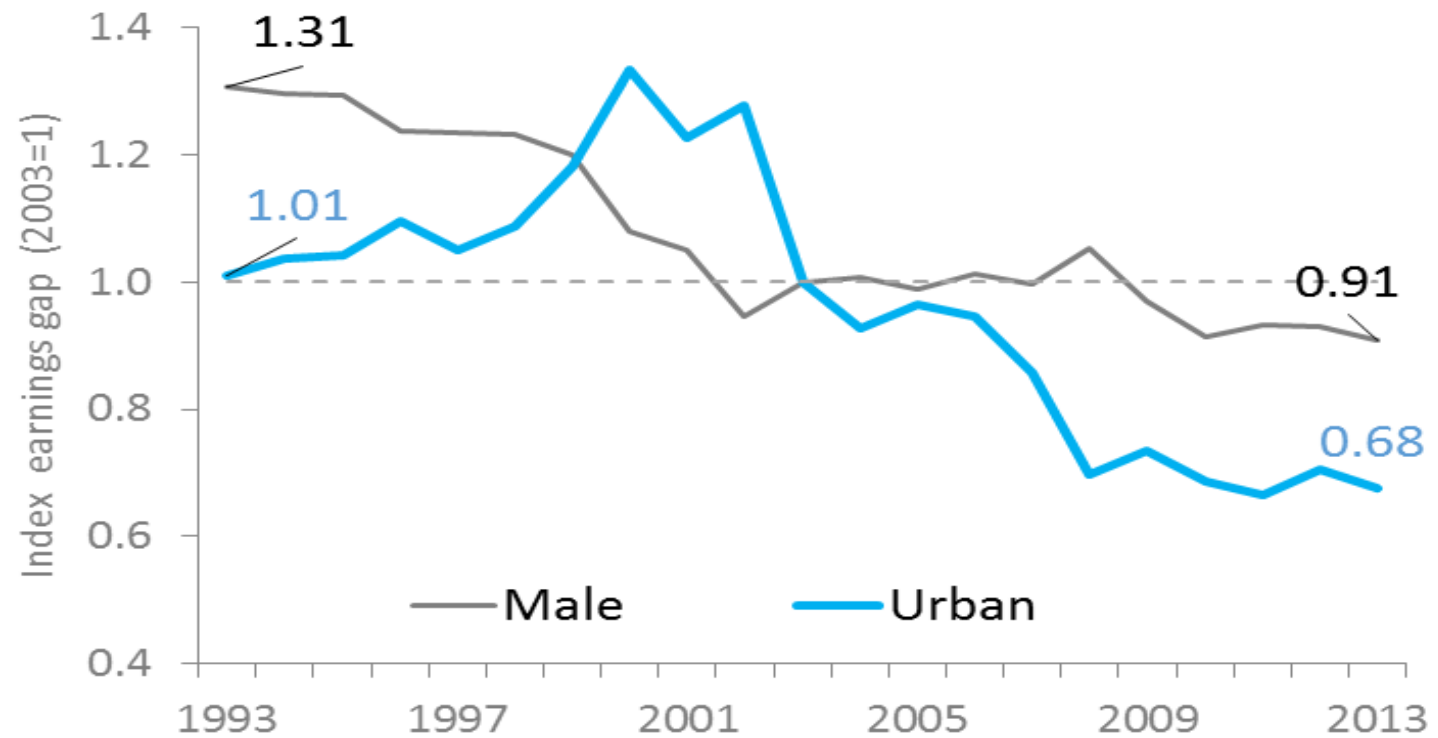
b. Upper middle (21–30) and high (31+) experience groups



