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Chronicle of a Deceleration Foretold

Income inequality in Latin America in the 2010s [♣]

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Abstract

After a decade of strong progress toward the goal of reducing the high levels of income disparities, there are clear signs of a deceleration in the pace of inequality reduction in Latin America. This paper argues that the deceleration is the result of two set of reasons. First, several of the driving factors of the fall in inequality in the 2000s have lost strength, due to "natural" motives; and second, the external conditions faced by the Latin American economies have worsened in the early 2010s, making further reductions in inequality more difficult.

JEL Code: D63, I31, J11, J21, J31, J82, N36

Keywords: inequality, income, distribution, Latin America

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1. Introduction

After decades of frustrating socioeconomic performance, in the 2000s Latin America experienced several years of sustained economic growth and a remarkable reduction in the level of income inequality. Understanding the factors behind this distributive "miracle" has become one of the main challenges in the research agenda. The answers are unavoidably partial and conjectural, since many factors simultaneously affected the income distributions of the Latin American economies, from various external shocks to different public policies. The debate over the causes of the inequality fall has relevant implications on the issue of sustainability. Does the change in the inequality pattern in the 2000s imply a definitive "break with history" or it was just a transitory improvement? [1]

In this paper we provide evidence on a new fact that could be central to the debate in the forthcoming years: the fall in income inequality has significantly slowed down its pace in Latin America in the 2010s, with even signs of stagnation and reversion in some economies. The evidence for the deceleration is new and nuanced, and the phenomenon could be just transitory, but given the difficulties in reducing inequality that have been pervasive in Latin America, the signs of deceleration should be taken seriously.

This paper makes two contributions to the debate on inequality in Latin America. First, we document patterns of income inequality with information updated to 2014 from our database of standardized microdata from national household surveys of all Latin American countries (SEDLAC). Second, we discuss some likely factors behind the recent deceleration based on the economic theory and the (still scarce) available empirical evidence.

We conclude that the recent deceleration is likely the result of two sets of motives. First, the strength of some of the driving factors of the fall in inequality in the 2000s has debilitated, due to "natural" reasons; and second, the external conditions faced by the Latin American economies have worsened in the early 2010s, making further reductions in inequality more difficult.

The rest of the paper is organized as follows. Section 2 describes the data sources and briefly documents the main patterns of income inequality in Latin America over the last decades. Section 3 and 4 discuss the main factors that could account for the fall in inequality in the 2000s and the recent deceleration,

[1] See de Ferranti *et al.* (2004) for a discussion of the historical roots of inequality in Latin America, and the possibility of "breaking with history".

whereas section 5 briefly examines the role of a factor that has been highlighted in the literature: the expansion in education. Section 6 closes with some concluding remarks.

2. The facts

2.1. The data

The evidence for income inequality in this paper is obtained by processing microdata from national household surveys, which are part of the Socioeconomic Database for Latin America and the Caribbean (SEDLAC), a project jointly developed by CEDLAS at the Universidad Nacional de La Plata and the World Bank's LAC poverty group. SEDLAC contains information on more than 300 household surveys in all Latin American countries.

Household surveys are not uniform across Latin American countries and in several cases not even within a country over time. The issue of comparability is of a great concern. Owing to that situation, we have made all possible efforts to make statistics comparable across countries and over time by using similar definitions of variables in each country/year, and by applying consistent methods of processing the data (see SEDLAC (2014) for details on the harmonization process).

The information from household surveys has some relevant deficiencies; chiefly among them are the scarce information on capital income, and the absence of very rich households in the samples, two facts that call for the use of alternative data sources, such as tax records, to complement the picture of inequality drawn from household surveys. Unfortunately, the evidence on top incomes from administrative sources is still very limited in Latin America, and of little help to identify recent patterns in inequality in the region (Alvaredo and Gasparini 2015, and Cornia, 2015).

