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Inequality Trends and their Determinants

Latin America over 1990-2010

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Abstract

The paper reviews the steady and widespread decline in income inequality which has taken place in most of Latin America over 2002-10 and which—if continued for another 2-3 years—would reduce the average regional income inequality to pre-liberalization levels. The paper then focuses on the factors, which may explain such inequality decline. A review of the literature and an econometric test indicate that a few complementary factors played an important role in this regard, including a drop in the skill premium following a rapid expansion of secondary education, and the adoption of a new development model by a growing number of left-of-centre governments which emphasizes fiscally-prudent but more equitable macroeconomic, tax, social expenditure and labour policies. For the region as a whole, improvements in terms of trade, migrant remittances, FDI and world growth playeda less important role than expected although their impact was perceptible in countries where such transactions were sizeable.

Keywords: income inequality, human capital inequality, policy regimes, external conditions, Latin America

JEL classification: D31, E6, H53, I28, I38

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Acronyms

3SLS	3 stages least squares estimator
FDI	foreign direct investments
HIPCs	heavily indebted poor countries
IDLA	income distribution in Latin America
ISI	import substituting industrialization
LOC	left-of-centre (LOC) regimes
LSDV	least square dummy variable estimator
MDGs	Millennium Development Goals (of the UN)
ODA	overseas development aid
MENA	Middle East and North Africa region
SME	small-medium size enterprises
SBTC	'skill-bias technical change' hypothesis
TNCs	transnational corporations

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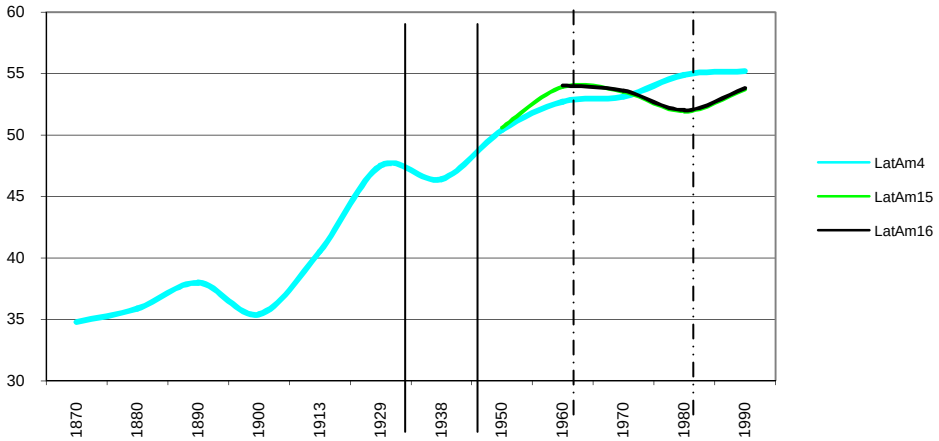
1 Trends in income inequality

1.1 Initial conditions and trend between the 1950s and 1980

The colonial origins of the high income inequality that has afflicted Latin America for almost five centuries (quantitative data are available only for the last 150 years) have been well analysed by Engerman and Sokoloff (2005). In their view, the high initial inequality in the distribution of land and political power inherited from the colonial regimes led to the development of institutions, which 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 (Torche and Spilerman 2006). Prado de la Escosura (2005) offers a broader interpretation of the origins of inequality, which encompasses also the Stolper-Samuelson corollary of the Heckscher–Ohlin theorem. In his view, the improvement in international terms of trade experienced during the globalization of 1870-1914 by Latin America (which had meanwhile become a major world supplier of agricultural commodities) raised land yields and the land rental/wage ratio benefitting in this way a tiny class of large landowners, as confirmed by Alvaredo (2010) in the case of Argentina. The trend towards rising inequality was interrupted during the inter-war years, which witnessed a decline in world trade (Figures 1 and 2), but recovered during the recent globalization (ibid).

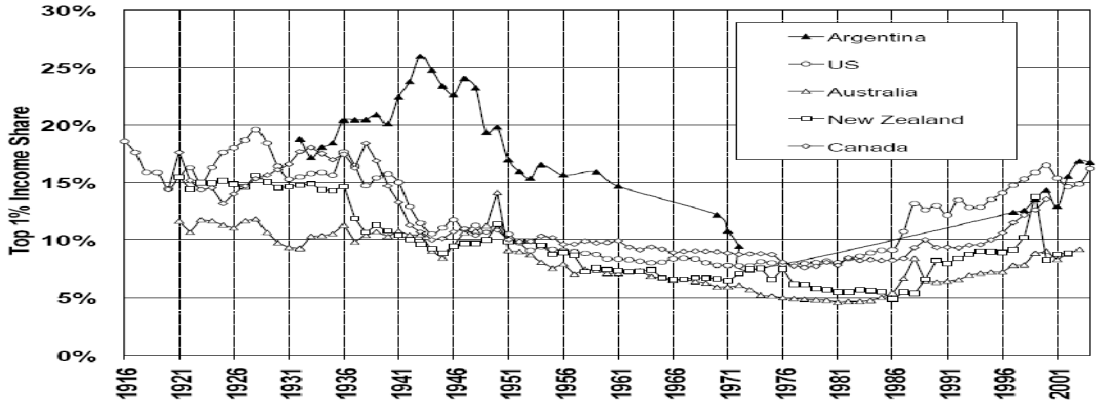
As a result, in the early 1950s the region was characterized by high structural inequality, which depended on: (i) a high land concentration, a legacy of the historical dispossession of the indigenous peasantry by the colonial authorities, which meant that in the 1950s the Gini coefficient of land distribution ranged between 0.61 (Mexico) and 0.93 (Paraguay) as opposed to between 0.29 and 0.56 in Asia and Africa (Frankema 2009; FAO various years). As a result, the land rent of the *latifundistas* (less than one per cent of the population) absorbed 20-25 per cent of national income, a value much higher than in other 'western offshoots' (Figure 2); (ii) an unequal distribution of human capital due to limited access to education by the poor; (iii) the 'curse of natural resources' by which the four countries (Bolivia, Ecuador, Mexico and Venezuela) endowed with large deposits of natural resources and the other three (Chile, Colombia, Peru) with smaller but non-negligible mineral deposits traditionally exhibited high levels of concentration of such assets. Furthermore, in the resource sector, production is capital- and skills-intensive and the demand for unskilled labour limited, a feature that distorts both the functional and personal distribution of income; (iv) an urban bias resulting from overvalued exchange rates, pricing policies for inputs and products that penalized agriculture, a biased allocation of public expenditure, and the drainage of rural savings. As a result, around 1950 rural incomes per head ranged between one-quarter and one-half of urban incomes (Prado de la Escosura 2005: Table 12.6). In view of all 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 (Table 1), i.e., among the highest in the world.

Figure 1
Population weighted Gini estimates and conjectures for Latin America



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

Figure 2
Trends in the income share of the top 1% of the taxpayers in Argentina



Source: Alvaredo (2010), by permission of Oxford University Press.

Between the 1950s and 1982, the years of import substituting industrialization (ISI) and dominant focus on the domestic economy, income inequality declined only moderately in several countries of the region due to the urban bias of the ISI policies (Prado de la Escosura 2005). However, inequality fell markedly until the mid-1970s in Argentina, Costa Rica Uruguay and Venezuela due to growing urbanization, the introduction of income tax, redistributive policies and the creation of an embryo of welfare state (Figure1, Table 1).

The 1970s witnessed also a bifurcation of trends. While, as noted, inequality fell moderately in most of the region, it rose in the Southern Cone (Londoño and Székely 2000; Gasparini et al. 2009) where an extreme version of the neoliberal reforms had been implemented by military juntas. The combination of a slow decline in inequality over the 1950s-60s and of a modest and selective fall over the 1970s meant that most countries in the early 1980s had a lower income inequality than in 1960 (Table 1).

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

Starting from the mid-late 1970s, and increasingly so from the beginning of the 1980s, most Latin American countries abandoned the ISI paradigm and introduced policies inspired by the neoliberal approach. These policies aimed at stabilizing the economy, liberalizing domestic markets, privatizing state companies, and reducing the role of the state in the economy. These measures paved the way to the liberalization of international trade, foreign direct investments (FDI) and portfolio flows. The supporters of these policies claimed that they would have restored the conditions for growth and that, in line with the predictions of the Stolper-Samuelson corollary of the Hercksher-Ohlin theorem, trade and capital account liberalization would have improved domestic inequality in nations with an abundant supply of unskilled labour. Not all countries followed this approach. In the mid-late 1980s Argentina, Peru and Brazil adopted heterodox models of macro stabilization and growth, assigning a central role to administrative measures such as price and wage controls. Initially, the *Austral*,*Inti* and *Cruzado Plans* led to better growth, inflation, and distributive outcomes than the orthodox approach. Nonetheless, after one or two years, these approaches collapsed because of their inability to control public deficits and inflation, boost investments and exports, and achieve a redistribution in favour of wages and rural incomes.

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 (Table 1, Figure 3;Altimir 1996;Londoño and Székely 2000). Despite the return to a moderate growth and extensive internal and external liberalization, income concentration between 1991 and 1998 worsened further in almost two-thirds of the cases, albeit at a slower pace than in the 1980s (Székely 2003; Gasparini et al.2009; Table 1, Figure 3).

Thus, the un-weighted average regional Gini coefficient rose by 2.32 points from an already high level between the early 1980s and 1990, by another 1.55 points between 1990 and 2000, and by 1.15 points during the recession of 2001-02, i.e., by a total of almost 5 points for the two decades characterized by the dominance of the neoliberal policies. With the GDP rebound of the years 2003-04, the average Gini index fell on average by 0.78 points (Figure 3 and Table 1) but inequality continued to decline also during the subsequent years,bringing the Gini back to the level of the late 1980s[1](see later). Interestingly, income inequality did not generally rise during the crisis year of 2009 while it fell with the recovery of 2010 in two-thirds of the countries where data are available (Table 1).

1 Thanks to the large inequality drop recorded in Argentina, Brazil and, to a lesser extent, Mexico (the three largest countries in the region), the extent of the population weighed Ginidecline would be even greater.