■ 1993-03 ■ 2003-13

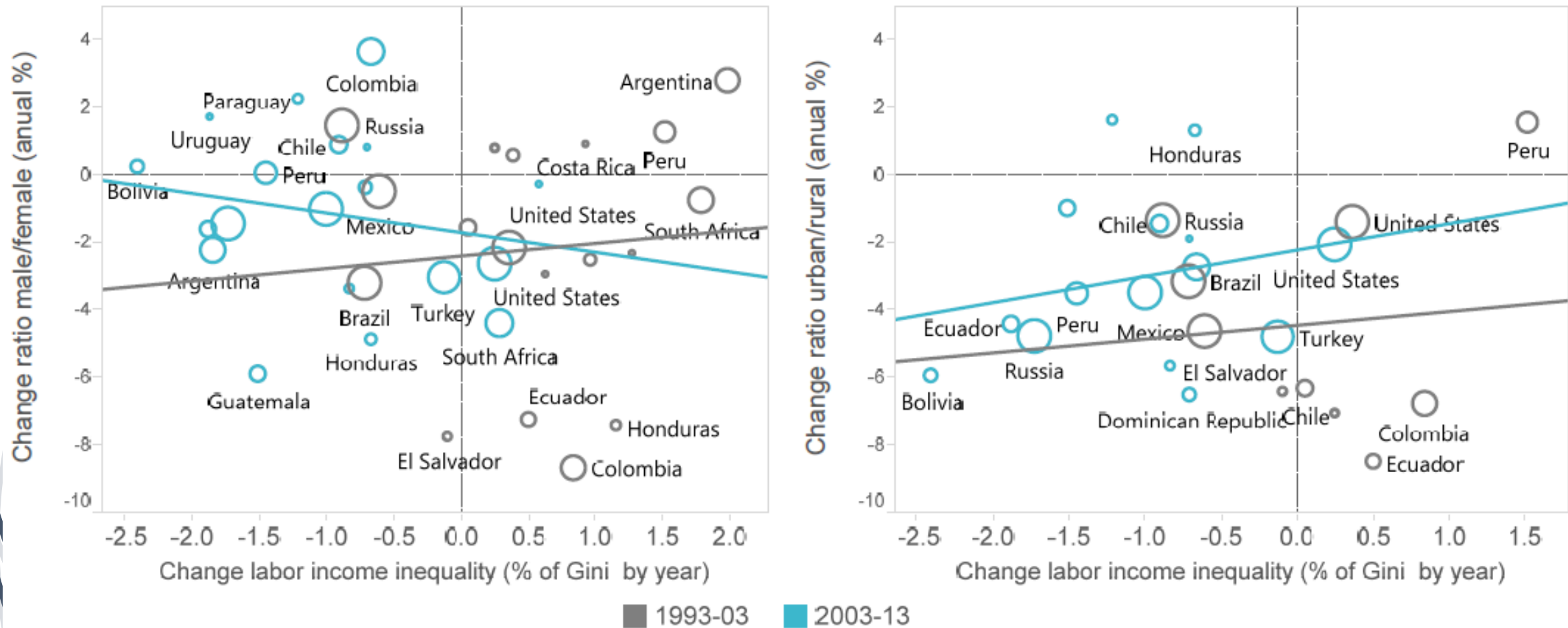
4. & 5. While the gender wage gap was almost stagnant during the 2000s, the urban-rural earnings gap narrowed sharply

The gender and urban/rural earnings gap, Latin America, 1993-2013



Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

Not clear link between declining wage inequality and gender wage gap, but stronger association with larger declines in the urban-rural wage gap

