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## **Income inequality in Latin America**

Recent decline and prospects for its further reduction

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**Abstract:** The paper reviews the extent of the income inequality decline that took place in Latin America in 2002-10 and then focuses on the factors that may explain such decline. These include a lowered skill premium following an expansion of secondary education among the poor, and the adoption of more equalizing tax, labour market subsidies and macro policies by a growing number of progressive governments. Finally, the paper reviews the changes in inequality during 2009-12 and discusses whether and how the recent decline can be sustained over the next decade in the context of sluggish world growth.

**Keywords:** Income inequality, Latin American, global economic conditions, domestic policy changes, political regimes

**JEL classification:** D31, E62, I24, J8

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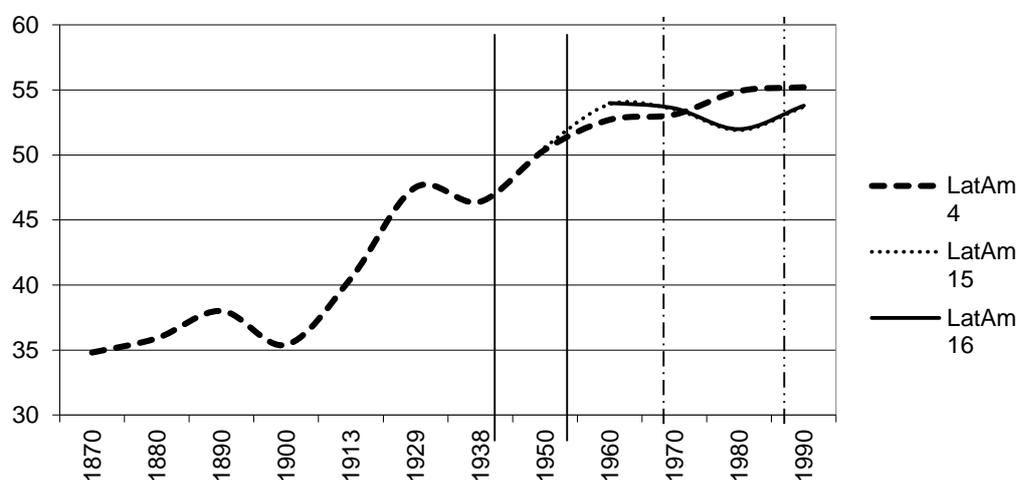
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## 1 Secular trends in income inequality

The colonial origins of the high-income inequality that has afflicted the region for almost five centuries have been well analysed by Engerman and Sokoloff (2005). They underscore that the high inequality in the distribution of land and political power inherited from the colonial regimes led to the development of institutions that perpetuated well into the post-Second World War period the privileges of a small agrarian and commercial oligarchy by facilitating the diversification of their assets from agriculture, mining and commerce into industry and finance. Prados de la Escosura (2005) adds to this that the improvement in international terms of trade experienced by Latin America during the globalization of 1870-1914 raised land yields and the land rental/wage ratio, which benefitted a tiny class of large landowners. The trend towards rising inequality was interrupted during the inter-war years, which witnessed a decline in world trade (Figure 1), but recovered in the post-Second World War period Prados de la Escosura (2005).

Figure 1: Population-weighted Gini estimates and conjectures for Latin America



Source: Author's elaboration on data reported in Prados de la Escosura (2005: 39).

As a result, in the early 1950s the region was characterized by high structural inequality, which depended on: (i) a high land concentration, with Gini coefficients of land distribution ranging between 0.61 (Mexico) and 0.93 (Paraguay) as opposed to between 0.29 and 0.56 in Asia and Africa (Frankema 2009); (ii) an unequal distribution of human capital; (iii) the 'curse of natural resources' by which the countries endowed with natural resources exhibited high levels of concentration of assets and personal income; (iv) an urban bias resulting from overvalued exchange rates, pricing policies that penalized agriculture, a biased spatial allocation of public expenditure, and the drainage of rural savings, with the result that around 1950 rural incomes per head ranged between one-quarter and one-half of urban incomes (Frankema 2009: Table 12.6). In view of all of this, with the exception of Uruguay and Argentina, the Gini coefficient of the distribution of income in the early-mid-1950s ranged between 0.47 and 0.65—that is, among the highest in the world.

Between the 1950s and 1982, the years of import substituting industrialization (ISI), income inequality declined only moderately in much of the region due to the urban bias of the ISI policies. However, inequality fell markedly until the mid-1970s in Argentina, Costa Rica, Uruguay and Venezuela due to urbanization, the introduction of income tax, and the creation of an embryo of redistributive policies. The 1970s witnessed a bifurcation of inequality trends. While, as noted, inequality fell moderately in most of the region, it rose in the Southern Cone (Gasparini et al. 2009) where an extreme version of the neoliberal reforms had been implemented by military juntas.

## 1.2 Evolution of income inequality during the 1980s and 1990s

From the mid-late 1970s, and increasingly so from the beginning of the 1980s, most Latin American countries abandoned the ISI paradigm and introduced neoliberal policies in the fields of stabilization, liberalization, and privatization. These measures paved the way to the liberalization of international trade, foreign direct investment (FDI) and portfolio flows. Their supporters claimed that these policies would have restored the conditions for growth and that, in line with the predictions of the Stolper-Samuelson corollary of the Heckscher-Ohlin theorem, trade and capital account liberalization would have improved domestic inequality in the nations endowed with an abundant supply of unskilled labour.

The distributive impact of both orthodox (and heterodox) approaches of the 1980s was regressive. During the 1980s inequality fell only in Colombia, Costa Rica, Honduras and Peru (Altimir 1996; Londoño and Székely 2000). Despite the return to moderate growth and extensive internal and external liberalization, income concentration during the 1990s worsened further in almost two-thirds of the cases, albeit at a slower pace than in the 1980s (Gasparini et al. 2009: Figure 2). As a result, the average regional Gini index rose by 2.2 points from the early 1980s to 1990, by another 1.7 points between 1990 and 2000, and by 1.2 points during the recession of 2001-02, that is by 5.1 points for the two neoliberal decades. A key feature of this trend was the decline of the labour share in total income and parallel rise in the capital share (Sainz and Calcagno 1992). Five structural changes explain this remarkable shift. First, with the economic stagnation of the 1980s, the regional unemployment rate rose sharply between 1990 and 2002. Second, there was a substantial shift of labour to the informal sector. Third, formal sector wages rose more slowly than GDP per capita while the minimum/average wage ratio fell and wage differentials by skill widened (Gasparini et al. 2009: Figure 2).

What factors explain the trends of the 1980s and 1990s? Barring an aggravation of the structural causes of inequality mentioned above, the literature focuses on two complementary explanations: skill-biased technical change (SBTC) and the impact of liberal policies. The main effect of the SBTC induced by trade liberalization was to raise the demand for skilled workers to operate newly imported machines while its supply remained rigid because of low past public expenditure on education and the inability of the poor to borrow. While there is evidence that the relative wage of skilled workers rose in the 1990s (Table 1), it is not obvious that this was solely due to the SBTC induced by trade liberalization rather than to institutional and demographic factors. Indeed, while trade liberalization eased the import of labour-saving skill-intensive capital goods, the depressed climate prevailing in the region offered few incentives to invest in new equipment. Indeed, the regional investment/GDP ratio fell from 22 per cent in 1980 to 16 per cent for the rest of the decade and 18 per cent in the 1990s, while it rose to 24 per cent in 2008 in parallel with a drop in the skill premium. In contrast, there is consistent evidence of the impact of liberalization on income inequality. Behrman, Birdsall and Székely (2000) found in a study of 18 Latin American countries for 1980-98 that liberalization caused an overshooting of inequality that was particularly intense as a result of domestic financial reforms, capital account liberalization and regressive tax reforms. Similar results were obtained by Taylor (2005), Koujianou-Goldberg and Pavcnik (2007) and Gasparini and Cruces (2010) for Argentina. Though with different emphases, these studies conclude that domestic trade and financial liberalization generated adverse distributive effects due to competition from low-cost imports and ensuing job losses, the immobility of production factors in the declining sector, SBTC, informalization of employment following a rise in the real exchange rate, and devastating macro and financial crises.

Table 1: Ratio of hourly wages of workers with high and low education

Country	1989/91	2000/1	2009	Country	1989/91	2000/1	2009
Argentina	2.26	2.65 ↑	2.21 ↓	Guatemala	—	5.64	4.09 ('04) ↓
Bolivia	3.75 ('93)	4.75 ↑	2.84 ↓	Honduras	5.09	4.29	4.10 ↓
Brazil	6.11	5.90	4.27 ↓	Mexico	3.19	4.50 ↑	3.91 ↓
Chile	3.37	4.18 ↑	3.20 ↓	Nicaragua	3.08 ('93)	3.62 ↑	3.73
Colombia	3.39	4.82 ↑	4.08 ↓	Panama	3.33	3.91 ↑	3.29 ↓
Costa Rica	3.01	2.68	3.06	Paraguay	3.44	3.78 ↑	2.36 ↓
Dominican Rep.	2.30 ('97)	2.64 ↑	2.50 ↓	Peru	2.77 ('97)	2.04	2.73
Ecuador	2.93 ('94)	3.00 ↑	2.50 ↓	Uruguay	2.50	2.75 ↑	2.72 =
El Salvador	3.18	3.64	3.83 ('08)	Venezuela	2.59	2.08	2.05 ('06)

Source: CEPAL (2011). Reprinted with the permission of the United Nations.

### 1.3 The inequality decline of 2002-10

#### *Extent and speed of the decline*

Between 2002 and 2010 inequality fell—albeit to a different extent and with different timing—in all 18 countries analysed with the exception of Nicaragua and Costa Rica. As a result, the un-weighted regional Gini—which had risen by 0.32 Gini points a year during the 1980s and 0.16 points during the 1990s—fell by 0.50 points over 2002-08, 0.47 in the crisis year of 2009 and a staggering 1.93 in 2010 (Figure 2; for country details see Cornia 2014: Table 2.1).<sup>1</sup> All this seems to point to a non-cyclical behaviour of the Gini coefficient and to a certain stability of distributive policies in the region (see Part 4 for more details). Finally, it is worth noting that the recent average Gini decline per year was much more sizeable than the earlier rises, so that by 2010 the average regional Gini had returned to the pre-Washington Consensus level of inequality of the early 1980s (Figure 2).