2.2. Patterns

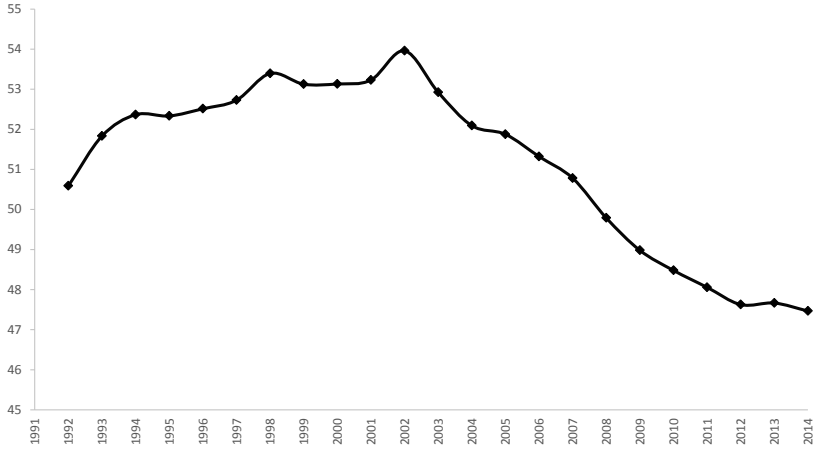
Figure 1 shows the mean Gini coefficient for the distribution of household per capita income across 15 Latin American countries over the period 1992-2014.[2] The patterns are robust to various methodological decisions, including the

[2] Guatemala, Nicaragua and Dominican Republic are not included in the analysis, due to lack of data for several years in the period under analysis.

consideration of various inequality indices (see SEDLAC website).[3] Inequality soared in the 1990s and strongly fell in the 2000s. The contrast between the two decades has been widely documented and discussed in other studies (*e.g.* López Calva and Lustig (2010), Gasparini *et al.* (2011), Gasparini and Lustig (2011), Azevedo *et al.* (2011), Cord *et al.* (2014), CEPAL (2014)). While the mean Gini coefficient grew at a rate of 0.3 points per year between 1992 and 2002, it fell 0.7 points a year between 2002 and 2010.

A new potentially worrying pattern has emerged in the latest years. The fall in inequality has substantially decelerated in the 2010s: the Gini fell 0.3 points a year between 2010 and 2014, less than half the speed in the previous period, and actually it remained virtually stagnant between 2012 and 2014.

Figure 1: Gini coefficient - Latin America



Source: Own calculation based on SEDLAC (CEDLAS and The World Bank).
Note: unweigthed average across 15 Latin American countries of the Gini coefficient for the distribution of household per capita income.

The deceleration has been experienced by most Latin American economies (Table 1). Only in Colombia, Ecuador and Uruguay did inequality fall more intensively in the 2010s than in the 2000s. In the rest of the countries either the fall in the Gini coefficient slowed down (Argentina, Brazil, Chile, El Salvador, Panama, Peru), or inequality became stagnant or even increasing (Bolivia, Costa Rica, Honduras, Mexico, Paraguay, Venezuela).[4]

[3] Reporting averages for each year requires having a balanced panel. Since several countries in the region do not have (or release) national household surveys each year, we construct a balanced panel filling the gaps where surveys were missing by interpolating information from adjacent surveys, and by using reports from national statistical offices.

[4] Actually, in some cases the changes are not statistically significant (see SEDLAC website for details).

Table 1: Annual changes in Gini coefficient

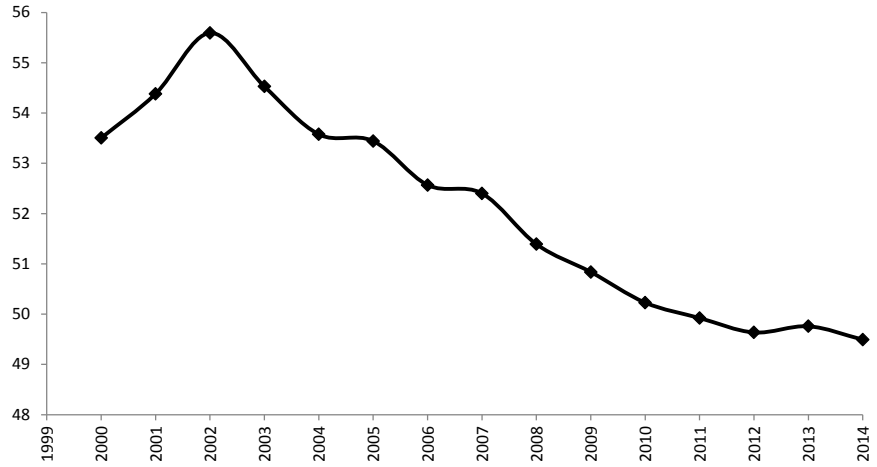
	1992-2002	2002-2010	2010-2014
Argentina	0.8	-1.1	-0.5
Bolivia	0.6	-1.5	0.1
Brazil	0.1	-0.7	-0.4
Chile	0.0	-0.4	-0.2
Colombia	0.6	-0.3	-0.5
Costa Rica	0.5	0.0	0.1
Ecuador	0.0	-0.8	-0.9
El Salvador	-0.1	-0.9	-0.7
Honduras	0.6	-0.5	0.4
Mexico	-0.3	-0.5	0.4
Panama	0.1	-0.6	-0.1
Paraguay	0.5	-0.7	0.0
Peru	0.4	-1.0	-0.5
Uruguay	0.6	-0.1	-0.9
Venezuela	0.6	-1.1	0.0
Southern South America	0.4	-0.6	-0.4
Andean region	0.4	-1.0	-0.4
Central America	0.2	-0.5	0.0
Latin America	0.3	-0.7	-0.3