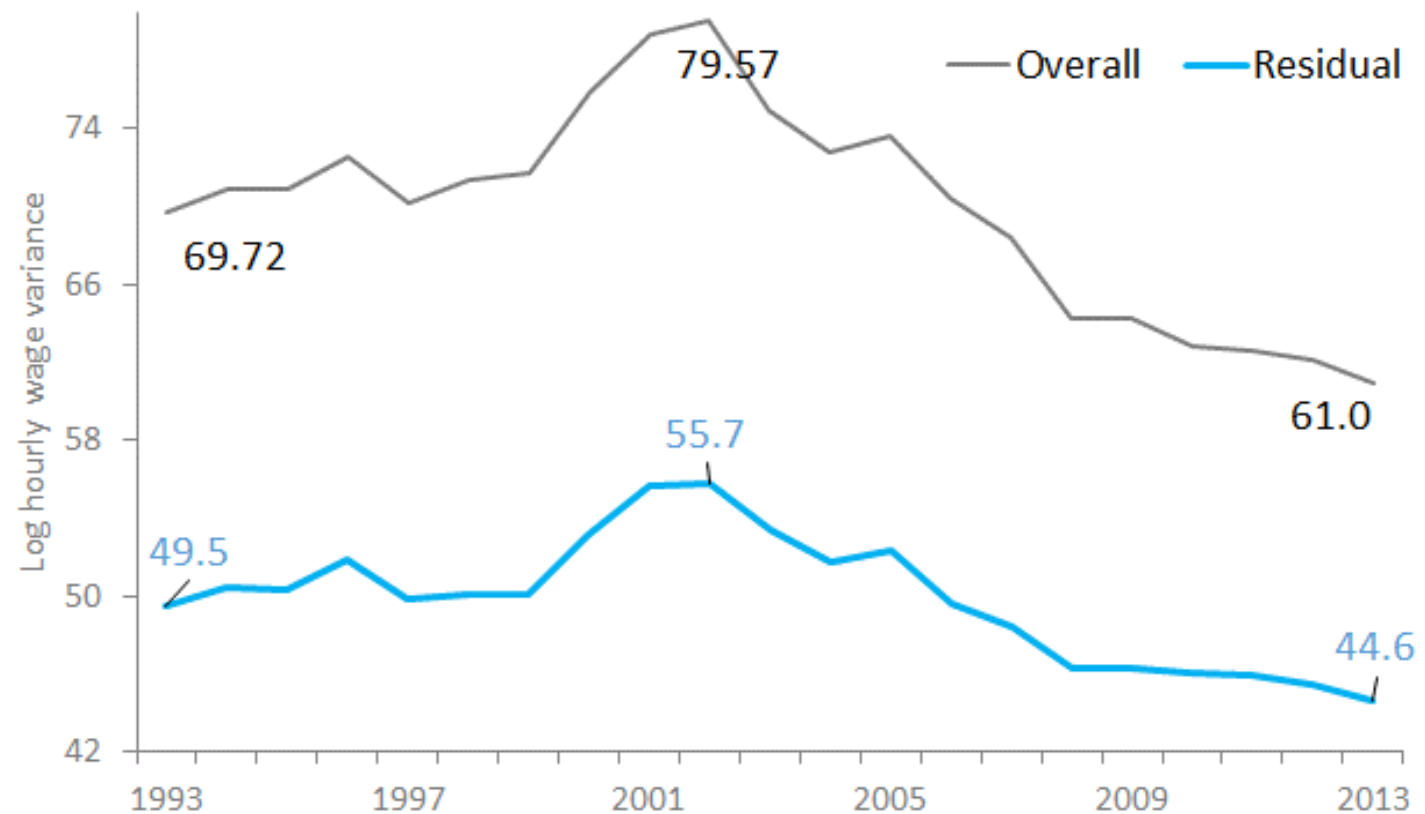


Sources: Seventeen Latin American countries: SEDLAC database; Russia: the Russia Longitudinal Monitoring Survey; Post Apartheid Labor Market Series: South Africa; Turkey: I2D2-LFS; the United States: I2D2-IPUMS.

6. Key role of unobservable attributes of workers

About 70 percent of inequality in labor earnings is mostly a result of the inequality across workers with similar observable attributes (i.e. residual earnings inequality).