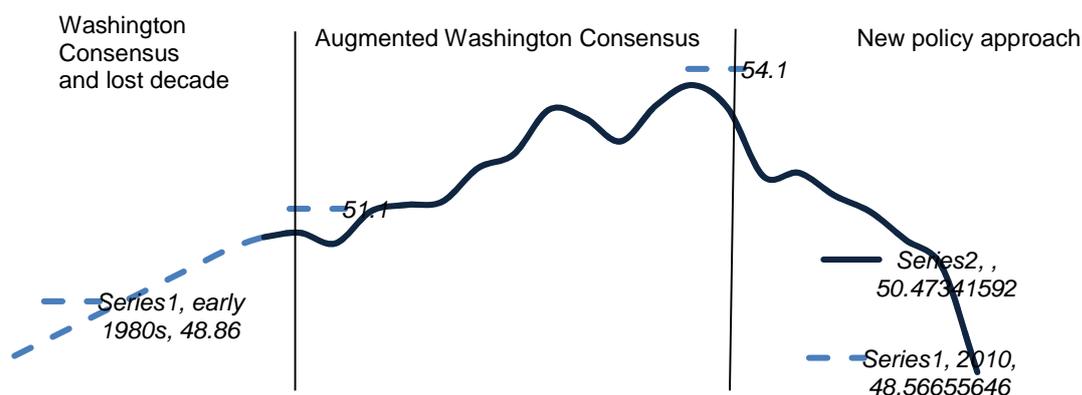
There is evidence that part of the inequality gains of the last decade can be attributed to a rebound from the 2001-02 crisis, and that the rate of decline of the regional Gini coefficient slowed down over 2004-06 (Figure 2). However, the average drop in inequality recorded in the region during 2002-04 (2.55 Gini points) was considerably greater than its 2000-02 rise (1.55 points), while during the biennium 2006-08 there was a further decline which, as noted, continued or even accelerated during the crisis of 2009 (as in Honduras and Panama) and during the recovery of 2010 (as in Mexico and Uruguay). Overall, the 'rebound effect' seems to explain about a third of the overall regional decline recorded between 2002 and 2010. This suggests that two-thirds of the inequality drop constitutes a reversal of the 'liberalization-globalization inequality' of the 1980s and 1990s (Figure 2).

#### *Reliability of the above conclusions*

It could be argued that these conclusions might be biased by the grossly incomplete accounting of top incomes in household budget surveys due to a systematic under-sampling, under

<sup>1</sup> Thanks to the large inequality drop recorded in Argentina, Brazil, Peru and Venezuela and, of late Mexico, the extent of the GDP or population-weighted Gini decline would be greater.

Figure 2: Trend in the average regional Gini index of the distribution of household income per capita, early 1980s-2010



Source: Cornia (2014).

reporting and truncation of the incomes of the top 1 per cent, or to the fact that the elites receive considerable incomes from the substantial assets that they held abroad. In this regard, the analyses of income distribution changes based on tax returns data by Alvaredo (2010) show that  $G$  (the Gini coefficient corrected on the basis of the formula  $G = G^* (1-S) + S$ , where  $G^*$  is the Gini coefficient computed on household surveys and  $S$  is the income share of the top 1 per cent computed on tax returns) is always higher by 3-8 points than the Household Budget Surveys (HBS) Gini. In addition, Alvaredo (2010: 7) notes on Argentinian data that:

... not only can [Gini] levels be different, but also the trends of  $G$  and  $G^*$  can diverge. According to the survey's results,  $G^*$  displays virtually no change when 2001 and 2003 are compared, going from 51.1 to 50.9. However,  $G$  'corrected' with the top 1 per cent income share... was 57.4 in 2001 and 59.2 in 2003 (almost a two percentage points increase).

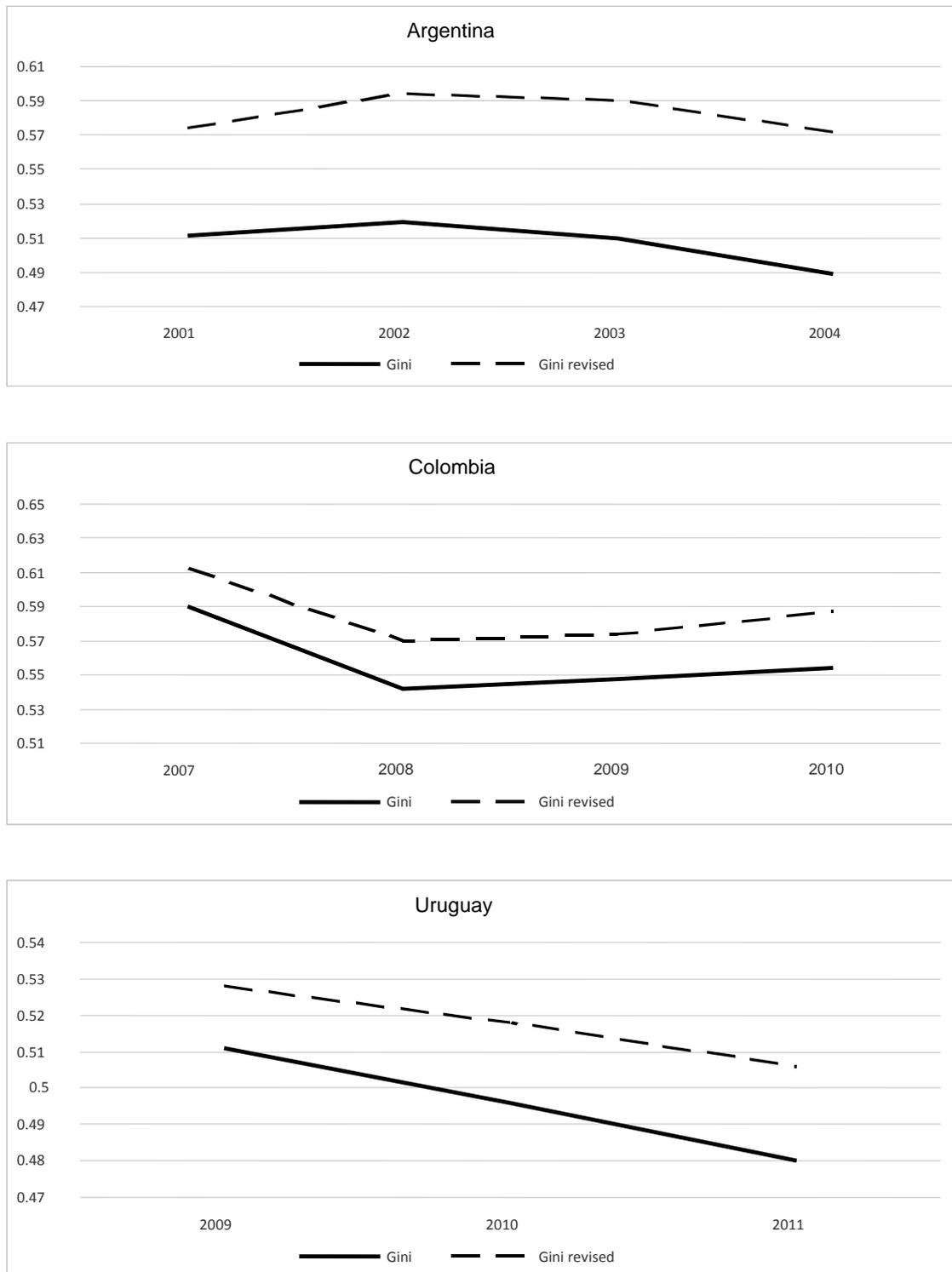
This means that the inequality trends corrected by the income share of the top 1 per cent may not have followed the trend depicted in Figure 2. To verify this hypothesis we use the only data computed by Latin American researchers that compare the trends in  $G^*$  and  $G$ . For the last decade, this type of analysis exists only for Argentina 2001-04 (Alvaredo 2010), Colombia 2007-2010 (Alvaredo and Londoño Velez 2013), and Uruguay 2009-2011 (Burdín et al. 2013). Such assessment, however, shows that while the corrected  $G$  is always higher than the uncorrected one, the trends are basically the same (Figure 3). We have therefore a 'level effect' but not a 'trend effect'—which means that the conclusions reached on the basis of the uncorrected Gini datasets hold.

#### *Beneficiaries of the decline in inequality*

A key issue—including in political terms (see below)—concerns the identification of the social classes that benefitted from the recent inequality decline. In this regard, an interesting paper by Palma (2011) covering the developing and transitional economies claims that the income share of the middle class (which he defines as deciles 5-9) remained constant over time at around 45-55 per cent of national income. In his view, any inequality change was thus due to changes in the income shares of the top 10 per cent and bottom 40 per cent, which vary substantially across countries and over time. The reason for the supposed stability of its income share is that the middle class has acquired (for mysterious reasons) strong 'property rights' over about half of the national

income. Thus, the overall changes in income distribution basically depend on the distributive fight between the rich and the poor.

Figure 3: Trend in the Gini coefficient based on household budget surveys (solid line) and in the Gini revised on the basis of the income share of the top 1 per cent derived from tax returns data (segmented line)



Source: Amarante and Jimenez (2015). Reprinted with the permission of the authors.

While the emphasis on the role of the middle class as a driver of efficient and equitable reforms is warranted,<sup>2</sup> an examination of the changes in income share of the poor, middle class and rich for the Latin American countries over 1990-2010 does not support Palma's conclusions. Indeed, in most countries, both the poor and the middle class suffered a loss of income share between 1990 and 2002 and both benefitted from the inequality decline of 2002-09. In this regard, Table 2 shows that in six of the nine cases in which the Gini coefficient rose over 1990-2002 the middle class (deciles 6-9) experienced an often sizeable decline of its income share. Indeed, in some cases, the middle class lost more than the poor. Likewise, in four cases during the last decade it gained a bigger share of national income than the poor (deciles 1-5) (Table 2). Furthermore, during the years of falling inequality of 2002-09 the income share of the middle class improved significantly in 11 of the 15 countries that experienced distributive gains although, on average, such gains were less marked than those for the poor. It thus appear that, though with differences from country to country, the recent exogenous shocks and policy reforms benefitted a fairly broad section of the population—a fact that may explain (or result from) the shift in political regimes in the region during that period (see next section).