Source: Own calculation based on SEDLAC (CEDLAS and The World Bank).
Note. Southern South America: Argentina, Brazil, Chile, Paraguay and Uruguay. Andean region: Bolivia, Colombia, Ecuador, Peru and Venezuela. Central America: Costa Rica, El Salvador Honduras, Mexico and Panama.

There are some differences by subregion (Table 1), in particular between South America and Central America. Compared to Central America, inequality increased more in South America in the 1990s and fell more intensively during the 2000s. In the 2010s, whereas inequality continued falling in most South American countries, although at a slower pace, in most Central American economies and Mexico inequality reached a plateau or even increased.

The deceleration is also present in the distribution of labor incomes (Figure 2). Whereas the mean Gini coefficient for the distribution of labor income fell at a high speed of 0.7 points per year between 2002 and 2010, it reduced the rate of fall to 0.2 Gini points a year in the 2010s. Actually, while earnings inequality decreased in all Latin American countries in the 2000s, it either stopped falling or went up in 7 out of 15 economies in the 2010s.

Figure 2: Gini coefficient of labor income - Latin America



Source: Own calculation based on SEDLAC (CEDLAS and The World Bank).
Note: unweighted average across 15 Latin American countries.

3. A deceleration foretold

After almost a decade of strong and widespread reduction in income inequality, there are signs of deceleration in some countries and even reversal in others. The change in the pattern is recent, and then the analysis of their driving factors is still conjectural and speculative. However, given the relevance of the topic, we believe it is useful to contribute with hypotheses that, although they cannot be proven rigorously yet, they can shed light and motivate the debate.[5]

We put forward the argument that the recent deceleration in the inequality reduction is the result of two sets of factors: first, several of the driving factors of the remarkable fall in inequality in the 2000s have lost strength, due to "natural" reasons; and second, the external situation of Latin America has worsened in comparison with the extraordinary years of the previous decade. Given the first argument, we would have expected a deceleration in the rate of inequality fall even under an economic scenario similar to the one that prevailed in most of the 2000s. The worsening of the external situation reinforced the deceleration. In this section we briefly account for the first argument and defer the discussion of the distributive effects of the economic slowdown to the next section.

[5] Some of the arguments are taken from Gasparini and Cruces (2013).

The factors that are important to explain the fall in inequality in Latin America in the 2000s are different in nature, but some of them share a similar time pattern: they had a considerable equalizing impact in the short/medium run, which tended to peter out over time.

The overshooting of the reforms

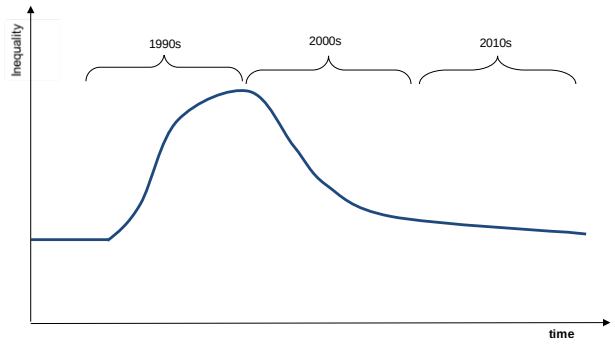
Latin America experienced a strong wave of structural reforms in the 1990s, including trade and capital liberalization, deregulations and privatizations, which triggered a large increase in foreign direct investment and in capital incorporation, in turn associated to skill-biased technological change. Most of the evidence suggests that these transformations induced a rise in earnings inequality, at least in the short/medium run, by curbing the relative demand for unskilled labor.[6]

The strong initial increase in inequality after the reforms, however, may have been an overshoot (Card and Di Nardo, 2006). The shock (*e.g*. the introduction of a new technology, the privatization of a state-owned enterprise, the closing of a firm after the openness of the economy) fully hits the unskilled workers, raising unemployment, poverty and inequality in the short run. However, this strong effect is expected to peter out over time, at least partially, as the economy adjusts to the new situation, and the displaced workers are relocated to other jobs and sectors.