Table 1
Trends in survey-based Gini indexes* of the distribution of disposable household income per capita

	Early 1960s	Early 1970s	early 1980s	1990	2000	2002	2004	2008	2009	2010
Argentina	44.04	36.07 ↓	40.28 ↑	45.55 ↑	50.40 ↑	53.27 ↑	49.60 ↓	45.94 ↓	44.86↓	44.22 ↓
Bolivia	—	54.86	—	54.50	57.60 ↑ (f	59.78 ↑	58.30 ↓(a	55.57 ↓	—	—
Brazil	62.54	68.42 ↑	57.94 ↓	60.38↑	58.60 ↓ (f	58.30 ↓	56.60↓	54.21 ↓	53.74=	—
Chile	52.66	53.18 =	52.28 ↓	55.13↑	55.20 =	54.56 ↓ (d	54.60 =	51.90↓	51.94 =	—
Colombia	63.95	64.39=	52.50 ↓	51.92 =	55.30 ↑	58.69↑	56.20↓	56.42 =	56.02 =	55.42↓
Costa Rica	60.89	57.59 ↓	43.22↓	43.96=	45.80 ↑	49.84 ↑	48.00↓	48.37 =	50.21 ↑	—
Dominican Republic	—	—	44.48	48.56↑	51.90↑	50.02 ↑	51.90↑	48.99 ↓	48.85 =	47.19 ↓
Ecuador	47.01	51.80 ↑	—	44.94	56.00↑	54.51 ↑ (a	53.60↓	50.17 ↓	48.83↓	48.89 =
El Salvador	59.97	55.14 ↓	—	52.32	51.90 =	52.23 =	48.40↓	46.55↓	48.07 ↑	—
Guatemala		55.73	54.61↓	57.69↑	54.20↓	58.22 =	53.20↓	54.36↑(d	—	—
Honduras		61.53	53.34↓	53.49=	54.10↑	56.68 ↑	54.60↓	58.13 ↑ (c	55.30 ↓	—
Mexico	63.67	56.37 ↓	48.44↓	52.83↑	53.80↑	51.03 ↓	50.80=	50.19 ↓	—	47.31 ↓
Nicaragua	—	—.	—	55.51	50.20 ↓ (g	50.22↓ (a	52.30↑	52.27 =	—	—
Panama	52.09	51.17 ↓	51.06 =	52.27↑	55.40↑ (e	56.45 ↑	54.80↓	54.88 =(d	52.09 ↓	51.95=
Paraguay	—	—	—	58.38	56.80 ↓ (f	56.38 ↓	54.00↓	52.14 ↓	50.68↓	52.17 ↑
Peru	65.25	67.25 ↑	52.50↓	46.40↓	50.80 ↑	55.64↑	50.50↓	48.92 ↓	49.08 =	48.14 ↓
Uruguay		40.95	41.35 =	42.28 =	44.00 ↑	46.64↑	45.90↓	46.27 ↑	46.27 =	45.30↓
Venezuela	44.61	43.16↓	43.24 =	42.09↓	44.10 ↑	47.37 ↑	45.40↓	40.32↓	—	—
LAC		54.51	48.86 ↓	51.01↑	52.56 ↑	53.71 ↑	51.15 ↓	50.87 ↓	50.46 ↓	49. 76↓(h
No.of Gini changes inrelation to the prior period		3↑ 2 = 6↓	1 ↑ 3= 8 ↓	7 ↑ 4= 2 ↓	12↑ 2= 4↓	11 ↑ 2= 5 ↓	2 ↑ 2 = 14↓	3 ↑ 3= 12 ↓	2↑ 6 = 5 ↓	1 ↑ 2= 6 ↓

Notes: * These Gini coefficients may differ somewhat from those included in the project's case studies which often rely on national sources, while Table 1 relies mainly onSEDLAC data. A discrepancy among inequality indicators is a fairly common phenomenon.

The 1990-2010 data are drawn mainly from the CEDLAS database, other sources are used only as complements;

The first three columns are not strictly comparable with each other and with those for the subsequent years, as survey data from the 1960s to the 1980s are sparse, often refer only to the urban areas, and include few questions about income;

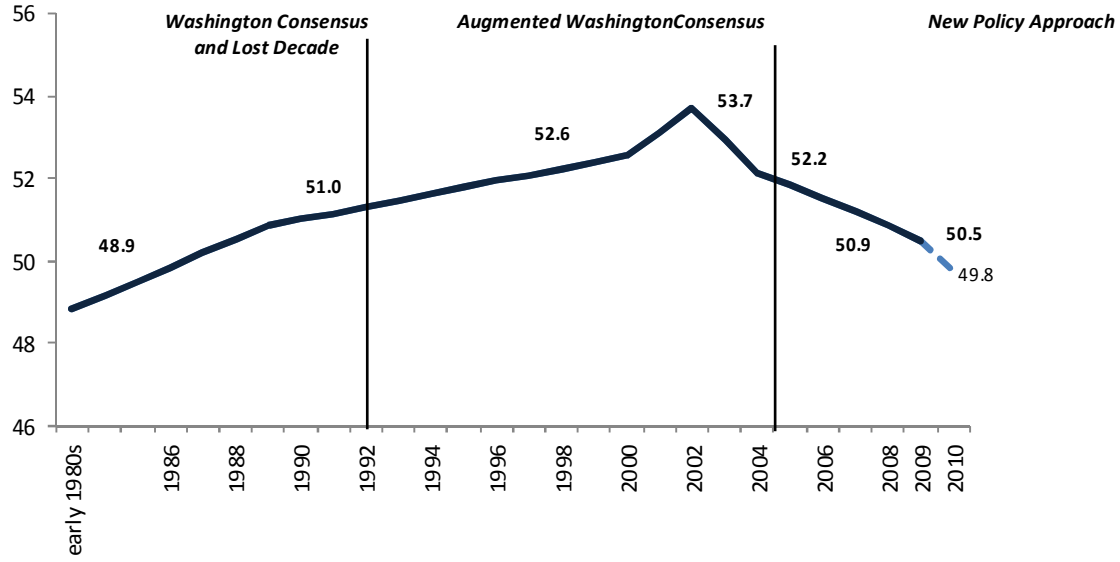
Household surveys underestimate capital income due to high non-response rate among the rich and as high incomes are truncated when processing the data. As a result, the survey-based Gini are smaller than those derived from the national accounts or tax files;

↓ and ↑ indicate declines and increases of at least 0.5 Gini points in relation to the prior column;

The data highlighted in green are the lowest for the entire period considered; a) refers to 2003; b) refers to 2005; c) refers to 2007; d) refers to 2006; e) refers to 1998; f) refers to 1999; g) refers to 2001; h) the regional value for 2010 has been calculated by subtracting from the 2009 average the mean decline of the Gini coefficient recorded over 2009-10 by the eight countries with data for both years.

Source: Author's compilation on the basis of the IDLA dataset (Martorano and Cornia 2011) for 1990-2010 and SWIID3 for earlier years.

Figure 3
Average regional Gini index of the distribution of household income per capita



Source: IDLA dataset and SWIID3 for the period early 1980s.

In terms of yearly changes, Figure 3 shows that the regional Gini yearly increment was greater during the 1980s (0.31 Gini points) than during the 1990s (0.22); that the drops over 2002-08 (0.47), 2009 (0.41) and 2010 (0.70 points, for eight countries with available data) were more sizeable than the yearly increases of the prior two decades; and that, if the pace of decline recorded during the 2000s is maintained, it will take another three years to return to the average pre-Washington consensus level of inequality of the early 1980s.

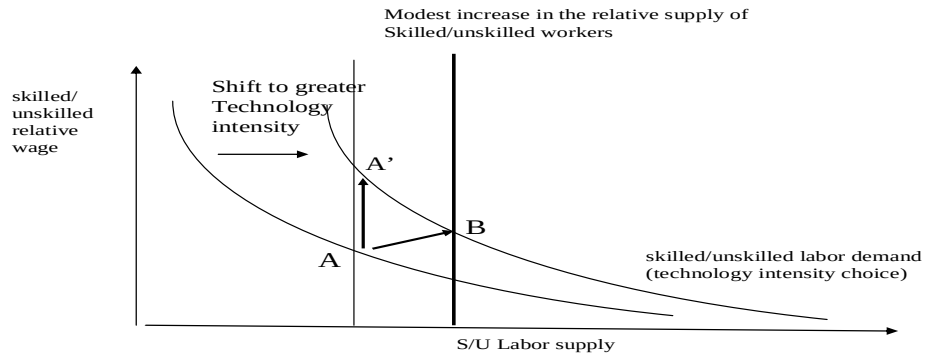
A key feature of the trend towards rising inequality during the 1980s and 1990s was the decline of the labour share in total income and a parallel rise in the capital share. For instance, between 1980 and the late 1980s, the labour share declined by 5-6 percentage points in Argentina, Chile and Venezuela and by ten in Mexico (Sainz and Calcagno 1992). Alvaredo (2010: Table 6.7) confirms that the income share of the top one percent of taxpayers in Argentina (whose labour income accounted for less than 50 percent of the total) rose from 7 to 15 percent between 1973 and 2002, while Sanhueza and Mayer (2011) show that in Chile it rose from 7 to 14 percent between 1980 and 1990. Five structural changes help to explain this remarkable shift. First, with stagnant growth and a slowdown in job creation during the 1980s, the unemployment rate for Latin America as a whole rose from 6.2 to 10.7 per cent between 1990 and 2002 (Table 8), and so did the number of underemployed. Second, the labour market was affected by a massive shift of labour to the informal sector, where low productivity and wages are the rule. Third, formal sector wages evolved more slowly than GDP per capita, while with rare exceptions, minimum wages fell in relation to average wages. Finally, wage differentials by educational level widened (Table 2).

What factors explain the deterioration of income inequality during the 1980s and 1990s? Barring an aggravation of the structural causes of inequality mentioned at the beginning of this paper, two sets of causes are generally mentioned in the literature and are briefly reviewed hereafter: first, the 'skill-bias technical change' (SBTC) hypothesis; and, second, the adoption of Washington consensus policies. The main effect of the skilled-

bias technological change induced by the trade liberalization of the 1980s and 1990s was to raise the demand for skilled workers (as shown by the rightward shift in the relative labour demand schedule in Figure 4), while its supply remained rigid because of limited public expenditure on secondary and tertiary education and the inability of poor would-be students to borrow. While there is clear evidence that the relative wage of skilled workers rose in most countries of the region in the 1990s (Table 2), it is not obvious whether this was due to the technological upgrading of the Latin American economies induced by trade liberalization or to other factors discussed below. Indeed, while trade liberalization eased the importation of labour-saving, skill-biased capital goods, the depressed growth and investment climate prevailing in the region during this period offered fewer incentives to replace old equipment with more advanced ones than had trade liberalization been accompanied by a surge in investment rates. Indeed, during the 1980s the average investment/GDP ratio in the region fell from 22 per cent in 1980 to around 16 per cent for the rest of the decade (and of this only 35-40 per cent includes machinery and equipment) and to 18 per cent in the 1990s. In contrast, the investment rate rose up to 24 per cent by 2008, thanks to the recovery of the last decade during which, however, the skill premium declined. Other factors likely contributed to explaining the changes illustrated in Table 2, including an increase in the supply of unskilled labour due to the high birth rates of the 1960s, a decline in the demand of unskilled workers and wages due to the informalization of the labour market linked to trade liberalization, and the decline of minimum wages and unionization. Therefore, the validity of the SBTC hypothesis remains untested in sufficiently general terms.