Table 2: Changes in the income shares of the poor (quintiles 1-5), 'middle class' (quintiles 6-9) and rich (quintile 10) during 1990-2002 (rising inequality) and 2002-09 (falling inequality)

Country	1990-2002	Income deciles			$\Delta$ Gini	2002-09	Income deciles			$\Delta$ Gini
		1-5	6-9	10			1-5	6-9	10	
Argentina	1990-2002	<b>-4.68</b>	+0.94	+3.74	+7.7	2002-10	<b>+5.01</b>	<b>+2.81</b>	-7.82	-9.0
Peru	1997-2002	<b>-0.67</b>	<b>-2.12</b>	+2.79	+2.9	2002-09	<b>+2.99</b>	<b>+4.17</b>	-7.18	-6.5
Ecuador	1995-2003	<b>+1.82</b>	<b>-1.49</b>	-0.33	-2.3	2003-09	<b>+2.87</b>	<b>+2.65</b>	-5.51	-5.6
Paraguay	1995-2002	+0.86	+1.54	<b>-2.40</b>	-1.8	2002-09	<b>+3.20</b>	<b>+2.11</b>	-5.41	-5.9
Brazil	1990-2002	+1.32	+0.07	<b>-1.39</b>	-2.1	2002-09	<b>+2.49</b>	<b>+1.63</b>	-4.12	-4.6
Panama	1989-2002	<b>-0.33</b>	<b>-2.46</b>	+2.79	+1.4	2002-09	<b>+2.52</b>	<b>+0.88</b>	-3.40	-4.3
Venezuela	1989-2002	<b>-2.97</b>	<b>-0.62</b>	+3.68	+5.0	2002-06	<b>+2.45</b>	<b>+0.45</b>	-2.90	-4.0
El Salvador	1991-2002	<b>-0.45</b>	+2.78	-2.33	-0.5	2002-08	<b>+3.76</b>	-0.98	-2.78	-5.6
Chile	1990-2003	+0.51	<b>-0.28</b>	+0.23	-0.5	2003-09	<b>+1.44</b>	<b>+0.79</b>	-2.23	-2.7
Bolivia	1997-2002	<b>-1.24</b>	<b>-0.66</b>	+1.90	+2.1	2002-07	<b>+1.87</b>	+0.04	-1.91	-2.9
Honduras	1991-2002	<b>-2.66</b>	+0.89	+1.78	+5.3	2002-09	-0.82	<b>+2.46</b>	-1.78	-1.4
Mexico	1989-2002	+0.42	+0.85	<b>-1.27</b>	-1.1	2002-08	<b>+0.25</b>	<b>+0.44</b>	-0.68	-0.5
Guatemala	1990-2000	+1.53	<b>-2.92</b>	+1.40	-4.0	2000-06	-0.47	<b>+1.16</b>	-0.70	-3.6
Dom. Rep.	1996-2002	<b>-1.61</b>	<b>-0.74</b>	+2.35	+2.8	2002-09	<b>+0.97</b>	-0.86	-0.05	-1.1
Uruguay	1989-2002	<b>-2.15</b>	+0.16	+1.99	+3.0	2002-09	<b>+0.87</b>	-0.85	-0.01	-1.0
Costa Rica	1990-2002	<b>-2.82</b>	<b>-3.23</b>	+6.05	+5.8	2002-09	-0.18	-0.53	<b>+0.71</b>	+0.4
Nicaragua	1993-2001	+3.63	+1.00	-4.63	-4.1	2001-05	-0.78	-2.05	<b>+2.82</b>	+2.1
Colombia	1996-2003	+0.36	+0.84	-1.24	-0.9	2003-07	-1.89	-1.21	<b>+3.11</b>	+3.4
Average		-0.63	-0.30	+0.93			+1.40	+0.73	-2.13	

Source: Cornia (2012).

<sup>2</sup> A sizeable and relatively prosperous middle class generally plays a key role in promoting long-term growth (through capital accumulation, entrepreneurship and human capital formation), political stability, and the pursuit of lower inequality via progressive taxation, social expenditure and labour policies.

### *Inequality decline by political orientation of governments*

Inequality fell under regimes reflecting all types of political orientations, though there is a clear hierarchy of inequality falls by type of political regime. Indeed, Table 3 suggests that the Gini coefficient was reduced by 0.54 points per year under the social democratic left regimes, 0.42 under the radical left regimes (among which commodity exporters dominate), 0.20 under the centrist regimes, and only 0.08 under centre-right regimes. These results confirm those of Birdsall et al. (2011) according to which the social democratic left regimes improved their distribution more rapidly than the radical left, and that both did better than the centrist and centre-right regimes.

The key question is then how to explain the political shift towards the left and the adoption by left parties of distribution-sensitive policies. As documented by the results of different waves of the *Latinobarómetro*,<sup>3</sup> such a shift was to a large extent explained by growing frustration with the disappointing results of the Washington Consensus policies implemented in the 1980s and 1990s, which were seen as having benefitted only a tiny elite. Among other things, the Washington Consensus policies led to a shrinkage of the industrial working class, a weakening of the unions, rising unemployment, and substantial job informalization and self-employment. As noted by Panizza (2005), the new left parties have their roots in organizations of the working class, but have evolved into broad coalitions comprising the urban and rural poor, the unemployed and informal sector workers. They also comprise sizeable sectors of the business and middle classes that were negatively affected by the Washington Consensus measures, as shown in Table 2. As noted by Roberts (2012), the change in political orientation of parts of the middle class was not due to an ideological realignment but to retrospective voting—that is, the assessment of their gains/losses during the conservative regimes. At the same time, sections of the middle class supported the new regimes' concerns for poverty and inequality, recognition of market failures and increasing importance assigned to strengthening state institutions—a focus that is in sharp contrast with the neoliberal emphasis on shrinking the state and the self-sustained role of markets.

An appreciation of the singularity of the recent distributive gains of Latin America is offered by a comparison of the inequality changes observed in other regions. In this regard, Table 4 confirms that during the broad period 1980-2002, the majority of Latin American countries experienced an increase in inequality—a trend observed also in most other regions. In contrast, during the years 2002-10 in all regions inequality rose less frequently and sizeably than during the previous two decades. However, only in Latin America was there a marked and generalized improvement. This bifurcation of trends is difficult to explain on the basis of the supposed advantages of the Latin American region. Most developing regions are, in fact, similarly heterogeneous. All of them comprise countries that depend on commodity exports, foreign capitals and remittances, as well as some semi-industrialized nations. All of them benefitted from the high commodity prices, rising remittances, financial exuberance, and rapid world growth of the last decade. Nor does the drop in inequality appear to have been driven by growth. Indeed, the fast-growing Asian countries experienced steep rises in inequality, and by 2010 China had a higher Gini coefficient (0.47) than those of Argentina, Uruguay and Venezuela.

It is thus difficult to argue that the improvements recorded in Latin America are due only to a favourable external environment, world growth, or 'luck'. Other factors, including the policy factors discussed in Section 2 (such as long-term effects of rising educational achievements,

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<sup>3</sup> [www.latinobarometro.org/lat.jsp](http://www.latinobarometro.org/lat.jsp)

changes in economic and social policies and the consolidation of democracy) are likely to explain in part this encouraging trend.

Table 3: Inequality trends from the early until the late 2000s (according to the latest available data) by the ideological profile of governing parties

	Country	Period	Total change in Gini index during each regime	Average yearly change
Radical left	Bolivia	2006-08	-0.51	-0.17
	Nicaragua	2007-08	no data	no data
	Venezuela	1999-2008	-6.67	-0.67
	<b>Average</b>		<b>-3.59</b>	<b>-0.42</b>
Social democratic left	Argentina	2003-10	-9.05	-1.13
	Brazil	2003-09	-4.56	-0.65
	Chile	2000-09	-3.30	-0.33
	Dominican Rep.	2000-04	0.00	0.00
	Ecuador	2007-10	-4.01	-1.00
	El Salvador	2009-10	no data	no data
	Panama	2005-08	- 4.55	-1.14
	Paraguay	2008-10	0.00	0.00
	Uruguay	2005-10	-0.20	-0.03
<b>Average</b>		<b>-3.21</b>	<b>-0.54</b>	
Centrist	Costa Rica	2006-09	+1.51	+0.38
	Dominican Rep.	2004-10	-4.19	-0.60
	Ecuador	2000-06	-3.01	-0.43
	Guatemala	2008-11	no data	no data
	Honduras	2005-09	-0.60	-0.12
	Peru	2000-10	-2.66	-0.24
	<b>Average</b>		<b>-1.79</b>	<b>-0.20</b>
Centre-right and right	Bolivia	2002-05	-1.80	-0.36
	Colombia	2000-09	-1.78	-0.18
	Costa Rica	2002-06	-1.10	-0.22
	El Salvador	2000-09	-3.83	-0.38
	Guatemala	2000-07	+0.20	-0.03
	Honduras	2000-05	+1.80	+0.30
	Mexico	2000-10	-6.49	-0.59
	Nicaragua	2000-06	+2.31	+0.33
	Panama	2009-10	no data	no data
	Paraguay	2000-08	-3.86	-0.43
	Uruguay	2000-05	+4.46	+0.74
<b>Average</b>		<b>-1.01</b>	<b>-0.08</b>	

Source: Cornia (2014) based on Roberts (2012) for the coding of the political orientation of governments and on [www.sedlac.econo.unlp.edu.ar/esp/estadisticas.php](http://www.sedlac.econo.unlp.edu.ar/esp/estadisticas.php) for the changes in the Gini coefficients.

Comparing the 2000s Latin American inequality trend with that of other regions: An appreciation of the singularity of the recent distributive gains of Latin America is offered by a comparison of such inequality trend with those observed in other regions. In this regard, Table 4 confirms that while during the broad years 1980-2002, the majority of countries from Latin America (and the

other regions) experienced an increase in inequality, during the years 2002-10 only in Latin America there was a marked and generalized inequality decline. This bifurcation of trends is difficult to explain on the basis of the supposed advantages of the Latin American region. Most developing regions are, in fact, similarly heterogeneous. All of them comprise countries that depend on commodity exports, foreign capitals and remittances, as well as some semi-industrialized nations. All of them benefitted from the high commodity prices, rising remittances, financial exuberance, and rapid world growth of the last decade. Nor does the drop in inequality appear to have been driven by growth. Indeed, the fast growing Asian countries experienced steep rises in inequality, and by 2010 China had a higher Gini coefficient (0.47) than those of Argentina, Uruguay, and Venezuela.