Figure 3 shows a simple diagram of the likely overshooting pattern of inequality after some unequalizing shock. In this story the 1990s is the decade when the reforms take place and the full impact on inequality is experienced, whereas the 2000s is the decade when the economies adjust to the shocks and inequality falls from the initial peak. The gains coming from the rebound effect after the shocks generated by the structural reforms were mostly exhausted in the 2010s, and then a deceleration in the pattern of inequality reduction was expected.

[6] See Feenstra and Hanson (1997), Behrman *et al*. (2007), Sánchez-Páramo and Schady (2003), Galiani and Sanguinetti (2003), Galiani and Porto (2006), Vos *et al*. (2006), Goldberg and Pavnick (2007), Acosta and Gasparini (2007), Herzer et al. (2011) and Viollaz (2013), as examples of a vast literature.

Figure 3: Overshooting in the impact of the reforms on inequality



The macroeconomic crises

In several Latin American countries the unequalizing effect of the reforms was compounded by the impact of some deep macroeconomic crises. A number of countries were hit by severe crises around the year 2000 (Argentina, Colombia, Ecuador, Paraguay, Uruguay, and Venezuela), and all of them witnessed steep drops in GDP and huge, but short-lived, spikes in poverty and inequality.

The argument in this case mimics the one offered for the structural reforms: inequality skyrocketed in the wake of the macro crises of the late 1990s and early 2000s, abruptly fell after a successful stabilization program that reestablished the economic circuits disrupted by the crisis, and then slowly converged toward a new equilibrium.[7] The exhaustion of the rebound effect from the macroeconomic crises may have contributed to the deceleration in inequality reduction in several Latin American countries from the second half of the 2000s.

Monetary transfers

One of the main factors behind the reduction in income inequality in the 2000s in Latin America was the expansion of social protection systems, in particular the implementation of broad-coverage, non-contributory cash transfer programs.[8] The implementation of these cash transfer programs implied a significant raise in the resources allocated to social policies. In fact, while social spending per capita increased on average 50% in the 1990s, it almost doubled in the 2000s. Moreover, the distributive impact of the new programs was substantially higher than the average of social spending, as new technologies

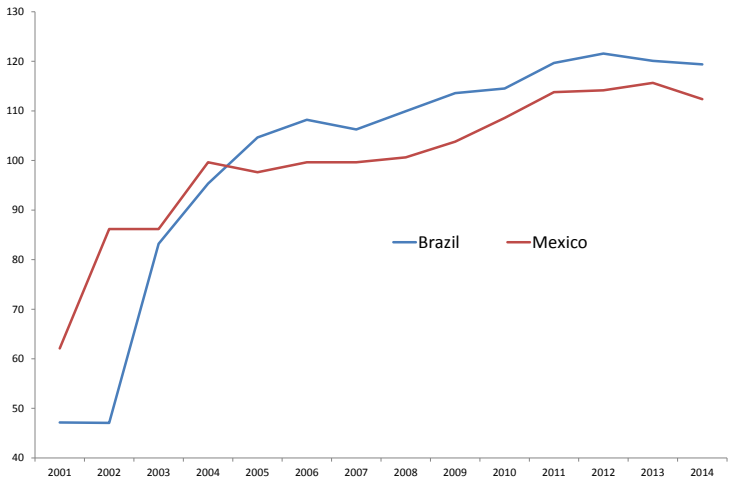
[7] Cornia (2015) states that "the 'rebound effect' seems to explain about a third of the overall regional decline recorded between 2002 and 2010."

[8] For references, see Fiszbein and Schady (2009), Lustig *et al*. (2011), Lopez Calva and Lustig (2010), Cruces and Gasparini (2012) and Azevedo *et al*. (2012).

allowed the implementation of programs that target funds to the most needed at a large scale (Cruces and Gasparini, 2012). Last but not least, the fact that the new transfers were in cash, in contrast to the typical in-kind programs of the previous decades, implied that the policy had a full impact on the inequality that is typically measured: the *income* inequality.