In contrast, the evidence on the impact of internal and external liberalization on income inequality in the region is more consistent. A study by Behrman, Birdsall and Széley(2000) on 18 Latin American countries over 1980-98 finds that the liberal reforms caused a significant overshooting of inequality, which was particularly intense on occasion of domestic financial reforms, capital account liberalization and tax reforms. Similar results are obtained by Székely (2003) for the years 1977-2000. His study finds that financial liberalization reduced the income share of the bottom three deciles, while trade reform did not affect them significantly. However, an extensive review of the literature (Koujianou-Goldberg and Pavcnik 2007) concludes that trade liberalization generated adverse distributive effects due to the immobility of production factors in the aftermath of liberalization, and the informalization of employment following the liberalization of capital account and the ensuing appreciation of the real exchange rate that shifted resources towards the non-traded and informal sectors. Likewise, an analysis of 21 liberalization episodes in 13 Latin American and six other countries over the 1980s and 1990s (Taylor 2005) shows that inequality rose in 13 cases, remained constant in six, and fell only in Chile and Costa Rica, i.e., countries where institutional conditions were ripe for the introduction of liberal reforms. Without exception, wage differentials by skill level were found to have risen as a result of a reduction of employment in the labour-intensive sector, of a rise in productivity and wage differentials by skill, of the reallocation of excess labour to the low-paying non-traded sector (informal trade, services and traditional agriculture) and of a rise of inequality within the latter. Finally, Gasparini and Cruces (2010) find that the two periods of large inequality increases in Argentina coincided with episodes of devastating macro crises and sweeping trade liberalization. The latter reduced employment in the unskilled labour-intensive sector due to competition by low-wage imports, skill-biased technical change, and the appreciation of the exchange rate during the 1990s.

Figure 4
Increase in 'wage premium' due to skill-biased technical change



Source: Author's compilation.

Table 2
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)

Note: Similar trends are evident when comparing the ratio of hourly wages of workers with high andmedium education.

Source: Author's elaboration on SEDLAC database(July 2011).

1.3 A widespread decline in income inequality over 2002-10

1.3.1 Main trends

The last decade was characterized by a Polanyian reversal in the political, economic and distributive trends observed during the 1980s and 1990s. Indeed, between 2002 and 2009/10, inequality fell—albeit to a different extent—in all 18 countries analysed with the exception of Nicaragua and Honduras where it rose modestly and of Costa Rica where it stagnated (Table 1). While the average 2002-09 decline in the Gini coefficient was 3.25 points (Figure 3), in countries ruled by left-of-centre (LOC) regimes, such as Argentina (9 Gini points), Venezuela (6.3) and Ecuador (5.6), the drop was much steeper. Overall, between 2002 and 2009/10 inequality fell by less than 3 Gini points in three countries, 3 to 5 points in eight, and more than five in four.

Such decline took place during the 2003-08 years of rapid growth but continued, if at a lower pace, even during the crisis of 2009, a fact that in itself seems to point to a non-cyclical behaviour of the Gini coefficient and to the stability of distributive policies in the region (World Bank 2010). Indeed, in 2009, out of the 13 countries with updated information, the Gini coefficient dropped moderately in five countries, stagnated in five and rose only in two (Table 1), while in 2010, a year of recovery, inequality fell in two-thirds of the nine countries with data (ibid).

1.3.2 Did the inequality decline differ among the high- and low-inequality countries?

The dispersion of income inequality indexes of the 18 countries analysed diminished between the early 1980s and 2002 (Table 3) as the Gini index rose in a few low-inequality countries, such as Uruguay, Argentina, Venezuela and Costa Rica, and fell in some high-inequality ones such as Brazil, possibly due to a convergence in employment structure, urbanization, levels of education and so on. This incipient convergence continued over 2002-09, as the decline was generally faster among the high-inequality nations. Yet, a non-negligible heterogeneity of inequality still affects the region.

Table 3
Mean and dispersion of the Gini coefficient of income inequality, 18 countries

	Early 1980s	1990	2002	2008	2009
Mean	48.86	51.01	53.71	50.87	50.46
Standard deviation	5.71	5.68	3.84	4.47	3.31
Coefficient of variation	0.12	0.12	0.11	0.09	0.07

Note: The Gini for the 1980s and 2009 refers to 13 countries out of 18.
Source: Author's elaboration on Table 1.

1.3.3 An inequality rebound from the 2001-02 crisis, and a reversal of the inequality rise due to liberal policies.

In Argentina, Uruguay, Peru, Paraguay, and Venezuela, a sharp inequality drop took place during the economic recovery of 2002-04, i.e., immediately after the sharp rise experienced during the 2001-02 crisis (Table 1, Figure 3). More generally,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 (Table 1, Figure 3). 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, in most cases, 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) (Table 1). 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 an important reversal of the 'liberalization-globalization inequality' of the 1980s and 1990s (ibid, Figure 3). Indeed, a regional decline by another 0.9 points over 2012-13 would allow to return to the average pre-Washington consensus Gini level (48.9) prevailing in the early 1980s (Figure 3).

1.3.4 Winners and losers from the fall of income inequality

The recent debate emphasizes the role of the middle class[2] as a driver of efficient and equitable reforms (OECD 2011). A sizeable and relatively prosperous middle class generally plays a significant 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. Most definitions of the middle class rely either on Marxian categories or focus on that part of the population with household incomes between 50 and 150 percent of the median. With this definition, the middle class accounts for 56 percent of the population in Uruguay, 50 percent in Mexico and Chile, and 36 percent in Bolivia and Colombia (ibid). This paper uses a simpler definition of the middle class, i.e., the group belonging to the 6th-to-9th decile of the distribution of income. According to this criterion, it appears that the inequality rise of 1990-2002 in several cases also affected the middle class, which in six countries out of 13 suffered the largest drop in its income share (Table 4). It appears also that the recent distributive gains affected it favourably although, on average, less than the poor, and that in Peru, Mexico, Guatemala and Honduras the middle class was the main beneficiary of the recent inequality decline.

1.3.5 Income decline by country characteristics and political regimes

Inequality fell on average under regimes reflecting all types of political orientations, though there is a clear decline hierarchy by type of political regimes. Indeed, Table 5 suggests that the Gini coefficient was reduced by 0.54 points per year under the social-democratic left regimes, by 0.42 points under the radical left regimes (among which commodity exporters dominate), by 0.20 points under the centrist regimes, and by only 0.08 points under thecentre-right regimes.[3]

It has often been argued that the recent decline of inequality in the region was facilitated by the favourable terms of trade for Latin American exports and overall world growth. Yet, Figure 5 suggests that the decline concerned all types of economies and that, if anything, it was slightly faster among the industrial economies, though some of them (such as Argentina) also benefitted from terms of trade gains. Yet, it appears that the commodity exporters did not even fully reverse the increase in inequality suffered during the prior twelve years, while the other two groups more than offset it.

2 The literature posits that a strong middle class ensures political stability and a fair social contract. Gupta (1990) shows empirically that political instability falls with a rise in the income share of the middle 40 per cent relative to that of the top 20 per cent while itfalls for a rise of that of the bottom 40 per cent. In symbols: Political Instability = $a - b$(Mid 40/Top 20) + c(Bottom 40/Top 20) in which ($|b|>c$). This suggests that the middle class wields considerable political influence (due to its higher level of education, urbanization and political organization) and that a redistribution in favour of the poor will succeed only if the middle class also improves its lot.

3 These results confirm those of Birdsall, Lustig and McLeod (2011) according to which the social-democratic left improved its income distribution more rapidly than the redical-left, and that both did better than the centrist and centre-right regimes.

Table 4
Changes in the income shares of the low-income class (deciles 1-5), middle class (deciles 6-9) and upper class (top decile), 1990-2002 and 2002-09 (or most recent year)

		Income deciles					Income deciles				Changes over 1990-2002 versus 2002-09
Country	1990-2002	1-5	6-9	10	Δ Gini	2002-09	1-5	6-9	10	Δ Gini	
Argentina	1990-02	-4.68	+0.94	+3.74	+7.7	2002-10	+5.01	+ 2.81	-7.82	-9.0	Symmetry (+mc)
Peru	1997-02	-0.67	-2.12	+2.79	+2.9	2002-09	+2.99	+4.17	-7.18	-6.5	Symmetry (+pc)
Ecuador	1995-03	+1.82	-1.49	-0.33	-2.3	2003-09	+2.87	+2.65	-5.51	-5.6	Symmetry (+ pc)
Paraguay	1995-02	+0.86	+1.54	-2.40	-1.8	2002-09	+3.20	+2.11	-5.41	-5.9	Continued improv.
Brazil	1990-02	+1.32	+0.07	-1.39	-2.1	2002-09	+2.49	+1.63	-4.12	-4.6	Continued improv.
Panama	1989-02	-0.33	-2.46	+2.79	+1.4	2002-09	+2.52	+0.88	-3.40	-4.3	No symmetry (+pc)
Venezuela	1989-02	-2.97	-0.62	+3.68	+5.0	2002-06	+2.45	+0.45	-2.90	-4.0	Symmetry
El Salvador	1991-02	-0.45	+2.78	-2.33	-0.5	2002-08	+3.76	-0.98	-2.78	-5.6	Symmetry (+ pc)
Chile	1990-03	+0.51	-0.28	+0.23	-0.5	2003-09	+1.44	+0.79	-2.23	-2.7	No symmetry (+ pc)
Bolivia	1997-02	-1.24	-0.66	+1.90	+2.1	2002-07	+1.87	+0.04	-1.91	-2.9	Symmetry
Honduras	1991-02	-2.66	+0.89	+1.78	+5.3	2002-09	-0.82	+2.46	-1.78	-1.4	No symmetry(+ mc)
Mexico	1989-02	+0.42	+0.85	-1.27	-1.1	2002-08	+0.25	+044	-0.68	-0.5	Continued improv.
Guatemala	1990-00	+1.53	- 2.92	+1.40	-4.0	2000-06	-0.47	+1.16	-0.70	-3.6	Symmetry
Dominican Rep.	1996-02	-1.61	-0.74	+2.35	+2.8	2002-09	+0.97	-0.86	-0.05	-1.1	Symmetry
Uruguay	1989-02	-2.15	+0.16	+1.99	+3.0	2002-09	+0.87	-0.85	-0.01	-1.0	Symmetry
Costa Rica	1990-02	-2.82	-3.23	+6.05	+5.8	2002-09	-0.18	-0.53	+0.71	+0.4	Continued losses
Nicaragua	1993-01	+3.63	+1.00	-4.63	-4.1	2001-05	-0.78	-2.05	+2.82	+2.1	Symmetry
Colombia	1996-03	+0.36	+0.84	-1.24	-0.9	2003-07	-1.89	-1.21	+3.11	+3.4	Symmetry
Average		-0.63	-0.30	+0.93			+1.40	+0.73	-2.13		

Notes: In the last column, 'symmetry' means that the inequality declines of the last decade were symmetrical (i.e., opposite) to the rises of the 1990-2002 period; (+pc) and (+pm) indicate a gain in share by the bottom 40% and by the middle 40%. Continued losses or continued gains indicate that the trends recorded over 1990-2002 were continued over 2002-09.