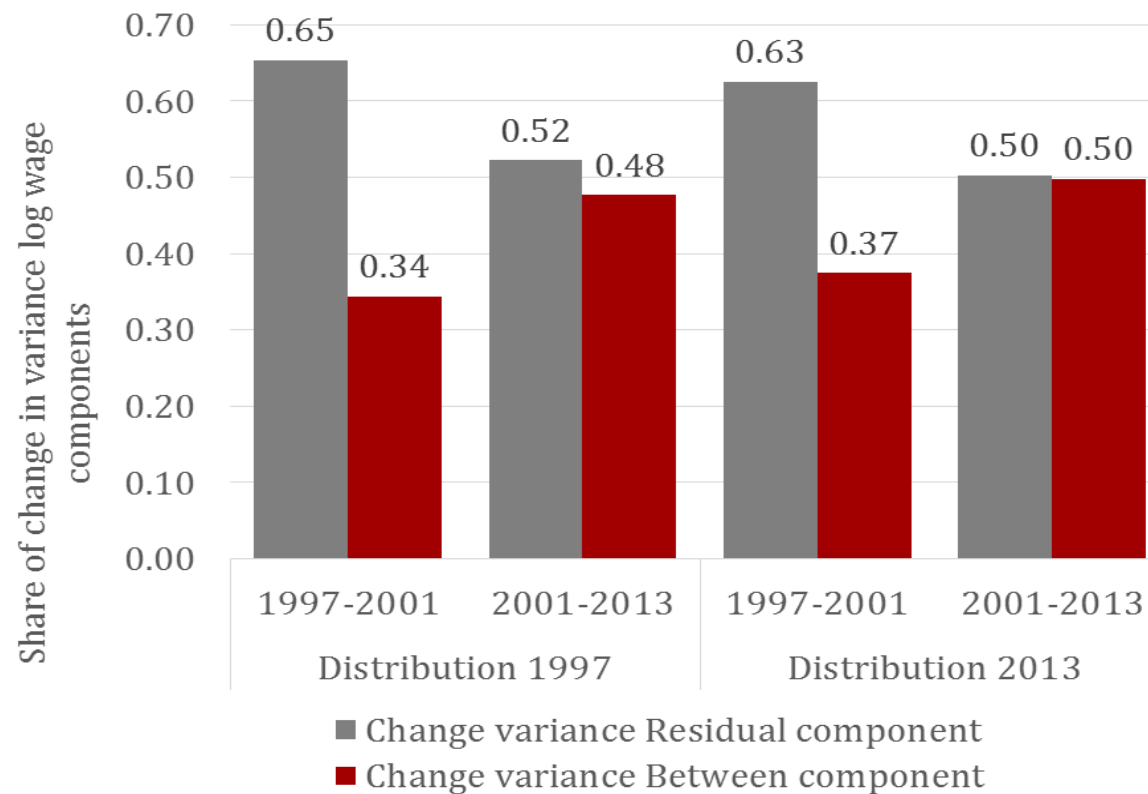
Overall and residual earnings inequality, Latin America, 1993-2013



Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).
Note: The residual component is the variance that is not explained by the Mincer model

6.b. Even with a fully specified model, with interactions between all variables and using sector and occupation, the **size of the residual explains at least half the total variance** (Silva et al. 2016).

Decomposition of Changes in Wage Inequality into Changes Within and Between-Group, Latin America, 1997-2013



Source: Silva et al (2016) based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).

Summary of results

Variation in different measures of earnings gaps (Average percentage change by year Latin America, 1993-2013)

Relative returns	Average growth rate by year (percentage)					
	1993–99	1999–03	2003–10	2010–13	1993–03	2003–13
Education						
High school	-0.5	-0.7	-2.9	-2.1	-0.6	-2.5
Tertiary	0.3	1.4	-2.8	-2.1	0.8	-2.7
Potential experience						
6–10 YoE	-0.8	-1.3	-1.9	-3.4	-1.0	-2.4
11–20 YoE	-1.6	0.3	-2.8	-3.7	-0.9	-3.1
21–30 YoE	-2.1	-0.3	-2.9	-4.9	-1.4	-3.4
31+ YoE	-2.1	-0.8	-3.6	-4.9	-1.5	-3.9
Gender and area of residence						
Male/Female	-1.4	-4.2	-1.1	-0.2	-2.3	-0.9
Urban/Rural	2.8	-3.8	-3.9	-0.5	-0.1	-3.2

Source: Calculations based on SEDLAC (Socio-Economic Database for Latin America and the Caribbean).



Conclusions

- The decline in labor income inequality observed in LA during the 2000s was associated with more rapid growth rates in the earnings of less well paid jobs.
- This trend is robust to the selection of inequality measure, the aggregation method, countries selected, and the definition of the time interval.

The main observable factors that explain this trend reversal trends are:

- A drop in the college/primary education premium and the acceleration in the decline of the high school/primary education premium;
- A noticeable decline in the experience premium across all age groups, observed beginning in the early 2000s; and,
- Strong evidence of a narrowing in the urban-rural earnings gap.

Areas of future research:

- The influence of supply, demand and institutional factors
- Residual earnings inequality, which explains at least half of the increase and the reduction in earnings inequality.



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