For various reasons the expansion of cash programs faces natural limitations. On the one hand, once most of the poor population is covered, gains in coverage are limited (see Figure 4 for the two largest CCTs in the region). In addition, at some point it is also difficult to increase the real value of the benefit, since it may threaten the fiscal budget constraint, and raise concerns over the potential negative effects on the labor market (Levy, 2008). For these reasons, after the initial expansion it is natural that the size of these programs reaches some equilibrium, and therefore the distributive impact stagnates from that point.

Figure 4: Number of beneficiaries of CCTs



Source: own calculations based on national household surveys.

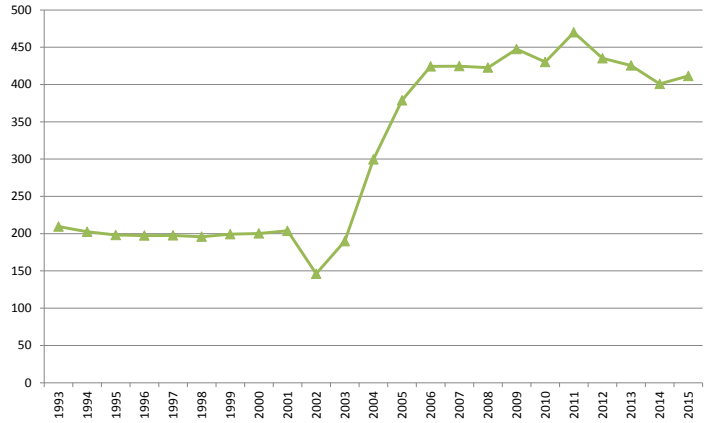
Labor policies

Many countries in Latin America expanded labor policies in the 2000s, partly as a result of a more interventionist policy approach, but also as a consequence of stronger labor markets. In particular, the real value of the minimum wage climbed in most countries, helping to increase the earnings of low-income workers, and contributing to the reduction in earnings inequality (Bosch and Manacorda, 2010; Maurizio, 2015).

The increase in the real value of the minimum wage faces some natural limitations, even under strong labor markets, as further increases in the

minimum wage from certain level may compromise employment objectives. Figure 5 shows the case of Argentina, one of the countries with more ambitious labor policy in the 2000s. The figure illustrates the stark contrast between an almost flat minimum wage in the 1990s and a strong rise in the 2000s. Several authors have documented the equalizing impact of that increase over the distribution of earnings (Maurizio 2015, Arcidiacomo, 2015). The increase, however, stopped in the mid-2000s, in fact when the Argentinian economy was still booming. Likely, the lack of room to increase the minimum wage without serious consequences over employment motivated the same authorities that propitiated the large increases in the previous years to curb the growth in the minimum wage.

Figure 5. Argentina: minimum wage in real pesos

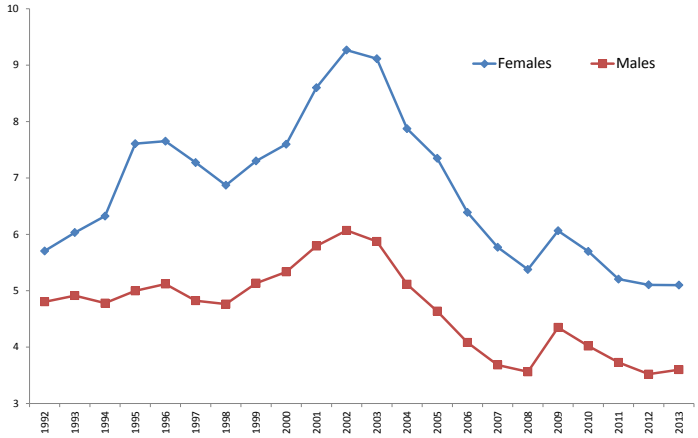


Source: Own calculations based on official minimum wage and CPI from INDEC (until 2007) and Estudio GB (from 2007). Note: constant pesos of 1995.

Unemployment

Latin American countries succeeded in expanding aggregate demand and lowering unemployment rates during the 2000s. The reduction in unemployment contributed to the fall in inequality through two channels: directly, by boosting the incomes of people who had previously not been employed, and, indirectly, by putting increasing upward pressure on wages, particularly of unskilled workers. However, the reduction of unemployment becomes increasingly difficult once the "natural" rate is approached. From that point the gains in inequality reduction through this channel become meager. Figure 6 illustrates a slowdown in the reduction of the unemployment rate in the late 2000s; part of this could be attributed to worse external economic conditions to the region (see next section), but part is just the natural pattern when the economy has already reached low levels of unemployment.