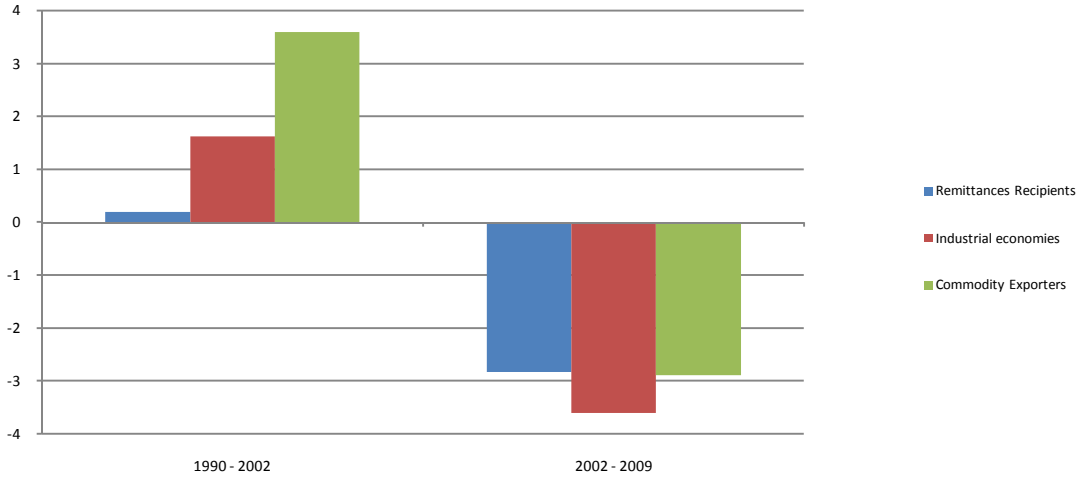
Source: Author's elaboration on CEDLAS data.

Table 5
Inequality trends from the early until the late 2000s (depending on the latest available data) by the ideological profile of governing parties

	Country	Period	Total change inGiniindex 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
	Average		-3.59	-0.42
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
	Average		-3.21	-0.54
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
	Average		-1.79	-0.20
Centre-right & 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
	Average		-1.01	-0.08

Source: Author's compilation on the basis of Roberts (2012) for the coding of the political orientation of governments and ofwww.sedlac.econo.unlp.edu.ar/esp/estadisticas.php for the changes in the Gini coefficients.

Figure 5
Changes in Gini income by economic structure, 1990–2002 and 2002–09



Notes: The industrial economies include Argentina, Brazil, Mexico and Uruguay; commodity exporters include Bolivia, Chile, Colombia, Costa Rica, Ecuador, Peru and Venezuela; the remittances recipients are Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama and Paraguay.

Source: Author's elaboration, based on IDLA.

1.3.6 The uniqueness of Latin America's inequality decline during the last decade

An appreciation of the importance of the recent decline of income inequality in Latin America is offered by a comparison with the trends observed during the same period in other regions. In this regard, Table 6 confirms that during the broad period 1980-2000, the majority of the countries of Latin America experienced an increase in inequality, a trend observed also in all other regions with the exception of MENA. During this period, 73 of the 105 countries with reasonably good data (69 percent) showed an increase in income inequality. During the broad period 2000-10 (which in most cases was characterized by a faster growth than the prior two decades) inequality rises were less common than during the prior period. However, in no region except Latin America was there a clear and generalized drop in income inequality. Also sub-Saharan Africa and South East Asia show during this period a greater number of inequality decreases than inequality increases, but the tendency is less marked and widespread than in Latin America. This bifurcation of trends is difficult to explain on the basis of 'luck' or some supposed advantages of Latin America. Most developing regions are, in fact, as similarly heterogeneous as is Latin America: all of them comprise countries depending on commodity exports and remittances, as well as semi-industrialized nations. And all of them but the OECD benefitted from the high commodity prices, rising remittances, financial exuberance, and rapid world growth of the last decade. Nor does the inequality decline appear to have been driven by growth. Indeed, the fastest growing Asian countries (e.g., China, India and Vietnam) experienced steep rises in inequality,albeit starting from lower levels. Yet, in 2010, China's Gini (47.0) is higher than those of Argentina, Uruguay and Venezuela, and similar to that of Mexico. 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 discussed in Section 3 (such as long-term effects of rising educational achievements, changes in economic and social policies and the consolidation of democracy) are likely to explain in part this encouraging trend.

Table 6
Trend in the Gini coefficient of the distribution of household disposable income per capita, 1980-2000 and 2000-10[a]

		Transitional economies							
	OECD	Europe	Asia	Latin America	MENA	South East Asia	South Asia	SSA	World
		A: 1980s (starting from earlier available year) and 1990s							
Specific period for each region[b]	1980 to 2001	1990 to 1998	1980 to 2000	1980 to 2002	1980 to 2000	1980 to 1995	1980 to 2000	1980 to1995	
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[b]	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: a) All countries included in Table 6 have at least 10 well-spaced observations for the 30 years considered. Each country has been assigned to one of the three above categories on the basis of an analysis of its trend and of the difference between the initial and final Gini coefficients for each of the two subperiods considered, i.e., 1980 to 2000 (top panel) and 2000-10 (bottom panel).

b) The trend analysis shows that the specific periodization in two time-periods (1980-2000 versus 2000-10) varies somewhat from region to region, and that dominant turning points vary from one region to another.

Source: Author's calculations on the basis of SWIIDv3 and IDLA database.

2 Theoretical framework: proximate and underlying causes of the inequality changes observed during the last decade

To identify the *proximate causes* of the recent inequality decline, we make use of a simple framework that takes into account changes in both the factorial and personal distributions of income. If Y_i is the total income of household i and $y_i=Y_i/n_i$ is the average (non-equivalized) household income per capita and n_i the number of its members, Y_i is the sum of the products of household's 'i' endowment of unskilled labour (LF, i.e., the number of unskilled adults), human capital (HC, i.e., the number of adults with at least completed secondary education), physical capital (K), and land and other non-renewable assets (L), all of them multiplied by their respective rates of returns, namely 'uw' (unskilled wage), 'sw' (skilled wage), 'rk' (return on capital, proxied by interest rate), and 'r' (the rent of land and mines). In symbols: $Y_i = uwLF_i + swHK_i + r\,L_i + rk\,K_i$and $y_i = [uwLF_i + swHK_i + r\,L_i + rk\,K_i]/\,n_i$. Assuming that the state

taxes differentially labour income (t_w) and capital income (t_r) and redistributes some of the revenue as household transfers (TR), and that household 'i' receives (usually untaxed) remittances from abroad (RE), the post-tax, post-transfers, and post-remittances income of a person in household 'i' can be expressed as:

(1) $y_i = \{uwLF_i\ (1-t_w) + swHK_i(1-t_w) + r\ L_i\ (1-t_r) + rk\ K_i(1-t_r) + TR_i + RE_i\}/\ n_i$

The distribution of household income per capita is also affected by the dependency rate and the activity rate. Indeed, poor households generally have a larger number of children (and therefore lower LF_i/n_i) and lower activity rates (A_i/LF_i) especially among women. In turn, to account for differences in activity rates, we multiply LF_i by (the activity rate), while assuming all human capital HK is employed or actively seeks employment, as the opportunity cost of its idleness is very high. With this extension, the above formula then becomes:

(2) $y_i = \{uwLF_i\ (A_i/LF_i)\ (1-t_w) + swHK_i(1-t_w) + r\ L_i\ (1-t_r) + rk\ K_i(1-t_r) + TR_i + RE_i\}/\ n_i$

The above identity shows that the net disposable household income per capita can be decomposed in six income shares (sh_j) related to the: (i) 'labour income' (including self-employment income), (ii) 'human capital income'; (iii) 'land and mining rent' (still important in some countries); (iv) 'capital income' (interests, capital gains, profits and others capital incomes); (v) 'net transfer income' (pensions, unemployment subsidies, child allowances, cash transfers and other targeted income subsidies) and (vi) 'remittances income', which is important in at least seven of the 18 countries considered (Table 7).

Thus at time t the Gini coefficient of the distribution of household income per capita can be written as the weighted average of the concentration coefficients of the distribution of these six different types of income C_{it} (all of them ranked by the total household income per capita) multiplied by their relative shares in total income sh_{it}

(3) $G_t = \Sigma sh_{it}\ C_{it}$ i= uw, sw, r, rk, tr, re $\Sigma sh_{it} = 1$

and that a change over time in the aggregate Gini index ($\Delta G = G_{t+1} - G_t$) can be decomposed using the general formula of differentiation over time:

(4) $\Delta G = \Sigma \Delta sh_i C_{it} + \Sigma \Delta C_i sh_{it} + \Sigma \Delta sh_i \Sigma \Delta C_i$

Thus, changes over time in the Gini coefficient of the distribution of household income per capita depend on variations in: (i) the after-tax shares of the different income types (sh_{it}), as the following inequalities $C_{TR} < C_{ruw} < C_{RE} < C_{sw} < C_{rk} < C_r$ hold almost always, and (ii) on changes over time in the concentration coefficients C_{it}.