Table 4: Trend in the Gini coefficient of the distribution of household disposable income per capita, 1980-2000 and 2000-10

	Transition economies								World
	OECD	Europe	Asia	Latin America	MENA	South East Asia	South Asia	SSA	
A: 1980s (starting from earliest available year) and 1990s									
Specific period for each region	1980 to 2001	1990 to 1998	1980 to 2000	1980 to 2002	1980 to 2000	1980 to 1995	1980 to 2000	1980 to 1995	
Rising inequality	14	24	2	14	2	5	3	9	73 (69%)
No change	1	0	1	1	3	0	0	2	8 (8%)
Falling inequality	6	0	0	3	3	2	2	8	24 (23%)
Total	21	24	3	18	8	7	5	19	105 (100%)
B: 2000-10 (or latest available year)									
Specific period for each region	2000 to 2010	1998 to 2010	2000 to 2009	2002 to 2010	2000 to 2007	1995 to 2009	2000 to 2010	1995 to 2007	
Rising inequality	9	13	2	2	4	3	4	7	44 (41%)
No change	4	5	1	1	0	0	1	1	13 (12%)
Falling inequality	8	6	0	15	4	4	0	13	50 (47%)
Total	21	24	3	18	8	7	5	21	107 (100%)

Notes: All countries included in Table 4 have at least ten well-spaced observations for the 30 years considered. Each country has been assigned to one of the three above categories on the basis of a trend analysis and of the difference between the initial and final Gini coefficients for each of the two sub-periods considered.

Source: Cornia and Martorano, UNCTAD (2012). Reprinted with the permission of the United Nations.

## 2 Underlying causes of the decline of income inequality over 2002-10

The analysis of inequality decline is generally conducted by focusing first on its immediate (statistical) causes and then on its underlying causes. In this paper, space limitations force us to focus mainly on the latter, while remembering that all analyses of the former (Cornia 2014; Lopez-Calva and Lustig 2010) suggest that the decline in inequality was driven first and foremost by a decline in the skill premium and—to a lesser extent—by rising public transfers and remittances and a fall in the urban-rural wage gap. An improvement in the distribution of capital incomes apparently took place as well (subject to the caveats of pages 4-5), though its contribution to the Gini decline was very modest for the reasons illustrated above. Hereafter we focus, in turn, on the underlying causes of the inequality fall by discussing its possible drivers one by one.

## 2.1 An improvement in external conditions

During the last decade, the rapid growth of the emerging economies entailed a rise in the regional terms of trade index from 100 in 2000 to 117 in 2008 while the volume of exports rose substantially in 2010. In turn, migrant remittances grew rapidly in Central America, Bolivia, Paraguay and Ecuador, while the regional ratio of migrant remittances to GDP climbed from 2.2 per cent in the 1990s to 5.4 per cent in 2007-08 (Cornia 2012). Furthermore, over 2002-2008 and in 2010 the region received portfolio inflows amounting to 2.4 per cent of the region's GDP.

Given the high concentration of the ownership of land and mines prevailing in the region and their high capital- and skill-intensity, the recent gains in terms of trade generated, *ceteris paribus*, an unequalizing effect on the functional distribution of income. However, whenever such rents accrued to the state or were taxed and redistributed in a progressive way, their rise generated favourable distributive effects. Yet the evidence suggests a weak relation between terms of trade and the revenue/GDP ratio for Latin America as a whole. The only relatively strong correlation ( $r = 0.63$ ) was found for the eight main commodity exporters and the years 2003-07.

As for the impact of remittances, the International Monetary Fund (IMF) (2005) suggests that their short-term effect is unequalizing, as only middle-class people are able to finance the high costs of illegal migration so that, as a consequence, remittances accrue to middle-income families. However, migration may be equalizing if migrant networks develop in the destination countries as observed in El Salvador and Mexico (Acevedo and Cabrera 2014, Campos-Vasquez et al. 2014), including because they narrowed the rural-urban income gap. In turn, the increase in capital inflows mainly benefitted large, capital- and skills-intensive firms and banks, and did not ease the access to credit for small firms. In addition, these inflows caused an appreciation of the exchange rate which retarded growth in the labour-intensive traded sector, including agriculture, as in the case of Honduras (Klasen et al. 2014). All in all, the partial equilibrium effects of the improvement in international conditions seem unlikely to have led to a decline in inequality, except possibly in the four to six countries where such a phenomenon was especially marked.

## 2.2 Impact of the rapid growth of 2002-08 and 2010 on income inequality

In the absence of a computable general equilibrium (CGE) model, the general equilibrium effects of the boom in commodity exports, remittances and capital inflows are difficult to trace. Yet, as suggested by Thirlwall (2011), these currency inflows did relax the foreign exchange constraint to growth and, as a result, have raised employment and improved income distribution (Table 5).

Table 5: Labour market trends for Latin America as a whole, 1990-2009

	Activity rate (% of pop. 15- 64 yrs)	Unemploy- ment rate (%)	% Wage earners of total workers	% Formal sector workers	% Workers paying social security	Wage	
						Average	Informal/ formal sector
1990	61.0	6.2	62.6	55.0	63.3	384	0.54
2002	63.0	10.7	60.9*	52.8	54.6	397	0.43
2005	63.7	9.7	61.4	53.7	59.4	405	0.44
2007	64.2	8.0	63.0	53.0	47.0	423	0.44
2008	64.7	7.3	63.7	50.3	42.0	421	0.46
2009	64.3	8.2	63.2	50.7	38.4	434	0.47

Source: Cornia (2012) on different tables in CEPAL (2006 and 2008), and Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank).

### 2.3 An improvement in the distribution of educational achievements

As noted above, the reduction in the skill premium was the main immediate cause of the recent fall in income inequality. This was—inter alia—due to the redistribution of human capital among households, induced by the rise in secondary school enrolment rates—especially among the lower deciles—recorded since the early 1990s and accelerating in the 2000s (Cruces et al. 2014) following a large increase in public spending on education per child aged 0-14. The latter rose from US\$ PPP 320 in constant prices in 1990 to 756 in 2000 and to 1451 in 2010.

The increased years of education of the labour force and its more equitable distribution generated two effects: a ‘price effect’ (that is, the decline in the skill premium) and a ‘quantity effect’ (a more equal distribution of human capital), both of which had an equalizing effect. While the quantity effect is unambiguous, the price effect could be explained also by: (i) a parallel decline in the supply of unskilled labour due to demographic factors or rising educational achievements of formerly uneducated workers; (ii) a possible drop/stabilization in the demand for skilled workers and a rise in the demand for unskilled workers due to technological or macroeconomic factors; (iii) institutional changes (that is, an increase in minimum wages, see later). Thus, the extent to which the ‘price effect’ is explained by any of these factors remains to be fully understood, and is likely to vary from country to country.

To what extent was the increased spending on education due to policy choices? To answer this question Cruces et al. (2014) use a simple algorithm by which the government spending on education per child aged 0-14 ( $G/N$ ) can be decomposed in the product of the ratio of public spending on education to GDP ( $G/Y$ ), per capita GDP ( $Y/P$ ) and the inverse of the share of children in the population ( $P/N$ ); that is,  $G/N = G/Y \times Y/P \times P/N$ . Despite cross-country problems in government accounting for spending on education—which may slightly bias the results—Table 6 confirms that there was a clear increase in fiscal efforts to support public education. For Latin America as a whole this accounts for 33 per cent of the increase in educational expenditure. Such a ‘social policy’ effect is particularly strong in countries (such as Paraguay, Guatemala and Nicaragua) that in 1990 had low enrolment rates while it was—as expected—less marked in countries that had already achieved high secondary enrolments, such as Panama, Argentina and Colombia. It is also interesting to underscore the important contribution of GDP growth (which increased revenue generation) and the lower but not negligible effect of the decline or slower increase in the cohort of children aged 0-14.

Table 6: Decomposition of the increase in public spending on education per child aged 0-14 by its main drivers

	Social policy	Growth	Demographics	Total
Argentina	26.1	60.0	13.9	100.0
Brazil	32.7	45.7	21.6	100.0
Colombia	19.0	60.4	20.5	100.0
Guatemala	45.3	46.6	8.1	100.0
Honduras	41.0	43.4	15.6	100.0
Nicaragua	47.7	33.3	19.0	100.0
Panama	8.0	77.2	14.8	100.0
Paraguay	60.9	26.8	12.3	100.0
Venezuela	35.5	44.2	20.3	100.0
L.A. Average	33.0	50.6	16.4	100.0

Source: Excerpted from Cruces et al. (2014).

## 2.4 The spread of progressive regimes and new policy approaches

Over the last 20 years, the region witnessed a return to and consolidation of democracy. As suggested by Robinson (2010), if political power is concentrated in the hands of the elites, the political system tends to adopt unequalizing policies. In contrast, genuine democracy, greater electoral participation and a ‘consolidation of democracy’ reduce the concentration of power and facilitate the transition towards non-clientelistic policies. Besides greater democracy, starting from the late 1990s, the region witnessed a shift in political orientation towards centre-left regimes (between 1998 and 2011 the region witnessed the election of 15 left-leaning governments), due to growing frustration with the disappointing results of the liberal policies implemented in the 1980s and 1990s. As noted, although they helped to re-establish macroeconomic balance, such policies led to a shrinkage of the manufacturing and industrial workforce, a weakening of the unions, rising unemployment, and a substantial enlargement of the informal sector.

While the leftist regimes differ substantially among themselves (Panizza 2005), they have all evolved into broad coalitions comprising the urban and rural poor, the unemployed and informal sector workers, and business and middle classes sectors. These parties have abandoned any notion of revolutionary action in favour of electoral politics and respect for the institutions of liberal democracy. In all kinds of left of centre regimes, measures in the fields of taxation, labour markets, social expenditure, and transfers have been far-reaching. The main components of the new policy model are reviewed below.