Figure 6. Unemployment rates. Latin America



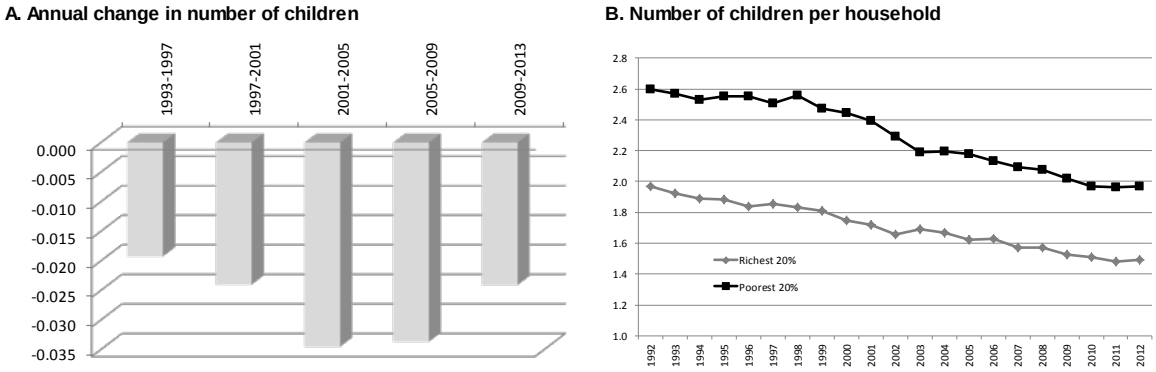
Source: own calculations based on national household surveys.
Note: Unweighted mean for 15 Latin American countries.

Demographic factors

Differential changes in family size across income strata could affect income inequality. Most Latin American countries in the 2000s experienced a sharp decline in the number of children in poor households, implying larger per capita incomes, and fostering labor force participation, especially among women. The income equalizing impact of this pattern was far from negligible in several countries (Badaracco *et al*., 2015).

The reduction in the number of children in poor families was sizeable; on average for Latin America it went from 2.6 to less than 2 in about a decade. Naturally, that rate of falling fertility cannot be sustained over time. In fact, the intensity of the fall slowed down in the 2010s (see Figure 7), implying a deceleration of the equalizing impact through this demographic channel.

Figure 7: Number of children per household



Source: Own calculations based on national household surveys. Note: unweighted mean across 18 countries. Women aged 25 to 54 years old.

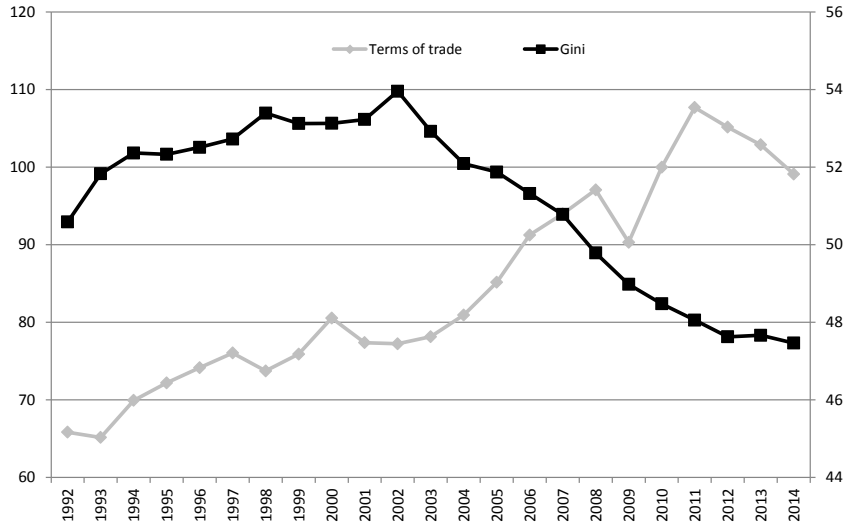
In this section we have discussed equalizing factors that were stronger in the 2000s and debilitated over time, and therefore help to understand the deceleration in the fall of inequality, even if the scenario of very positive economic performance of the 2000s had continued. But unfortunately for the region, that did not happen.

4. The end of the tailwind

Latin American economies enjoyed extraordinary favorable external conditions in the 2000s. For instance, the terms of trade, which had wandered up and down in the 1990s, began to surge in the early 2000s, rising by 40 percent, on average, between 2002 and 2011. The increase was more pronounced for South American economies, rich in natural resources. The inflow of remittances that had rose 13% between 1992 and 1998 (as share of GDP), jumped on average 151% in the following six years. The combination of improved external conditions with prudent macroeconomic policies allowed almost a decade of robust economic growth, with relative low inflation (by Latin American standards) and unemployment.[9]

[9] Ignoring 2009, per capita GDP grew at 4% on average in the 2000s.