This general framework focuses on the proximate causes of the distributive changes observed during the last decades and is applicable in specific ways (i.e., by emphasizing different factors) to subgroups of homogeneous Latin American economies (agrarian, commodity exporters, semi-industrialized, remittances dependent and so on). In all of them, possible changes in inequality can thus be traced to:

(i) Changes over time in *income shares* due, for instance, to:

- changes in the relative remuneration of production factors (uw, sw, r, rk). These changes can, for instance,affect the skill premium 'sw/uw' due, for instance, to a supply of skilled workers faster/slower than its demands, a drop/increase in the supply of unskilled workers relative to its demand, an increase in minimum wages, greater unionization, efforts at reducing the informal sector, exchange rate policies or capital inflows shifting production from/to the comparatively unequal non-traded sector to/from the more egalitarian and unskilled labour-intensive traded sector;
- changes in uw/rk (the unskilled wage/capital return ratio) following changes in interest rates and rates of return on investment, or changes in 'uw/r' due to an increase in land/mining rents driven, for instance, by high commodity prices;
- changes in activity rates A_i/LF_i among unskilled workers, especially women, due to fast growth, active labour market policies, or shifts in occupational choices;
- an increase/decline in the volume of transfers received (TR) and taxes (tw, tk) paid by each household due to changes in fiscal policies;
- an increase/drop in the volume of remittances RE_i due to changes in migration;

(ii) Changes over time in the *concentration coefficients* of each income component due to:

- changes in the household distribution of production factors (LF, HK, L, K), resulting, for instance, from land reform, a better distribution of human capital HK (due to more equitable educational policies), or easier/cheaper access to credit by the poor;
- changes in the incidence of social transfers (TR) due to the new design of social security and social assistance;
- changes in the volume or incidence of the taxes paid (tw, tk), following a tax reform;
- changes in activity rates A_i/LF_i among unskilled workers, especially women, due to active labour market programmes, for instance.

Such framework is information-intensive and is not always usable in a decomposition mode (e.g., due to lack of data on some of the above variables) and for regional analyses. But it offers a complete checklist of 'hints' at factors possibly behind the recent inequality changes,[4] the importance of which can be assessed by regression analysis or logical narrative.

The next and more complex step consists in relating the changes in *proximate causes* of inequality to their *underlying causes* (briefly reviewed above when discussing the

4 Of the factors affecting inequality discussed in literature, the only one not included in (2) is inflation. However, during this period inflation generally remained low (4-6 per cent) and stable.

drivers of the proximate causes), as several of them may reflect exogenous shocks or policy interventions, which are the object of the broader debate about development strategies in the region. These underlying causes can be tentatively grouped in five broad groups:[5]

- an improvement in external conditions (terms of trade, exports, remittances, capital flows) which can improve incomes, tax revenue and redistribution via social transfers);
- the indirect effect of the lessening of the balance-of-payments constraints which may trigger a growth acceleration;
- non-policy endogenous factors (the lagged effect of fertility declines leading to a fall in the supply of unskilled labour, dependency ratios and changes in activity rates);
- an improvement in the distribution of educational achievements due to sustained efforts at raising secondary and tertiary enrolments, reducing in this way the skill premium;and
- policy factors (such as redistribution of production endowments, taxation, transfers, minimum wages, labour formalization, macroeconomic and exchange rate policy, and the changes in economic and social policies) part of the 'new Latin American policy model' that has been gradually taking shape during the last decade.

3 Underlying causes of the decline in income inequality over 2002-09

3.1 An improvement in external conditions

It could be argued that the recent inequality gains are explained by favourable international economic conditions. Hereafter we discuss the direct (partial equilibrium) effects of these events while in Section 3.2 we discuss their likely overall (general equilibrium) effects.

3.1.1 Terms of trade gains

During the last decade, the rapid growth of the emerging economies has entailed a significant increase for many Latin American countries in export volumes and the world prices of energy, metals and agricultural commodities (CEPAL 2010). As a result, between the average for the 1990s and 2008, the regional export/GDP ratio rose from 27.6 to 35.7, while the regional terms of trade index rose from 100 in 2000 to 117 in 2008. Despite a decline in 2009, it rose again in 2010 (ibid). However, while the terms of trade improved by 41 percent in South America (excluding the Mercosur), 39 percent in the Mercosur and six percent in Mexico, they fell 17 per cent in Central America, a subregion strongly dependent on energy imports.

5 This classification is not watertight, as several of the causal linkages illustrated below could be placed in more than one of the five groups listed hereafter.

What was the direct impact of these changes on income inequality? A partial equilibrium analysis suggests that, given the high concentration of ownership of land and mines (particularly by foreign TNCs)[6] prevailing in the region, the recent gains in terms of trade generated, *ceteris paribus*, a disequalizing effect on the functional distribution of income. In addition, production in these sectors is very land-, skilled labour-, and capital-intensive, the absorption of unskilled labour is limited[7] and their size distribution of income is generally very unequal. However, if the mining rents accrue to the state (as in Bolivia) or are taxed and then redistributed in a progressive way (as in Argentina), their rise can generate favourable distributional effects. Yet, the empirical evidence suggests a weak relation between terms of trade and tax/GDP and non-tax/GDP ratio in Latin America (Cornia and Martorano 2011). The only relatively strong correlation (r = 0.63) was found for the eight main commodity exporters for the years 2003-07 (ibid). Overall, the re-distribution of commodity rents via the budget does not seem to have been sufficiently general, timely and strong to explain much of the inequality decline observed recently in the region.

3.1.2 Rising migrant remittances

Migrant remittances grew rapidly in Central America, Bolivia, Mexico and Ecuador between the 1990s and 2007-08 (Table 7) to stagnate in 2009-10, while tripling in absolute terms to nearly US$70 billion between 2001 and 2008, to stabilize at around 60 billion in 2009. The theoretical literature suggests that the short- and medium-term effect of remittances tends to be unequalizing, as only middle-class people are able to finance the high costs of (mostly) illegal migration. As a consequence, remittances accrue to middle-income groups, while the migration of skilled workers may raise the skilled/unskilled wage ratio at home. An IMF (2005) analysis suggests also that,on the whole, remittances neither raise the long-term growth of GDP and employment nor reduce long-term inequality, though they diminish the incidence of poverty. However,

Table 7
Trends in the remittances/GDP ratio in selected Latin American countries

	1980-90	1991-2001	2002-06	2007-08	2009
Colombia	1.49	1.14	2.71	2.09	1.82
Peru	0.80	1.04	1.62	1.94	1.85
Mexico	0.96	1.18	2.42	2.55	2.54
Paraguay	—	2.83	4.00	3.78	4.15
Ecuador	0.60	3.25	6.15	6.07	4.37
Bolivia	1.98	0.64	2.95	7.48	6.16
Dominican Republic	4.40	5.95	9.75	8.08	7.44
Guatemala	1.51	2.70	10.40	11.94	10.79
Nicaragua	5.48	3.62	10.79	11.80	12.01
El Salvador	8.85	11.48	16.08	17.71	16.50
Regional average	—	2.20	4.76	5.44	4.91

Source: Based on Martorano and Cornia (2011)and UNCTAD for 2009.

6 A large part of the gains in terms of trade left the region as profit remittances by TNCs engaged in the exploitation of natural resources. Chile and Peru account for over half of theoutflow of profit remittances.

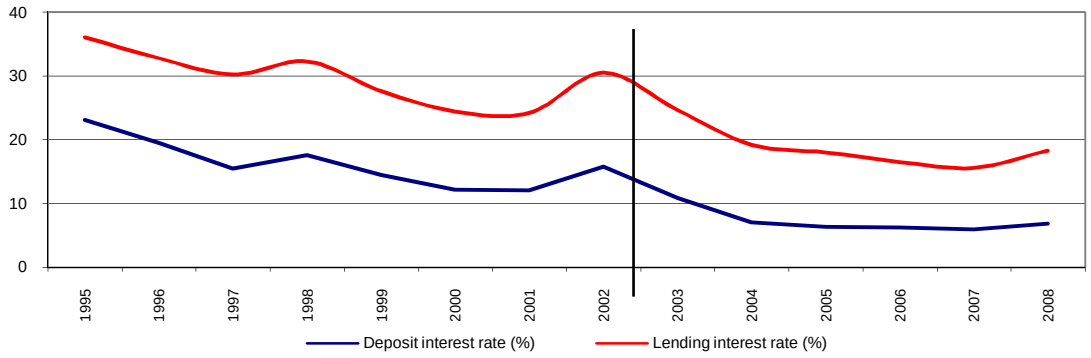
7 For instance, in Argentina, agriculture accounts for a modest8 percent of thetotal labour force.

the empirical literature (Docquier and Rapoport 2003) suggests that migration may be less unequalizing in countries where it is state-sponsored if large migrant networks emerge in countries of destination,or if the remittances-receiving families share them with low-income families. The evidence for the region is mixed. In the case of Mexico, López-Calva and Lustig (2010) suggest that remittances are equalizing and became even more so in the 2000s because they narrowed the rural-urban income gap. In view of all this and of the fact that only seven countries in the region receive sizeable remittances, it seems unlikely they played—with a few exceptions—a central role in reducing income inequality at the regional level.

3.1.3 Increased availability of external finance

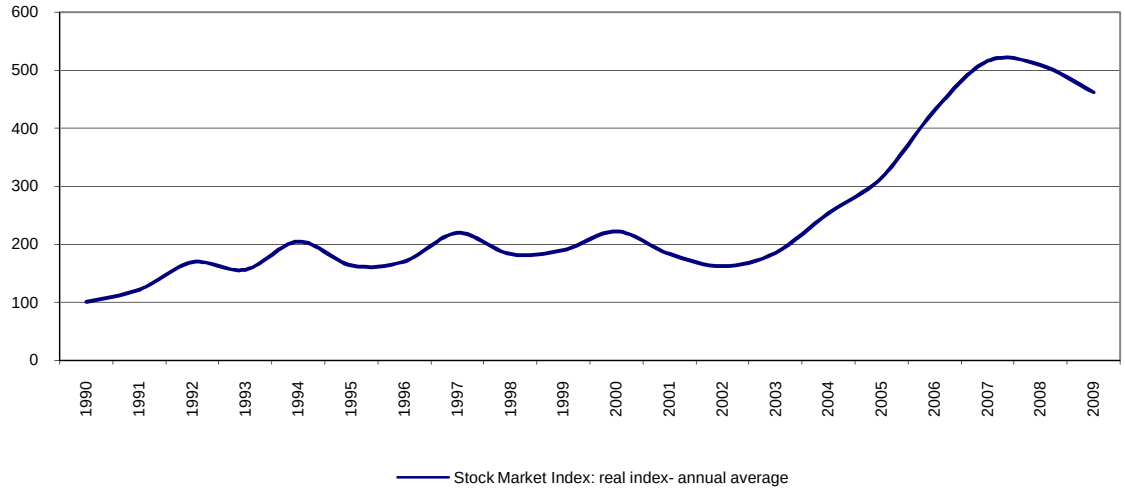
Between 2002 and 2008 (and again in 2010) the region experienced a remarkable inflow of foreign capital at declining interest rates (which in principle favoured firms and households and penalized banks and rentiers) amounting to some 2.4 per cent of the region's GDP (Ocampo 2008). This financial exuberance exerted downward pressure on domestic rates (Figure 6) and, as the inflows mainly consisted of purchases of shares and securities, generated a boom in regional stock markets (Figure 7). In contrast, the FDI stock stagnated at around 22 per cent of the region's GDP, after having risen sharply between 1995 and 2002 following the acquisition of privatized state assets by transnational corporations (TNCs) (UNCTAD 2009).Yet, this increased availability of finance mainly benefitted large, capital- and skills-intensive companies and banks, and did not ease the problems of access to credit for the labour-intensive, small-medium size enterprises (SME) with no access to the formal banking sector, likely worsening in this way income distribution. In addition, the inflows caused an appreciation of the exchange rate in most countries (CEPAL 2011). Indeed, booms in capital inflows (as well as commodity prices and remittances) can cause 'Dutch disease' effects, which, through an appreciation of the real exchange rate, slows down growth in the labour-intensive non-commodity traded sector, with possible negative effects on inequality. The evidence provided in Section 3.5 confirms that in most of the region there was a real appreciation during these years. All in all, the above discussion suggests that the partial equilibrium effects of the improvement in external conditions are unlikely to explain, with rare exceptions, the recent decline of inequality. The general equilibrium effects are discussed in the next section.