### *A countercyclical or an acyclical fiscal policy*

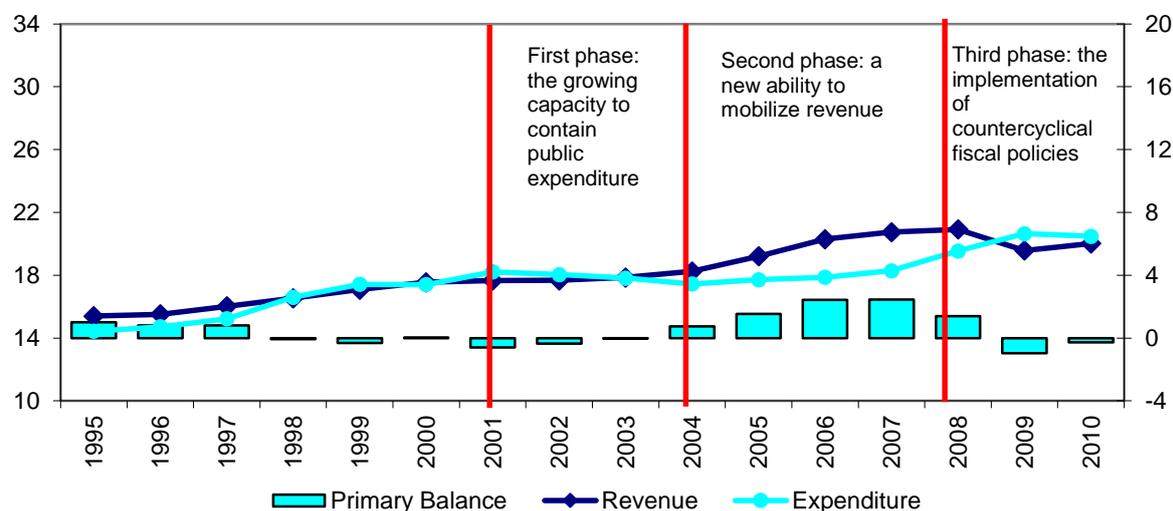
Traditionally, the Latin American countries adopted pro-cyclical and often unsustainable fiscal policies. This stance has been abandoned during the 2010s. A decline in the budget deficit was targeted in all countries, despite an increase in public expenditure. Fiscal deficits have typically been reduced below 1 per cent of GDP (that is, lower than the EU and USA) and were in several cases turned into surpluses, while the region as a whole recorded a primary surplus between 1 and 2 per cent between 2004 and 2008 (Figure 4). Overall, during the fast growth years of 2006 and 2007, the average central government deficit of the region was in equilibrium, though it rose in the difficult years of 2009-10 in line with the shift towards a countercyclical fiscal management. The strong version of such a policy, which requires that a budget surplus is realized during periods of growth to finance public deficits during bad years, was adopted in Chile and Peru. An acyclical version, consisting of balancing the budget or generating a small surplus in good years, was adopted by most countries due to the difficulties faced by democratic regimes in convincing the electorate of the need for fiscal austerity in periods of rising revenue (Ocampo 2008).

### *Tax policy*

Tax policy underwent gradual but deep changes (Cornia et al. 2011). While over 1990-2002 the tax/GDP ratio gradually recovered its 2.7 points decline recorded during the recession of the 1980s, between 2003–08 the regional tax/GDP ratio rose by almost 3.5 points and much greater increases were recorded in Argentina (9 points) and Brazil (5 points). Despite the recession of 2009 the regional tax/GDP ratio dropped only 0.35 percentage points, and by the late 2000s, Brazil, Argentina, Uruguay and Costa Rica reached levels of taxation similar to those of the USA and Japan. Much lower increases in tax/GDP ratios were recorded, however, in most of Central America, while Mexico experienced a small decline. Also, the focus of tax policy changed substantially. While during the 1990s it focused on a reduction of taxes on international trade, a rise of VAT, a lowering or abolition of income tax, and a widening of the tax base, during the 2000s tax policy emphasized income tax and reduced tax exemptions, extended the scope of presumptive taxation, cut regressive excises, and introduced indirect taxes on luxury items. A few

countries introduced a surrogate tax on financial transactions and/or selective export taxes to tax assets that escape taxation. The increase in world commodity prices contributed to a rise in the tax/GDP ratio in seven countries. Yet such rise began before the commodity boom and was due to an attempt at widening the direct and indirect tax base.

Figure 4: Tax revenue, public expenditure and primary balance (% of GDP), 1995-2010



Source: Martorano (2014). Reprinted with the permission of the author.

As a result, while the distribution of income after tax (but before transfers) in 11 Latin American countries had remained broadly unchanged between the late 1990s and 2001-02 and had worsened in Mexico and Nicaragua, during the 2000s the progressivity of taxation improved in relation to the 1990s in 11 of the 12 countries with available tax incidence data. This is shown in Table 7 by the increasingly more positive signs of the Reynolds-Smolensky index (the difference between the Gini coefficient of before and after tax). In addition, the recent revenue increase affected inequality indirectly as it permitted funding social transfers and public expenditure on education in a non-inflationary way, and reduced the unequalizing macro instability of the past.

Table 7: Reynolds–Smolensky index (Gini points) for the 1990s and 2000s

	1990s	2000s	2000s-1990s
Argentina	-1.95	1.92	3.87
Brazil	-0.70	1.40	2.10
Chile	-0.78	0.27	1.05
Costa Rica	-0.98	1.24	2.22
Ecuador	-0.70	0.70	1.40
El Salvador	-1.40	-0.75	0.65
Guatemala	-0.77	1.20	1.97
Honduras	-2.80	-0.10	2.70
Nicaragua	-5.20	0.17	5.37
Panama	0.00	0.90	0.90
Uruguay	-0.20	1.20	1.40

Note. A positive sign of the index indicates that the tax system is progressive, a negative one that it is regressive.

Source: Cornia et al. (2011).

### *A countercyclical monetary policy*

During periods of bonanza, monetary authorities attempted to control the expansion in money supply, fall in interest rates and credit expansion through an accumulation of reserves and sterilization. Until 2009, only Argentina and Colombia had introduced some capital controls (Ocampo 2008), which have become more common in 2010. In turn, during periods of crisis (as late as 2008 and 2009), most leftist and conservative governments lowered interest rates and expanded lending by public banks, while tolerating even negative real interest rates and slightly higher inflation rates than recommended by the orthodox approach, to support the level of output and employment. Monetary policy in Argentina, Peru, Bolivia, and Uruguay also aimed at reducing the traditional, extensive and unequalizing dollarization of the financial system and at strengthening central bank independence.

### *Exchange rate regime*

Fixed pegs and free floats were replaced by managed exchange rates aimed at preserving a competitive real exchange rate and avoiding its appreciation during periods of bonanza. Together with an improvement in global economic conditions (see above), this helped to generate current account surpluses that were used to reduce foreign debt and accumulate currency reserves. However, in 2006–07 and again in 2010, this exchange rate policy came under pressure owing to a surge in the world prices of exports, capital inflows, and remittances. Consistent with the new exchange rate policy, most governments adopted a monetary and fiscal stance that aimed at avoiding the past pro-cyclical bias. Without the interventions just mentioned, several countries would have shown stronger symptoms of Dutch disease and accelerating asset price inflation with negative effects on income inequality. Despite these measures, management of the real exchange rate remained a problem in the region, as 14 countries recorded an extra-regional real appreciation in 2010 (CEPAL 2011).

### *Trade and external indebtedness*

The free trade policies adopted during the Washington Consensus years, and which in the 1990s led to a shift in resource allocation against the unskilled labour-intensive sectors, were not overturned, in part because the new exchange rate policies offered some protection to the tradeable sector. In contrast, the pattern of international trade changed perceptibly. While trade within the Free Trade Area of the Americas stalled, intra-regional trade integration increased, especially in the field of manufacturing, and so did South-South trade, particularly the exports of primary commodities to the Asian countries. Governments (in particular the left-leaning ones) attempted to reduce their dependence on foreign borrowing. Short-term stabilization agreements with the IMF were generally not renewed, while Brazil (in 2005) and Argentina (in 2006) prepaid their outstanding debt to the IMF. Argentina also restructured its foreign debt at a 70 per cent discount, though the litigation with some creditors is still not completely resolved. The foreign reserves of the region also grew from about US\$150 to almost US\$550 billion between 2002 and 2009, and the region's gross foreign debt declined from 40 per cent of the regional GDP in 2002 to 17.4 per cent in 2008 and 20.4 per cent in 2009. One can surmise that the distributive effects of exports differentiation and reserves accumulation were likely favourable, as they reduced the vulnerability to macroeconomic shocks.

### *Labour market policies*

Centre-left governments explicitly addressed the problems inherited from the prior two decades—unemployment, job informalization, falling unskilled and minimum wages, diminishing coverage of social security, and weakening of institutions for wage negotiations and dispute settlements.

Argentina enacted income policies consisting of public works, extending coverage of formal employment, and promoting the rebirth of trade unions. In Brazil and Uruguay the governments reinstated tripartite wage bargaining. Meanwhile average wages grew moderately (Table 8), possibly reflecting the greater concern of policy makers for creating jobs rather than for raising earnings. It also reflects the recognition that, unless backed by increases in productivity, nominal wage raises may fuel inflation with scant effect on real wages. In turn, most left governments and a few conservative governments decreed sizeable hikes in minimum wages (Table 8), which reduced the minimum/average wage ratio with equalizing effects on the wage distribution.

Table 8: Trend in the index of real minimum wages<sup>a</sup> (2000=100) in selected countries

	2002	2004	2006	2008	2010
Chile (2000-10) <sup>b</sup>	<b>106.8</b>	<b>111.3</b>	<b>116.3</b>	<b>118.3</b>	<b>127.7</b>
Brazil (2002)	<b>114.3</b>	<b>121.4</b>	<b>145.3</b>	<b>160.8</b>	<b>182.0</b>
Argentina (2003)	81.4	<b>129.8</b>	<b>193.2</b>	<b>253.3</b>	<b>321.3</b>
Panama (2004-09)	105.8	<b>107.5</b>	<b>108.1</b>	<b>109.2</b>	<b>113.3</b>
Uruguay (2005)	88.7	77.5	<b>153.2</b>	<b>176.9</b>	<b>196.8</b>
Costa Rica (2006)	99.5	97.6	<b>99.5</b>	<b>99.5</b>	<b>105.8</b>
Bolivia (2006)	116.0	112.0	<b>111.1</b>	<b>117.0</b>	<b>119.9</b>
Honduras (2006-09)	104.6	114.5	127.4	<b>131.1</b>	<b>225.5<sup>c</sup></b>
Nicaragua (2007)	105.9	113.5	128.5	<b>141.6</b>	<b>174.6</b>
Ecuador (2007)	112.5	122.2	130.0	<b>146.7</b>	<b>161.5</b>

Notes: <sup>a</sup> Nominal wages deflated by the CPI; <sup>b</sup> years of ruling by left-of-centre regimes; <sup>c</sup> = 2009.