Figure 8: Terms of trade and inequality



Source: Own calculations based on SEDLAC (CEDLAS and The World Bank), and WDI (World Bank).

This booming scenario may have contributed to the reduction in inequality at least through two channels: the labor market and social spending. First, economic growth implied an expansion in the aggregate demand for labor, which was depressed in most countries after the turbulent years of the structural reforms and the macroeconomic crises. The reduction in unemployment was a contributing factor to the reduction in inequality through the channels discussed above. Stronger labor markets allowed governments (in most cases new governments with a more progressive agenda) to implement more ambitious labor policies, raising the minimum wage and supporting unions and collective bargaining processes.

Latin American economies had also grown in the 1990s but with less intensity and with a fundamental difference: growth was accompanied (and fueled by) reforms that changed the structure of production, reducing the relative demand for unskilled labor. In fact, in several countries GDP rose at the same time that unemployment, informality and inequality increased. The situation was different in the 2000s, as growth leaded by improved external conditions was more generalized and less disruptive, benefitting all sectors, in particular those who were left behind in the previous episode. For instance, the construction sector, intensive in low-skilled labor, strongly expanded in most economies.

The positive economic scenario was instrumental to the reduction in inequality also through a second channel: it allowed a surge in the supply of fiscal resources, which made it possible to put more ambitious spending policies into place. The dramatic increase in social policies was also driven by other factors (more pressure for redistribution after a decade of increasing inequality, more

progressive governments, new technologies for massive cash transfer programs), but the increased availability of fiscal resources was certainly a crucial one. For instance, many have argued that the increase in social spending in the 2000s was mainly the result of windfalls in commodity-related revenues, rather than the consequence of tax reforms (*e.g.* Jiménez and López Azcúnaga, 2015).[10]

The role of private transfers, in particular remittances, may have also been important. In some Latin American countries remittances skyrocketed in the 2000s, and may have contributed to the reduction in inequality, although the evidence on their distributive impact is rather mixed (Acosta *et al.* (2008); Battiston (2010); Nyarko and Gyimah-Brempong (2010); McKenzie and Rapoport (2010)).

The tailwind might be running out of steam. After a large increase only interrupted by the 2009 crisis, terms of trade have declined in the 2010s, amounting to a fall of 8% between 2011 and 2014, driving by a fall in the commodities the region exports. Remittances also fell 21% in that period. As Figure 8 illustrates, this coincides with the deceleration in the reduction of the Gini coefficient. Although making causal interpretations is certainly bold, the arguments sketched above suggest that the negative external shocks may have had some influence on the patterns of inequality in the region. In fact, all authors that have explored that link find a negative, significant and large relationship between terms of trade and inequality, controlling by other variables (*e.g.* Cornia, 2014; Cruces *et al.* 2015; Marull Maita and Rosero, 2015).

Changes in international relative prices may also affect inequality through an additional channel, besides fueling growth and easing the fiscal constraint. Changes in the relative prices of goods influence the productive structure of an economy, and in turn the demand for productive factors, and the structure of remunerations. For example, countries that move towards the production of goods with low-skill content (for example, a growing importance of unprocessed commodities exports due to favorable terms of trade) are expected to see an increase in the relative demand for unskilled labor over time. The switching in the pattern of commodity prices in the 2010s may have debilitated (or ended altogether) this contributing factor to the fall in earnings inequality that operated in the 2000s.

[10] Notice that this argument on social spending is different from the one sketched in the previous section. There we argued that further expansions in social protection are limited by an already high coverage rate and by the potential effects on labor outcomes. In this section we highlight the growing difficulties in financing the expansion of social spending given the worsening of the economic international scenario.

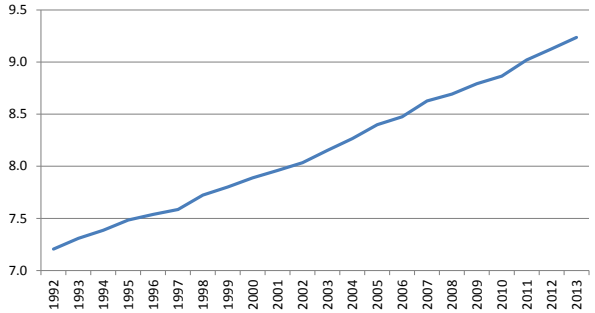
Summing up, some of the fall in the inequality in the 2000s may be attributable to the extraordinary economic conditions enjoyed by the region, including the structure of relative prices. Unfortunately, these conditions have changed in the 2010s, turning the reduction in inequality a more challenging goal, and explaining at least part of the deceleration.