Figure 6
Average deposit and lending interest rates in Latin America, 1995-2008



Source: World Development Indicators of the World Bank (2011).

Figure 7
Average real stock market indexin the Latin Americanregion, 1990–2009



Note: The chart is the average of the 18 countries of the region, but does not include Bolivia, the Dominican Republic, Guatemala, Honduras, Nicaragua, Paraguay and Uruguay.

Source: Author's elaboration on data from the Interamerican Development Bank.

3.2 The impact of the rapid growth of 2002-08 and 2010 on income inequality

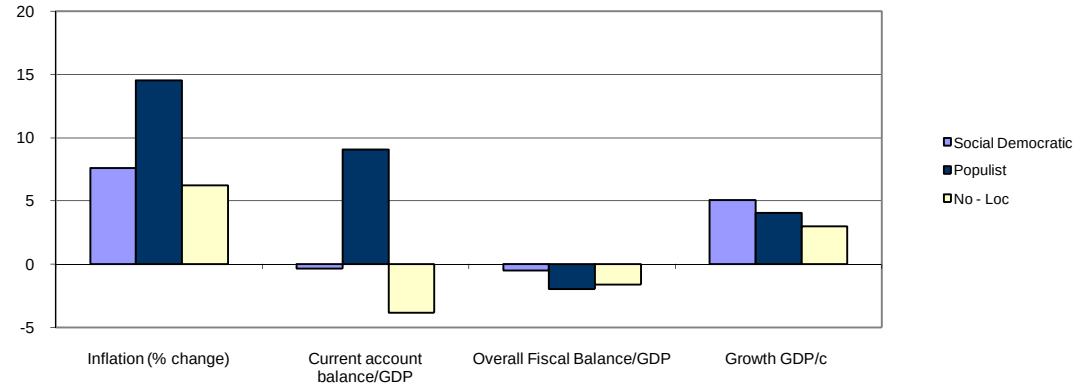
In the absence of a CGE model, the general equilibrium effects of the boom in terms of trade, remittances and capital inflows are difficult to map out precisely. Yet, as suggested by the 'balance of payments constrained growth model' (Thirlwall 2011),[8] terms of trade gains, capital flows and migrant remittances do,*ceteris paribus*, relax the foreign exchange constraint to growth, increase incomes, revenue collection and private consumption and, as a result, raise employment. Indeed, between the average for the 1990s and 2003-08, the average growth rate of GDP per capita rose by about three times in South America and increased by half a point in Central America. It then contracted by 2.9 percent in 2009 but rebounded to 4.2 percent in 2010 (CEPAL 2010). Such growth acceleration was recorded in both left-of-centre (LOC) and non-LOC countries, though performance, except for inflation, was better in the social-democratic or radical-LOC (Figure 8). The evidence also confirms that the joint effect of the recent GDP recovery and changes in macroeconomic and labour policies (discussed in Section 3.5) generated a positive effect on unemployment, activity rates, job informality, social security coverage, average wages and the ratio of informal/formal sector wages (Table 8, see also the evidence on Argentina and Brazil in López-Calva and Lustig 2010). The new jobs created during this period were mainly taken by low-income workers, thus contributing to the decline in wage inequality. Interestingly, while in most cases the labour market improved faster in the LOC than the non-LOC countries, the latter also recorded non-negligible gains.For instance, between 2002-07 unemployment dropped by 5.3 points in the LOC as opposed to a decline of two points and stagnation in average wage in non-LOC (Cornia andMartorano 2011: Table 8.1). Thus, in developing countries with flexible labour markets and a large reserve army, faster GDP

8 In such a model,GDP growth depends on an improvement in the real terms of trade, on the sum of the price elasticity of demand for exports (which rose during the 2000s), a depreciation of the exchange rate (see later), the growth rate of the trade partners, and (inversely) on the its import elasticity.

growth is expected to improve labour absorption and, under certain conditions, the wage rate, with positive distributive effects.[9]

Surprisingly, labour markets were little affected by the 2009 crisis. While unemployment rose in eight of the 11 countries analysed in World Bank (2010), the average increment was only 0.9 while the average activity rate fell negligibly (Table 8). 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. Informality rose modestly (0.3-0.4 points on average) mainly in countries with rising unemployment. Finally, the skilled/unskilled, formal/informal and male/female wage gaps continued to fall, possibly because of the adoption of vigorous labour market policies in several countries (ibid and Table 8).

Figure 8
Average 2003-10(amacroeconomic and growth performance
of social-democratic and populists LOC versus non -LOC regimes.



Note: (aTheperiod considered for fiscal balance is 2003-09.

Source: Author's elaboration on CEPALSTAT for GDP/c growth and fiscal balance; IMF's *World Economic Outlook*(2008) for inflation and current balance/GDP.

Table 8
Labour market trends for Latin America as a whole, 1990-2009

	Activity rate (% of pop. of 15-64 yrs)	Unemploy-ment rate (%)	% Wage earners of total workers	% Formal sector workers	% Workers paying socialsecurity	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: Compilation on different tables in CEPAL (2006 and 2008), IDLA database and SEDLAC (2011).

9 A simple bivariate regression on a panel for 1990-2009 and the 18 countries analysed in this paper finds that,on average, a one percent increase in GDP/c reduces the Gini coefficient by 0.18 percentage points.

3.3 Domestic exogenous changes

3.3.1 A decline in dependency rates

It might be surmised that part of the recent inequality decline was due to the 'demographic gift' experienced by Latin America during the last decade, a condition similar to that experienced during the Asian miracle (Bloom and Williamson 1998). The *ceteris paribus* effects of a decline in dependency rates are a growth acceleration (due to an abundant supply of labour at low wages) and an increase in consumption per capita, both of which have favourable distributive effects. In addition, inequality is affected by the fact that the drop in the number of dependents is more pronounced among low-income countries (Table 9) and households. This hypothesis is supported by the fact that the dependency rate fell during the 2000s in all countries, particularly in the high-fertility countries of Central America (ibid). Yet, dependency rates had fallen also in the 1980s and 1990s, the two decades during which inequality rose. That these changes were only modestly equalizing is confirmed by the case studies on Argentina, Brazil, Peru and Mexico included in López-Calva and Lustig (2010), which suggest that the contribution of this factor to the inequality decline was far less important than that of others.

Table 9
Age dependency ratio for three groups of countries over the period 1980-2009

	1980	1985	1990	1995	2000	2005	2009
Group I	90.34	86.38	81.89	77.55	72.85	67.70	63.13
Group II	83.78	79.10	75.67	71.76	67.32	62.95	59.64
Group III	64.58	63.39	62.01	59.84	57.24	54.30	52.03

Note: Group I: Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama;
Group II: Bolivia, Colombia, Ecuador, Paraguay, Peru, Venezuela;
Group III: Argentina, Brazil, Chile, Uruguay.

Source: World Development Indicators of the World Bank (2011).

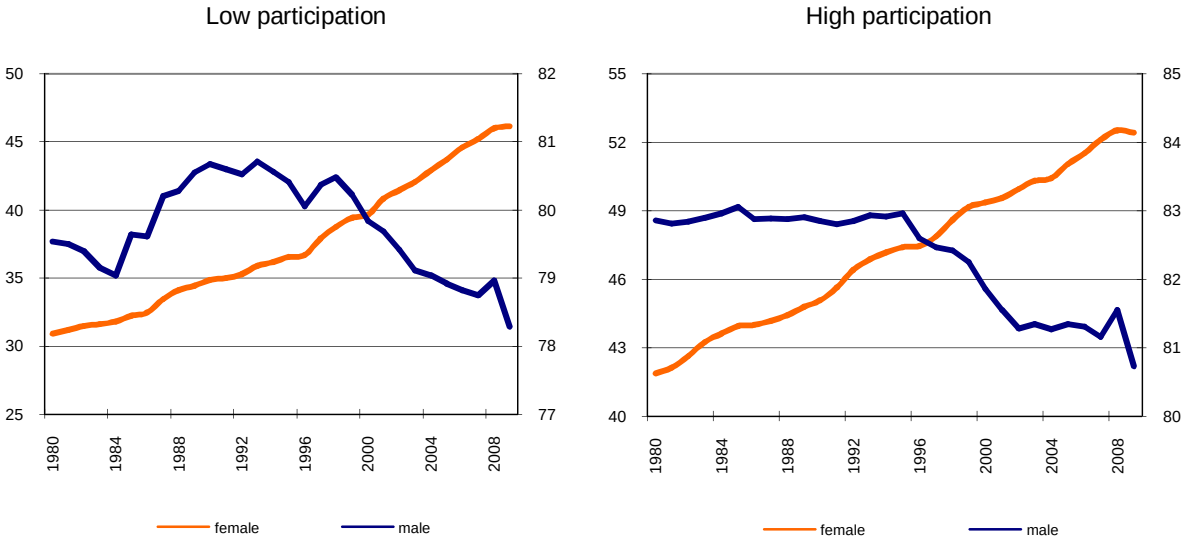
3.3.2 An increase in activity rates

As indicated by Formula (2), an increase in activity rates may affect the distribution of household income per capita, though the size and direction of the impact depend on country circumstances. Generally speaking, inequality is likely to improve if the participation rate of the poor rises faster than that of the rich and to worsen in the opposite case. For instance, Bourguignon, Fournier and Gurgand (2001) find that an increase in female participation in Taiwan over 1979-94 had a modest but clearly dis-equalizing effect. Indeed, with increased autonomy in the spouses' labour supply decisions, the better educated women who entered the labour force had higher earnings than the women already present, and generally belonged to relatively richer households (confirming the assortative matching hypothesis).