Source: CEPAL (2011). Reprinted with the permission of the United Nations.

### *Rising social expenditure, social assistance and redistribution*

In most countries, public social expenditure started rising in the 1990s but accelerated its upward trend since the early 2000s (Cornia 2012: Table 12). There is still a huge intra-regional variation in social expenditure but it appears that the rise recorded in the 2000s was proportionately greater in low-income countries. The funding of this expenditure rise was made possible by the increase in tax/GDP ratios mentioned above, the debt cancellation enjoyed by HIPC (Highly Indebted Poor Countries) and higher official development assistance (ODA) due to growing 'social conditionality' for achieving the Millennium Development Goals (MDGs).

Practically all governments introduced progressive social assistance programmes to complement the coverage of social insurance. These new programmes were funded by the state with expenditures ranging between 0.2 and 0.8 of GDP (Barrientos 2011; Fiszbein and Schady 2009), covered an important share of the population at risk, were directed to old and new political constituencies, and comprised conditional transfers aimed at reducing poverty and child labour and ensuring that children remain in school and have access to health services, employment schemes, training and subsidized employment for the young, and the promotion of small enterprises. In addition, Argentina, Bolivia, Brazil and Chile introduced non-contributory social pensions at a cost of 0.18 to 1.30 per cent of GDP. Their generosity, coverage, design, and targeting generally improved over time, though there is still great scope for rationalizing some of the expenditures in this area (as in the case of Brazil), with positive effects on the equity of transfers. As suggested by a CEPAL analysis (2007) for the years 1997-2003, the rise in public social expenditure likely generated positive redistributive effects, as the distribution of all components of social expenditure was less concentrated than that of private incomes. These are average regional data and things vary between countries. There are also indications that the incidence of social expenditure became more progressive over time and went a long way in redistributing

income to the poor (López-Calva and Lustig 2010). Democratization thus seems to have impacted not only labour policies but also non-clientelistic redistributive measures.

### 3 Regression analysis

#### 3.1 Dataset and bilateral correlation coefficients among explanatory variables

The hypotheses discussed in Section 2 about the impact of the underlying causes of inequality were tested on the basis of the Income Distribution in Latin America (IDLA) dataset (Martorano and Cornia 2011) that includes data for 18 countries for the years 1990-2009. The dependent variable is the Gini coefficient of the distribution of household disposable income per capita (for the sources see Cornia 2012, footnote 19). The explanatory variables were clustered into six groups:

- (i) international economic conditions;
- (ii) rate of growth of GDP per capita;
- (iii) changes in exogenous factors, such as dependency and activity rates;
- (iv) the distribution of human capital among workers;
- (v) policy factors—the real effective exchange rate and its square, the ratio of direct to indirect taxes, the minimum wage interacted with the share of formal sector workers, and public expenditure on social security/GDP (there are no time series on social assistance/GDP); and
- (vi) three dummies—the ‘social democratic’ and ‘radical-populist’ dummies and the Polity2 index that proxies the quality of democracy.

A low bilateral correlation between the explanatory variables included in the regression (Cornia 2012: Annex Table 2) excludes major problems of multicollinearity.

#### 3.2 Estimation procedure and regression results

Given the panel structure of the IDLA database, the estimation procedure chosen had to take into account that each country is observed over several periods. Such a model takes the following form:

$$GINI_{it} = \alpha + \beta X_{it} + \eta_i + e_{it}$$

where  $Gini_{it}$  is the coefficient of the distribution of household disposable income per capita,  $X$  is a vector of 14 explanatory variables (see Appendix Table 1), the subscripts  $i$  and  $t$  refer to the countries and the years of the panel,  $\eta_i$  is a time-invariant country’s fixed effect,  $e_{it}$  is the idiosyncratic error term, and  $\alpha$  and  $\beta$  are the parameters to be estimated. Given this, a suitable panel estimation procedure is the least square dummy variable (LSDV) (not shown) and the Generalized Method of Moments (GMM) estimator, which includes among the explanatory variables the Gini coefficient retarded one year to capture the path-dependent and slow-moving nature of Gini, as even large year-to-year changes seldom exceed a couple of Gini points (or 5 per cent of its level). In addition, the dynamic panel data estimation one-step system GMM procedure was introduced to take into account problems of reverse causation and endogeneity.

The results of the GMM reference model (first column in Table 9) confirm in most cases the conjectures made in Section 2 about the *average regional impact* of the underlying causes of the recent decline in income inequality. In particular:

- As expected, the *lagged Gini* has a high value and is significant, due to its high persistence mentioned above;

- As far as *international economic conditions* are concerned it appears that, contrary to what is argued in Section 2, the gains in terms of trade of the last decade contributed directly and in a statistically significant (if modest) way to the recent decline in inequality, while migrant remittances were not significant at the regional level, and the FDI stock raised inequality strongly and significantly;
- *GDP growth per capita* has a negative sign as expected, but its parameter is low and so is its significance;
- The exogenous yearly *changes in dependency rates and activity rates* have a sign that is small and non-significant, as both of them are heavily trended, as confirmed also by the national case studies in López-Calva and Lustig (2010);
- The reduction in the *inequality of the distribution of educational achievements*, which is expected to capture the lagged effect of public efforts in the field of education, is significantly related to income inequality, thus confirming prior findings (López-Calva and Lustig 2010);
- As for the impact of *fiscal policy*, the ratio of direct/indirect tax revenue (which rose in all countries over 2002-09) is found to be significantly and negatively associated with income inequality, thus confirming the conjectures in Section 2. In turn, the ratio of social security/GDP (which comprises also social assistance and non-contributory pensions) is significant as well, though the incidence of social insurance (that is, two-thirds of social security expenditure) is only moderately progressive;
- As for the *macroeconomic and labour policies*, the parameters of the linear and quadratic specification of the *real effective exchange rate* (REER) are both strongly significant, confirming that a 20 per cent real devaluation, for instance, would reduce income inequality by 1.54 points.<sup>4</sup> As for the labour policies, Table 9 corroborates the predictions of Section 2 about the modest but significant equalizing effect of rises in minimum wages during the last decade;
- For the *political economic variables*, the two dummy variables are highly significant and have large coefficients (indicating that the policy variables included in the regression do not capture all relevant policy changes (for example food subsidies and monetary policy) affecting inequality. In addition, on top of the governments' political orientation, the variable 'Polity2 index'—which measures the quality of democratic institutions—shows a strong effect on inequality during the last decade. Altogether, Table 9 confirms most of the hypotheses about the underlying causes of inequality formulated in Section 2, as all the signs of the estimated parameters coincide with those expected ex ante, except in the case of the terms of trade (see later).

As noted, the estimated parameters in the reference GMM model (column 1, Table 9) represent average regional effects that do not do justice to the specificities of various country sub-groups. To solve this problem, the reference GMM model was estimated by adding to it interactions with variables that are particularly relevant in specific sub-groups, to identify the differential impact of some explanatory variables in specific contexts. To start with, the variables 'terms of trade index'

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<sup>4</sup>The interest rate was included in the regression but did not yield statistically significant results.

Table 9: Regression results over the period 1990-2009: Average regional effects and results for heterogeneous sub-groups

	GMM Standard	GMM-1 Model 1	GMM-2 Model 2	GMM-3 Model 3	GMM-4 Model 4	GMM-5 Model 5	GMM-6 Model 6
Gini coefficient ( $t-1$ )	0.6375***	0.6243***	0.5676***	0.6257***	0.6352***	0.6380***	0.6083***
Terms of trade index	-0.0104***	<b>-0.0302***</b>	<b>-0.0110***</b>	-0.0125***	-0.0103***	-0.0105***	-0.0122**
Terms of trade index x commodity exporters dummy		<b>0.0257**</b>					
Remittances/GDP	-0.0431	-0.0611	<b>0.0643</b>	<b>-0.0311</b>	-0.0415	-0.0371	-0.0346
Remittances/GDP x Remittances receivers dummy			<b>-0.2978***</b>				
FDI stock/GDP	0.0353***	0.0353***	0.0376***	<b>0.0225*</b>	0.0355***	0.0335***	0.0240**
FDI stock/GDP x Andean group dummy				<b>0.0328*</b>			
GDP/capita growth rate	<b>-0.0402*</b>	<b>-0.0444**</b>	<b>-0.0406*</b>	<b>-0.0394*</b>	<b>-0.0404*</b>	<b>-0.0402*</b>	<b>-0.0377</b>
Dependency rate (growth rate)	-0.2021	-0.1096	-0.3815	-0.1434	-0.2055	-0.1732	-0.2135
Activity rates (growth rate)	0.0247	0.0421	0.1036	0.0338	0.0255	0.0736	0.1175
People with tertiary and secondary education/people with primary or no education <sup>a</sup>	-0.9085*	-1.0856**	-0.9746**	-0.8933*	-0.8903*	-0.9577*	-0.7748
Direct/indirect taxes	-0.5307*	-0.5927*	-0.7026**	-0.3492	-0.5255	-0.4858	-0.3463
Public expenditure on social security (% GDP)	-0.1643*	-0.1418	-0.1314	-0.1902**	-0.1636*	-0.1122	-0.182
REER	-0.0233*	-0.0346**	-0.0250*	-0.0257**	-0.0234*	-0.0225	-0.0341*
REER <sup>2</sup>	0.0001*	0.0001**	0.0001*	0.0001**	0.0001*	0.0001*	0.0001**
Minimum wage index x share of formal sector workers in total number of workers	-0.0109**	-0.0115**	-0.0117**	-0.0107**	-0.0110**	-0.0112**	-0.0107
Social democratic dummy	-0.3746*	-0.3979*	-0.4582**	-0.3522*	-0.3656	-0.4607*	-0.4264*
Radical-populist dummy	-1.6840***	-1.9414***	-1.7178***	-1.4827***	-1.6856***	-1.7083***	-0.6538
Polity2 index (quality of democracy)	-0.1740***	-0.1642***	-0.1736***	-0.1623***		-0.1828***	-0.2131***
Composite index of quality of democratic institutions, consolidation of democracy and electoral turnout					<b>-0.3483***</b>		
Import tariff rate (%)						<b>0.0092</b>	<b>-0.1768*</b>
Import tariff rate x skill premium							<b>0.1053**</b>
Constant	23.0956***	25.4785***	26.6505***	23.9626***	23.3249***	22.5951***	25.3196***
Observations	288	288	288	288	288	275	255
Number of countries	18	18	18	18	18	18	18

Notes: Commodity exporters are Bolivia, Chile, Colombia, Ecuador, Peru, Venezuela; 'remittances recipients' are El Salvador, Guatemala and Nicaragua; the Andean group includes Bolivia, Colombia, Ecuador, Peru and Venezuela. <sup>a</sup> Both variables are expressed in terms of their yearly variations. \*, \*\* and \*\*\* significant at the 10, 5 and 1 per cent levels of probability.