5. And the role of education?

Many authors have emphasized the role of the expansion in education as a driving factor of the inequality reduction in the region, based on the classical model of supply and demand of skills (López Calva and Lustig, 2010; Azevedo *et al*. 2012). An expansion in education leads to a shift in the labor supply of skilled labor which, if not outweigh by a shift in the relative demand for skilled labor, induces a fall in the wage skill premium, and in earnings inequality.

Latin America has undoubtedly made substantial inroads in terms of education, but the evidence suggests that in general these advancements have been at a roughly constant rate over the last decades. Figure 9 shows that on average for the whole region the increase in years of formal education for the adult working population has been smooth. Cruces *et al*. (2015) show that the relative supply of skilled labor grew at roughly the same rate in the 1990s and the 2000s. Given this evidence, it is difficult to see education as the main factor behind the *change* in the inequality patterns. There are no clear changes in the educational trends that can explain the turning point in income inequality in the early 2000s and the deceleration in the early 2010s. To be sure, education is certainly a key factor for the income distribution, but it seems that its influence has remained roughly constant over time.

Figure 9. Years of formal education. Adults aged 25-54. Average Latin America



Source: Own calculations based on SEDLAC (CEDLAS and The World Bank).

Of course, education could have played a more leading role in some particular countries. For instance, the increase in the supply of skilled labor significantly accelerated in Brazil and Mexico in the 2000s. The evidence confirms that the change in that pattern had a sizeable impact on the inequality fall in these economies (Lustig *et al*., 2013; Esquivel *et al*., 2010).

There are two additional arguments for the link between education and the wage premium. The first one states that broader access to education can negatively affect the wage premium to the extent that, for a given educational level, children of poorer households have on average a lower performance, or have unobserved characteristics that make them earn lower wages than their peers from richer households (de la Torre *et al*, 2013). The second appeals to a worsening of the quality of the superior educational system, a fact that would imply a fall in the effective skills as measured in the labor market, and therefore a decline in the skill wage premium (Lustig *et al*., 2013). Again, we find these two arguments plausible but incapable of explaining the rather sudden and strong change in the pattern of earnings inequality in the early 2000s and the recent deceleration.

Battiston *et al*. (2014) identify an additional channel that operates through the composition effect: *caeteris paribus*, a change in the distribution of educational levels may affect the income distribution. Using some microeconometric decompositions, the authors find that the expansion in education in Latin America was unequalizing, confirming the "paradox of progress" of Bourguignon, Ferreira and Lustig (2005). However, this effect also operates rather smoothly over time, and hence it is hardly a driving factor of the recent deceleration.

In summary, the expansion in education may have played a crucial role in affecting the inequality patterns of some countries, but in general we find difficult to explain the strong fall in inequality in the 2000s, and the more recent deceleration based on changes in the relative supply of skilled labor.

6. Concluding remarks

After a decade of strong progress toward the goal of reducing the high levels of inequality, there are clear signs of a recent deceleration in the pace of inequality reduction in Latin America. This deceleration has turned into stagnation and even reversal in some countries.

In this paper we have documented these patterns and speculated on their determinants, based on the scarce literature and the scattered empirical evidence. The relevance of the topic may justify the conjectures based on still rather weak grounds.

We argue that the recent deceleration in the inequality reduction is the result of two set of factors. First, several of the driving factors of the remarkable fall in inequality in the 2000s have lost strength, due to "natural" reasons, and therefore we would have expected a deceleration in the rate of inequality fall even under a positive economic scenario. But the external situation of Latin America has worsened in comparison with the extraordinary years of the previous decade, reinforcing the deceleration through various channels.

Of course, one can argue that the worsening of the external situation was also an expected outcome, as terms of trade were expected to fall for the region as a natural phase of the commodities super-cycle (Erten and Ocampo, 2013; Marull Maita and Rosero, 2015). In this case, most of the factors that were behind the generalized and large fall in inequality in the 2000s in Latin America were in fact expected to lose strength: a deceleration foretold.

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