Figure 9 shows that the increase in the overall activity rate during the 2000s (Table 8) resulted from a surge of six (left panel) and 2.5 points (right panel) in that of women and a smaller decline/stagnation in that of men, thus suggesting the possibility of a disequalizing impact in those countries where educated women entered the labour force. In this regard, the case studies included in López-Calva and Lustig (2010) suggest that

the increase in activity rates in Argentina, Brazil and Mexico had a very small equalizing effect on household income inequality, while the opposite was true in Peru.

Figure 9
Female (red, left scale) and male (blue, right scale) labour participation rate over 1980–2009
in two groups of countries characterized by high and low participation



Notes: Low participation: Argentina, Chile, Colombia, Costa Rica, Ecuador, Mexico, Nicaragua and Venezuela;
High participation: Brazil, Bolivia, Dominican Rep, El Salvador, Guatemala, Honduras, Panama, Paraguay, Peru and Uruguay.

Source: World Development Indicators of the World Bank (2011).

3.4 An improvement in the distribution of educational achievements

As suggested in Equation (2), another underlying cause of the recent fall in income inequality could be the redistribution of human capital stock (HK) among households due to a rise in enrolment rates recorded since the early 1990s (Gasparini et al. 2009). Table 2 and case studies on Argentina, Brazil, Mexico and Peru confirm that the recent gains in years of schooling and their distribution among workers were accompanied by a widespread drop in the skill-premium in the 2000s and that the latter explains an important part of the recent drop in income inequality.[10]

Figure 4 (with sw/uw on the horizontal axis) and the recent trends in the average years of education and its distribution suggest the operation of two effects: a 'price effect'

10 It is important to note that the Gini coefficient of the distribution of years of education has been falling from at least 1990, i.e., before earnings inequality started to decline. This result depends in part on the properties of the Gini coefficient used to measure workers' educational inequality. Indeed, an increase in enrolments always generates a decline in the Gini. This is not true if the standard deviation is used to measure educational dispersion. As suggested by Londono (1990), when using the latter measure the dispersion of the years of education takes the form of an inverted U which peaks at around 6-7 years. Thomas, Wang and Fan (2000) come to similar results though the peak is reached at 7.5-8 years, as the maximum number of years of education rose due to the enlargement of post-university education. In Latin America, the countries which in the 1990s reached an average of 8 years of education (and which might have thus experienced a decline in its standard deviation) were Argentina, Chile, Panama, Uruguay and Venezuela while those which reached it in the 2000s were Bolivia, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Paraguay and Peru (ibid).

(sw/uw fell in relation to the past) and a 'quantity effect' due to a more equal distribution of education, both of which had an equalizing effect. While the quantity effect is unambiguous, the price effect could, as noted, be explained by: (i) an increase in the supply of skilled workers due to greater educational efforts by governments; (ii) a parallel decline in the supply of unskilled labour due to demographic factors or the rising educational achievements of formerly uneducated workers; (iii) a possible drop/stabilization in the demand for skilled workers and an increase in the demand of unskilled workers due to technological or macroeconomic factors; (iv) institutional changes (i.e., an increase in minimum wages, which in fact rose in much of the region during the 2000s,see Section 3.5.2). Thus, the extent to which the 'price effect' is explained by either of these factors remains, to the best of our knowledge, to be understood fully and is likely to vary from country to country. In the case of Argentina, Gasparini and Cruces (2010) argue that the reduction in the skill premium seems to be associated with several events: the post-2002 commodity boom, which increased total employment; the 2002 peso devaluation, which shifted demand in favour of sectors intensive in low-skilled labour; the increase in the minimum wage; and stronger unionization. Also, a rise in the minimum wage appears to have played a role in Brazil, but this was not the case in Mexico and Peru (Table 11).

3.5 The spread of LOC regimes and new policy approaches

During the last twenty years, Latin America witnessed a return to and consolidation of democracy, which possibly affected income inequality through the introduction of more progressive policies, particularly in the South American countries. As suggested by Robinson (2010), if political power is concentrated in the hands of the élites, the political system tends to adopt disequalizing policies. In contrast, genuine democracy (the quality of which can be measured, for instance, by the Polity2 index), 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 LOC regimes.As documented by different waves of the LatinoBarometro,[11] such a shift was caused to a large extent by growing frustration with the disappointing results of the Washington consensus policies implemented in the 1980s and 1990s. Although they helped to re-establish macroeconomic balance, such policies led to a shrinkage of manufacturing and of the industrial working class, a weakening of the unions, rising unemployment, and a substantial enlargement of the informal sector.[12]The shift towards the LOC and new policy approaches began in 1990 with the election of PatricioAlwyn in Chile. Such a trend continued in one country after another with the election of LOC leaders in the late 1990s and the 2000s. By late 2011, of the 18 Latin American countries analysed in this study, only Colombia, Mexico,

11 CorporaciónLatinobarómetro is a non-profit NGO based in Santiago, Chile. It has carried out polls since 1995 on political topics by surveying 19,000 households from 18 countries (available at: www.latinobarometro.org).

12 An analysis of the impact of the Washington consensus in Latin America (Birdsall, de la Torre and Caicedo2010) describes its factual failure in terms of growth, volatility, poverty reduction and inequality. The paper argues that failure of the Washington consensus-style reform agenda can be alternatively placed oninadequate policy implementation; fundamental flaws in its design and policy sequencing; and theneglect of crucial aspects such as growth volatility, technological innovation, institutional change and inequality.

Chile, Panama and Honduras (where centre-left President Zelaya was ousted by a coup) were run by centre-right regimes while the remaining 13 were ruled by LOC governments.

As noted by Panizza (2005, 2005a) and Lustig (2009), the LOC regimes differ substantially from each other. Some of them can be defined as 'social-democratic', as in is the case of Chile's *PartidoSocialista*, Uruguay's *FrenteAmplio* and Brazil's *Partido dos Trabalhadores* (Panizza 2005). These parties have their roots in organizations of the working class, but have evolved into broad coalitions comprising sectors of the business and middle classes, the urban and rural poor, the unemployed and informal sector workers. They have abandoned any notion of revolutionary break in favour of electoral politics and respect for the institutions of liberal democracy. In contrast, a second group of countries (such as Argentina and Ecuador) developed left-nationalist platforms, while a third (Venezuela, Bolivia, and Nicaragua since 2007) is characterized by a radical-populist approach entailing also the redistribution of assets nationally and internationally. In all of them, matters of social justice and economic development are at the core of their new identity, while retaining at the same time a prudent approach to macroeconomics. In a sense, the LOC policy models resemble 'redistribution before growth' (which possibly applies to the radical-populist group) which sees the redistribution of assets as a necessary step to exit the under-consumption trap afflicting developing countries. In contrast, in all kinds of LOC regimes, measures in the field of taxation, labour market, social expenditure, and transfers have been more far reaching. The main components of the new model are reviewed hereafter:

3.5.1 Macroeconomic policies

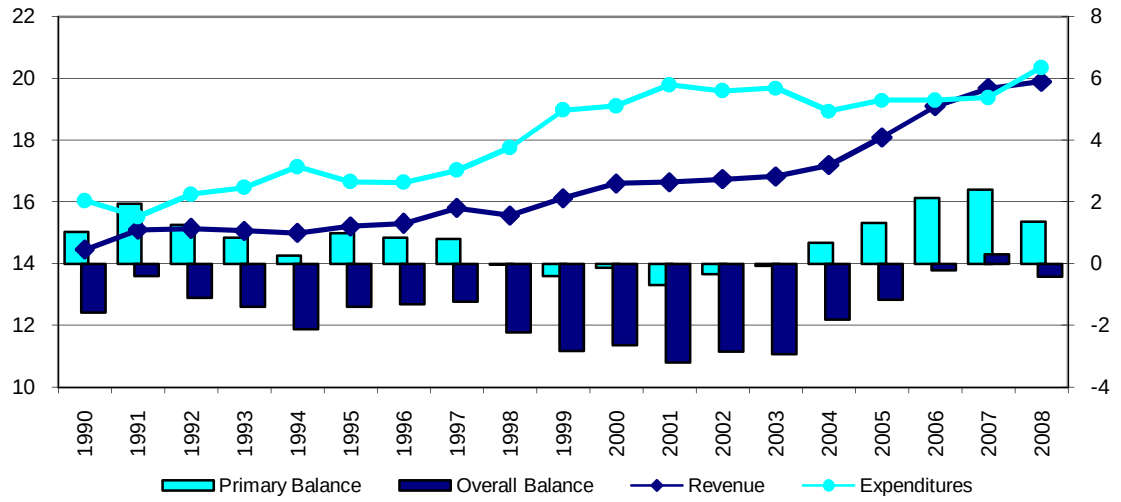
Its key elements are:

A countercyclical or a-cyclical fiscal policy: Traditionally, the Latin American countries adopted procyclical and often unsustainable fiscal policies (Figure 10). This stance has been abandoned during the recent decade. A decline in the budget deficit was targeted in all countries, despite an increase in public expenditure. Fiscal deficits have typically been reduced below one percent of GDP (i.e., much lower than the EU and US) and were in several cases turned into surpluses, while the region as a whole recorded a primary surplus between one and two percent between 2004 and 2008 (ibid). Overall, in the fast growth years of 2006 and 2007, the average central government deficit of the region was in equilibrium, though it rose to 2.9 and 2.4 percent in the difficult years of 2009-10 (CEPAL 2011) in line with theshift towards a countercyclical fiscal management. The strong version of such countercyclical fiscal policy, which requires that a budget surplus is realized during periods of rapid growth so as to finance public deficits during bad years, was followed in Chile, Peru and Argentina. A weak a-cyclical version, consisting of balancing the budget or generating a small surplus in good years (which means that most of the extra revenue collected during upturns was spent) was followed by the majority of the countries as a result of 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 has undergone gradual but deep changes (Cornia, Gomez Sabaini and Martorano 2011). While it over 1990-2002 gradually recovered its 2.7 points decline recorded during the recession of the 1980s,the regional tax/GDP ratio rose by almost 3.5 points between 2003–08 (Figure 10) and much greater increases were

recorded inArgentina (9points) and Brazil (5 points). Despite the recession of 2009 the regional tax/GDP ratio dropped only 0.35 percentage points, and by late 2000s, Brazil, Argentina, Uruguay and Costa Rica reached levels of taxation similar to those of the US and Japan. Lower increases in tax/GDP ratios were recorded, however, in most of Central America, while Mexico experienced a small decline. 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 widening of the taxbase (ibid), tax policy during the 2000s emphasized the role of income tax, further reduced tax exemptions, extended the scope of presumptive taxation, cut regressive excises, and introduced indirect taxes on luxury items. Several countries also introduced a surrogate tax on financial transactions (Cetrangolo and Gomez Sabaini 2006) and/or selective export taxes to tax assets, the distribution of which is highly concentrated and which escape taxation. The LOC countries appear to have performed better in terms of additional revenue raised and progressivity of the tax instruments used (Table 10).