Source: Cornia (2012).

and ‘migrant remittances/GDP’ were interacted for the respective dummies ‘commodity exporters’ and ‘remittances receivers’, which were set equal to 1 for the countries where such phenomena are particularly important and zero otherwise (columns 2 and 3). As shown by the reference GMM model in Table 9, the terms of trade index is significant and negative but the

interaction term of the terms of trade is positive and significant (column 2), suggesting that for the sub-group of commodity exporters, inequality rises in line with terms of trade improvements, including because of Dutch disease effects. The introduction of this interaction does not perceptibly alter the sign and size of the other parameters, except the significance of public expenditure on social security. Likewise, Model 2 confirms that while remittances have on average an unequalizing effect, they are equalizing in those nations where remittances are important and long-lasting (such as El Salvador), and such as to generate for instance migrant networks, which—by reducing migration costs—open up the possibility of migrating also to low-income people. Third, the FDI/GDP variable was interacted with the dummy ‘Andean group’—a country sub-group where foreign investments in the mining sector are particularly important. Model 3 confirms that the FDI/GDP are unequalizing in all countries but that their effect is more pronounced in this group. Fourth, as suggested by the political scientists, the quality of democracy (proxied by the Polity2 index) is influenced not only by the effectiveness of democratic institutions but also by their consolidation (that is, the uninterrupted number of years in which a full democratic rule existed in a country, regardless of the political orientation of the successive governments that run a country) and by the level of popular participation in free elections. Thus, in Model 4, the Polity2 index was replaced by a composite variable<sup>5</sup> combining the Polity2 index (with weight 0.5), the number of years of uninterrupted democratic rule (weight 0.25) and the turnout rate in political elections (weight 0.25). This alternative specification yields a higher and statistically significant parameter. Finally, Model 5 introduces in the standard model the average import tariff rate in order to measure the impact of trade liberalization on inequality. The parameter of such a variable turns out, however, to be statistically non-significant, probably because while trade liberalization had a strong unequalizing initial impact in the 1980s and part of the 1990s, its effect vanished during the 2000s. However, when such a variable is interacted in Model 6 with the ‘skill premium’ it appears that while trade liberalization, on average, might have been equalizing for the period considered, it was unequalizing in the countries where the skill premium increased, thus offering some support to the ‘skills-biased technical change’ hypothesis.

In conclusion, with all the limitations imposed by incomplete data, not completely satisfactory specifications forcibly adopted for some variables, measurement errors and other econometric issues, the results of Table 9 provide a fairly consistent picture of the positive, negative or non-significant inequality impact of the variables.

## **4 Inequality during the crisis of 2008-12—and prospects for its further reduction**

### **4.1 Inequality changes over 2008-12**

The above analysis has focused on the inequality changes and their drivers over the period 2002-10. Most of these years (for example the 2003-08 period) were years of fairly rapid growth and favourable global conditions that—directly or indirectly—generated some positive effects on the Latin American economies. Thus, the question immediately arises whether inequality continued falling during the turbulent years of 2009-12 (no data are available for 2013, except for Argentina).

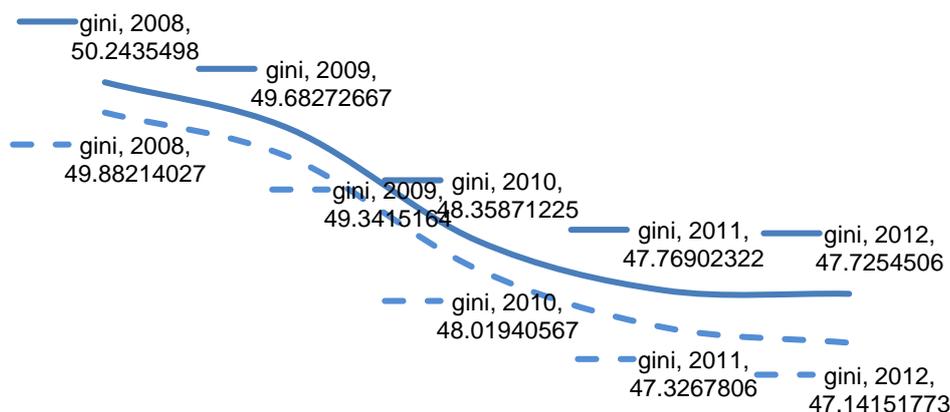
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<sup>5</sup>I owe this suggestion to Bruno Martorano of the University of Florence.

New standardized data recently released by SEDLAC allow us to determine whether inequality rose or continued to head downwards during these more volatile years. Had inequality stopped falling or begun rising during these years, one would be tempted to consider the 2002-08/09 gains as ‘cyclical’ rather than ‘structural’.

In this regard, Figure 5 shows that, despite the growth deceleration of 2008-09, the sluggish growth of 2011-12 and a worsening of global inequality continued declining in all 11 countries for which there are complete Gini data for the years 2008-12. In fact, for some of these countries, inequality declined even faster than during the prior six years. A simple statistical test (not shown) for these last four years and these 12 countries finds that changes in GDP growth rates and Gini coefficients are orthogonal, thus suggesting that the inequality decline that began in 2002-03 seems to be structural and to depend mainly on factors other than the business cycle. Yet, in 2012 there was a perceptible slowdown in the pace of decline, as the average Gini coefficient fell by only 0.2 points. However, CEPAL’s Social Panorama (CEPAL 2013: 80) argues that ‘La desigualdad distributiva ha mantenido la tendencia a la reducción que empezó a manifestarse hace un decenio’. Its Annex Table IA2, shows in fact that the Q10/Q1-4 ratio improved in seven of the 11 countries for which this index is available for both 2011 and 2012. But the CEPAL data show that the changes in the income share of the bottom 40 per cent and Gini coefficient for the same 11 countries improved in five, worsened in four and stagnated in two. Everything considered, therefore, it appears that while in 2009-11 inequality fell as fast, or faster, than over 2002-08, in 2012 the decline continued in half of the countries while in the other half it recorded a moderate increase.

Figure 5: Trend in the Gini coefficient of per capita household income, 2008-12



Notes: The trend is based on a balanced panel of 11 countries with complete data for the years 2008-12: Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Panama, Peru and Uruguay. The dotted line includes Uruguay (which witnessed a higher-than-average Gini drop over 2008-01). The solid line excludes it.

Source: Author’s compilation from SEDLAC and CEPAL data.

How can one explain such a surprising trend? The World Bank (2010) has argued that, unexpectedly, labour markets were little affected by the 2009 crisis. While unemployment rose in eight of the 11 countries it analysed, the average increment in jobless numbers was only 0.9 while the average activity rate fell negligibly (Table 5). In turn, real wages remained relatively strong or rose (except in hard-hit Mexico and Ecuador) in part due to the low inflation of 2009; see World Bank 2010). Informality rose modestly (0.3-0.4 points on average) mainly in countries with rising unemployment. In addition, the skilled/unskilled, formal/informal and male/female wage gaps continued to fall, most likely because of the adoption of vigorous labour market policies and the

continuous rise in the supply of workers with secondary or higher education. Finally, the countercyclical fiscal policy implemented in 2009-10 (Figure 4)—and possibly, during the subsequent years—permitted the continued expansion of highly equalizing social assistance programmes that have gained huge political support in the region because of their low-ish fiscal cost and non-negligible impact. A further investigation of the very recent inequality decline is needed, however.

## 4.2 Further reducing inequality through deepening the recent reforms

Despite the decline recorded in 2002-08 and again in 2009-12, income inequality in many Latin American countries remains among the highest in the world. Particularly in Central America and the Andean countries, future efforts will have to deepen the comparatively timid policy reforms introduced during the 2000s, as well as remove the structural causes of inequality by broadening the access of the poor and the middle class to land, credit, investment opportunities, high-quality secondary and tertiary education and public subsidies. A further reduction of inequality will also require a recalibration of the region's pattern of development and approach to global economic integration, to embed future inequality declines in a sustainable pattern of growth. All this will have to happen, however, in a global context that might be less favourable than the one of 2003-08. These two points are discussed below.

### *Improve further the equality of opportunities among social classes*

There is still considerable scope to improve inequality through the 'social democratic' reforms introduced in the 2000s. To start with, progress in raising average secondary and tertiary enrolment rates and reducing educational inequality was not accompanied by similar gains in the quality of education. As shown by a six-country CEPAL (2010) study of the PISA (Programme for International Student Assessment) science scores of 15-year old children belonging to four quartiles of the ISEC (*Indice Socio Económico y Cultural*) index (which approximates the socioeconomic and educational level of their families of origin), there are still considerable performance differences in favour of children from the upper ISEC group who often attend better-quality private secondary schools (Table 10)—a topic that represented a major campaigning item during the January 2014 Chilean elections.

This persistent gap reduces the chances for children of lower socioeconomic status of being selected during university admission examinations. As a result, while both the ratio and the difference between the tertiary enrolment rate of children belonging to the top and bottom income quintiles declined in Argentina, these indices continued to rise in Colombia (Table 10). In Brazil (and for the region as a whole) the ratio fell, but the absolute difference rose. To continue improving the educational opportunities for children of low-income families as a way to equalize life chances and future income distribution, governments thus need to broaden tertiary education access by improving the quality of teaching in secondary education and reducing the direct and opportunity cost of education borne by poor children. All this is all the more necessary, given the possibility of new 'technological shocks' that might shift again labour demand for workers with tertiary education. Without corrective measures, it cannot be excluded that the skill premium may start rising again in the future.

Table 10: Net tertiary enrolment rates, total and by income quintiles, 1990-2010

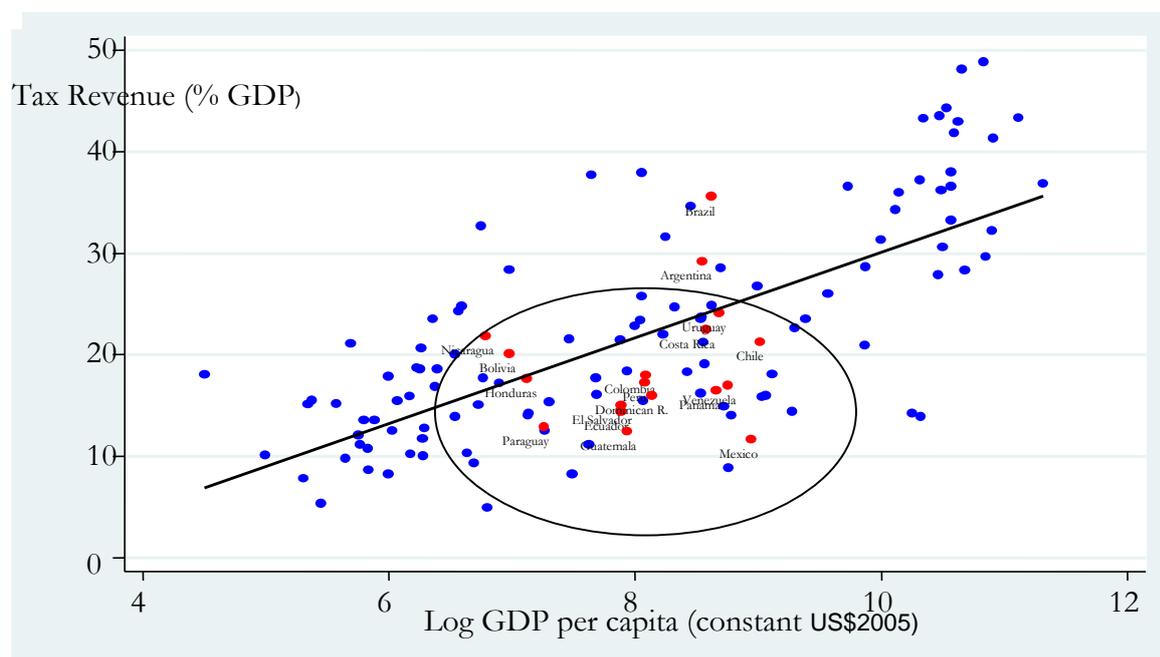
		Equivalentized income quintiles						Q5/Q1	Difference	Q5-Q1	Difference
		Total	1	2	3	4	5				
Argentina	1991	19.0	7.7	13.6	5.5	21.5	41.1	5.33		33.4	
	2000	28.2	9.2	13.0	24.8	35.3	55.3	5.98	0.65	46.0	12.68
	2011	30.9	18.0	25.3	29.5	38.2	56.6	3.15	-2.83	38.7	-7.38
Brazil	1990	6.1	0.4	0.5	1.8	5.6	24.2	62.96		23.8	
	1999	9.3	0.9	1.5	3.1	8.2	35.4	40.39	-22.57	34.6	10.77
	2009	16.3	3.3	5.1	9.7	20.4	48.8	14.84	-25.54	45.5	10.92
Colombia	1996	13.6	4.2	4.7	7.1	12.5	36.4	8.77		32.3	
	2000	17.1	8.3	5.7	10.5	17.7	40.9	4.95	-3.83	32.6	0.32
	2010	23.9	8.5	11.7	18.5	27.8	55.8	6.56	1.61	47.3	14.73
Average for 15 LA countries		11.3						13.3		24.8	
		15.9						12.1	-1.2	33.2	8.4
		22.0						10.0	-2.1	39.6	6.3

Source: Author's elaboration on the basis of SEDLAC data (n.d.).

*Raising revenue/GDP ratios—and improving the targeting of social expenditure:* The above and other state interventions will need to be financed in a non-inflationary manner. Despite the increase in the tax/GDP ratio recorded in the 2000s and improvements in tax progressivity, in a large part of the region the trend towards rising taxation needs to continue to preserve macroeconomic stability and increase income redistribution via the budget, much of it in the form of in-kind services that equalize opportunities. In this regard, a gradual increase of the *effective tax/GDP* ratio to its *potential* level would generate additional revenue equal to 3.5-4.0 per cent of GDP for the region as a whole. Figure 6 suggests there is still room to do so in most of the region, at no cost to economic efficiency, as shown by the recent case of Uruguay. This measure would also reduce the inequality of post-tax income distribution. For instance, an increase in income tax revenue of three GDP points would reduce post-tax inequality by three Gini points, bringing the average Latin American country close to the levels of redistribution achieved via taxation in western Europe (Cornia et al. 2011).

Especially in countries with an already high revenue/GDP ratio (Argentina, Brazil and Nicaragua, see Figure 6) important distributive gains can be obtained also (or mainly) by improving the quality and targeting of social expenditure. Better budgeting, spending reviews, impact evaluations, and policy feedbacks are therefore needed, as shown *inter alia* by Lustig et al. (2013) in their study on 'Commitment to equity in Latin America'. As suggested by recent political events (as in the case of Brazil), high taxes or their increase would be legitimized and effectively executed only if governments simultaneously and equitably expanded the provision of good-quality public services while avoiding state capture by the elites. A comparison of the redistributive effects of fiscal operations in different groups of countries shows that some 80 per cent of the redistributive effect is due to public expenditure (Cornia 2014). There is a need to improve the allocation and quality of spending.

Figure 6: Relation between tax revenue and log GDP/capita in 92 developed and developing countries, 2007



Notes: The 'revenue effort index' is the ratio of effective to potential tax/GDP ratio (both net of social security contributions). The potential tax/GDP ratio was calculated by regression on a panel of 92 developing and developed countries, including as independent variables GDP/capita, the share of (relatively easy-to-tax) manufacturing in GDP, and the share of hard-to-tax agriculture in GDP.

Source: Author's calculations.

### 4.3 Embed the decline of income inequality in a sustainable pattern of growth

If implemented with care over the next few years, the above 'social democratic reforms' could go a long way in further reducing income inequality. But structural reforms will be required—in both the poor and rich parts of the region—to deal with the deep-seated structural inequality that has affected the region since the beginning of the last century.

In economies where agriculture is still an important source of employment, there is a need to support smallholders' competitiveness by increasing their access to land (still a major problem in most of Central America, a few Andean countries, Paraguay and parts of Brazil), investing in rural infrastructure, reducing the urban bias of public policy, and adopting an exchange rate that favours the traded sector.

A second structural problem that needs fixing is the segmentation of the labour market and persistent spread of informal employment. In fact, wage inequality and the urban-rural income gap reflect to a large extent the gap between formal and informal wages. Informality also feeds inequality by narrowing the scope of contributory social protection and exacerbating the need for social assistance transfers. While the expansion of the formal sector depends on broader issues of capital accumulation, labour productivity and modernization of production, the problems could in part be tackled immediately as several informal workers are currently employed in formal sector firms.

A third structural problem affecting long-term growth and inequality concerns the pattern of economic integration in the world economy, and the implicit structure of production in the region.

As argued by Ocampo (2012), trade liberalization during the last quarter century has led to rapid export growth but only to a moderate growth in GDP and labour productivity, persistent vulnerability to external shocks, a ‘re-primarization’ of exports and the risk of de-industrialization. A continuation of this pattern of trade integration and production is thus unlikely to help reduce inequality because of its modest growth impact and because it shifts resources to the capital-intensive primary commodity and non-traded service sectors. This problem could be approached by adopting an ‘open economy industrial policy’ that supports the development of labour-intensive manufacturing and service sectors by means of active production measures, technological upgrading, entry into new sectors, a strengthened regional integration, and a rebalancing of the asymmetries that characterize Latin America’s trade with China. Some authors (Katz 2013), however, see the return to a new industrializing phase of the Latin American development as problematic as the creation of a new nationalist bourgeoisie is hampered by the opposition of large commodity exporters who obstruct the re-industrialization process. Finally, if unaddressed, other structural biases of the Latin American economy—low savings, dependence on foreign capital, and continued pressures towards sudden real appreciation during bonanzas or sudden real depreciation in periods of crisis—may well block future inequality gains by retarding the shift to a long-term sustainable, equitable and structurally different growth path.

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## Appendix

Table A1. Definition of variables used in regression analysis

Variable	Description	Unit of measurement	Data source
Gini coefficient of disposable income/capita	Gini on income	Index (0–100)	IDLA database (CEDLAS plus other sources for missing years)
Terms of trade index	International terms of trade, goods and services	Index 2000=100	CEPALSTAT
Remittances/GDP	Workers' remittances/GDP	Share of GDP	UNCTAD
FDI stock/GDP	Net stock of foreign direct investment/GDP	Share of GDP	UNCTAD
GDP/c growth rate	Growth rate of GDP per capita	Rate of growth	ERS International Macroeconomic Dataset
Dependency rate (growth rate)	Ratio of dependents (people younger than 15 or older than 64) to the working age population	Percentage variation	WDI
Labour force participation (growth rate)	Labour participation rate ( per cent of total population aged 15-64+)	Percentage variation	WDI
Human capital distribution among workers	People with tertiary & secondary education/ people with primary or no education	Share on population aged 15 years and over	Barro and Lee
Public expenditure on social security/GDP	Public expenditure on social security/GDP	Ratio	CEPALSTAT & national sources
REER	Indices of real effective exchange rate	Index 2000=100	CEPAL's Econ Survey of Latin America and the Caribbean
Minimum wage index	Minimum wage index	Index 2000=100	CEPALSTAT
Informal sector employment	Share of informal sector employment on total employment	Percentage share	CEPALSTAT, ILO, SEDLAC and data from national statistical offices
Social democratic	Dummy denoting a country/year with social democratic government	1 (social democratic) 0 (all other cases)	Author's compilation
Radical-populist	Dummy denoting a country/year with radical-populist government	1 (populist) 0 (all other cases)	Author's compilation
Polity2 Index	Index of democracy measuring the quality of democratic institutions	Index 0–10	Polity IV Project
Democratic participation	Vanhanen index of participation	0–100	Vanhanen measures of democracy 1820-2010, available
Democratic consolidation	No. of years since the most recent regime change		Polity IV Project
Composite index of democracy	Average of Polity2 index (weight 0.5), yrs of uninterrupted democracy (weight 0.25) and index of participation to political elections (0.25)	Index 0–10	Author's compilation

Source: Author's compilation.