Figure 10
Average regional fiscal indicators (% of GDP), 1990-2008



Source: Cornia, Gomez Sabaini andMartorano (2011).

Table 10
Tax and non-tax revenue/GDP ratio of the central government in 1990, 2002 and 2008, and changes in tax structure in LOC and non-LOC countries.

Tax revenue/GDP			Non-tax revenue/GDP				Changes over 2002-08 (% points of GDP)				
1990	2002	2008	1990	2002	2008	Country group	Trade taxes	Excises +other ind. tax	VAT	Direct taxes	Social security
17.5	19.5	23.3	5.5	5.1	6.1	LOC	+0.31	-0.46	+1.47	+1.92	+0.37
10.0	13.8	15.3	2.5	2.7	3.7	non-LOC	-0.32	-0.83	+1.04	+1.48	+0.03

Source: Author's elaboration on the CEPALSTAT database.

The increase in world commodity prices contributed to raising the tax/GDP ratio in seven countries of the region.[13] Yet, such an increase also began in these countries before the commodity boom and aimed at widening the direct and indirect taxbase.

As a result, while the distribution of income after tax (but before transfers) in 11 Latin American countries remained broadly unchanged in the late 1990s and 2001-02 and worsened in Mexico and Nicaragua (Cetrangolo and Gomez-Sabaini 2006), during the 2000s the progressivity of taxation improved in relation to the 1990s in 11 of the 12 countries with available data (Cornia, Gomez Sabaini and Martorano 2011). In addition, the recent revenue increase affected inequality indirectly as it permitted to fund social transfers and public expenditure on education in a non-inflationary way, and to eliminate the highly disequalizing macro instability of the past.

A countercyclical monetary policy:During periods of the bonanza, monetary authorities attempted to control the expansion in money supply, fall in interest rates and credit expansion triggered by export expansion and large financial inflows 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 the periods of crisis (as in late 2008 and 2009), most LOC and conservative governments lowered interests 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, so as to support the level of output and employment. Monetary policy in Argentina, Peru, Bolivia, and Uruguay aimed also at reducing the extensive (and disequalizing) dollarization of the financial system and at strengthening central bank independence.

Exchangerateregime: With the major exception of Brazil and Venezuela, most LOC and non-LOC countries abandoned the free floats and fixed pegs regimes adopted during the 1980s and 1990s, and opted for a managed exchange rate regime aiming at limiting the appreciation of the real exchange rate. Consistently with this approach, central banks intervened in the currency market, adopted a consistent fiscal and monetary policy, and in a few cases, introduced capital controls. The clearest example of this policy is offered by Argentina where the adoption of a competitive exchange rate shifted labour towards the unskilled labour-intensive traded sector (Frenkel and Rapetti 2008)[14] with a strong equalizing effect (Damill 2004, cited in World Bank 2005).

However, in 2006-07 and again in 2010, this exchange rate policy came under pressure owing to large increases in export prices, capital inflows and remittances. However, without capital controls, the accumulation of reserves, the interventions of central banks

13 Governments developed several fiscal mechanisms for appropriating part of the increase in commodity prices (CEPAL 2007: 31). Argentina introduced export duties on agricultural commodities. In turn, Venezuela, Bolivia and Chile created new taxes on non-renewable resources. As a result, the share of fiscal revenue originating from the resource sector rose in Bolivia, Chile, Colombia and Mexico from of 27.8, 7.6, 9.9 and 29.4 per cent in the 1990s to 34.8, 20, 14.2 and 37.5 in 2006–07, respectively.

14 Such policy requires that thebuild-up of international reserves during upturns is matched by measures to sterilize theirmonetary impact. Sterilization of this type iseasier when there is afiscal surplus.Otherwise it is necessary to sterilize via a mix of traditional open market operations, sales of central bank bonds in the market, or higherreserverequirements. For thisreason, a fiscal surplus is an essential complement to the policy aiming at maintaining a stable and competitive real exchangerate.

in the currency market and sterilization efforts, 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 remains a problem in the region, as 14 countries recorded an extra-regional real appreciation in 2010 (CEPAL 2011), which exceeded 10 percent in five countries. In view of the strong real devaluation of 2001-02, such a trend has only in part eroded the competitiveness of several countries, but such trend cannot be sustained in the future.

Tradeand external indebtedness: The free trade policies adopted during the Washington consensus, 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 newly adopted exchange rate policies in some countries offered some protection to the tradable sector. In contrast, the pattern of international trade changed substantially. While trade within the Free Trade Area of the Americas stalled, intra-regional trade integration developed rapidly, especially in the field of manufacturing, and so did the south-south trade, particularly the exports of primary commodities to Asian countries. Governments (in particular the LOC ones) also 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 and the latter restructured its foreign debt at a 70 percent discount. The foreign reserves of the region also grew from about US$150 to almost 550 billionbetween 2002 and 2009. As a result, Latin America's gross foreign debt declined from 40 percent of the regional GDP in 2002 to 17.4 percent in 2008 and 20.4 in 2009, while the debt net of foreign reserves fell even more. One can surmise that the distributive effects of exports differentiation and reserves accumulation are likely to be favourable, as they reduce vulnerability to macroeconomic shocks.

3.5.2 Labour market, income, and social policies

The key changes concerned:

Labour market policies: Especially the LOC governments explicitly addressed the problems inherited from the prior two decades, i.e., unemployment, job informalization, falling unskilled and minimum wages, diminishing coverage of social security, and the weakening of institutions for wage negotiations and dispute settlements. Argentina enacted income policies consisting of public works, extending the coverage of formal employment, and promoting the re-birth of trade unions. In Uruguay and Brazil the governments reinstated tripartite wage bargaining. Meanwhile average wages grew moderately (Table 8), possibly reflecting the greater concern of policymakers for creating jobs 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 LOC governments and very few non-LOC ones decreed sizeable hikes in minimum wages (Table 11), which reduced the minimum/average wage ratio with equalizing effects on the wage distribution.

The literature confirms that the minimum wage hikes of the last decade produced an equalizing effect (López-Calva and Lustig 2010). More generally, a study on 19 LatinAmerican countries over 1997-2001 (Kristensen and Cunningham 2006) shows that minimum wages raised the pay at the bottom of the distribution and were generallyassociated with a lower dispersion of earnings, as minimum wages lifted earnings both in the formal and informal sectors. This suggests that minimum wage

represents a 'fair reservation wage' below which the supply of unskilled labour starts falling.

Table 11
Trend in the index of real minimum wages (2000=100)(a

	2002	2004	2006	2008	2010
Venezuela(1999) (b	94.5	92.7	113.9	107.2	93.8
Chile (2000-10)	***106.8***	***111.3***	***116.3***	***118.3***	***127.7***
Brazil(2002)	***114.3***	***121.4***	***145.3***	***160.8***	***182.0***
Argentina (2003)	81.4	***129.8***	***193.2***	***253.3***	***321.3***
Panama (2004-09)	105.8	***107.5***	***108.1***	***109.2***	***113.3***
Uruguay (2005)	88.7	77.5	***153.2***	***176.9***	***196.8***
Costa Rica(2006)	99.5	97.6	***99.5***	***99.5***	***105.8***
Bolivia (2006)	116.0	112.0	***111.1***	***117.0***	***119.9***
Honduras (2006-09)	104.6	114.5	127.4	***131.1***	***225.5***(c
Nicaragua (2007)	105.9	113.5	128.5	***141.6***	***174.6***
Ecuador (2007)	112.5	122.2	130.0	***146.7***	***161.5***
Paraguay (2008/9)	102.9	102.4	106.7	101.3	***102.5***
Guatemala (2008)	108.6	117.6	119.6	111.9	***122.0***
El Salvador (2009)	94.6	95.3	90.5	92.9	***100.9***
Peru (2011)	101.0	106.9	112.0	114.5	110.1
Mexico (–)	101.2	99.1	99.0	96.2	95.6
Colombia (–)	101.9	103.8	108.0	106.9	111.6
Dominican Republic (–)	105.1	81.2	89.6	87.7	93.5

Notes: a) Nominal wages deflated by the CPI;b)years of ruling by LOC regimes; c)= 2009.
Source: CEPAL (2011).

Risingsocialexpenditure andredistribution: Public social expenditure started rising already in the early-mid 1990s but accelerated its upward trend in the early 2000s in most of the region (Table 12). Most of the expenditure increase concerned social security and assistance, and education. The rise was nearly universal and of the 18 countries of the region only five experienced a stagnation or decline.[15] There still is a huge intra-regional variationin social expenditure[16]but it appears that the recent rise was proportionately greater in low-income countries. The main drivers of this rise were the increase in tax/GDP ratios mentioned above, the debt cancellation enjoyed by HIPC countries[17] and higher ODA likely due to growing 'social conditionality' for achieving the MDGs.

The rise in public social expenditure likely generated positive redistributive effects. An analysis of public social expenditure by income quintile for 18 countries over 1997-2003 (CEPAL 2007) suggests that: the distribution of all components of social expenditure is less concentrated than that of private incomes; expenditures onprimaryeducation and social assistance are strongly progressive, those on secondary

15 These were Chile, Guatemala, Panama, Paraguay and Peru.

16 In 2005, Cuba, Uruguay, Brazil, Argentina, Bolivia, Costarica and Panama had social expenditure/GDP ratios of 15-20 per cent, but most Central American/Andean countries had ratios below ten.

17 Since 1996-07, Bolivia, Honduras and Nicaragua enjoyed debt cancellations of 5, 6 and 2 per cent of their GDP.

education and healthcare are mildly progressive or proportional (depending in the case of health on the approach to its financing), those on tertiary education are as concentratedasthedistribution of income. In turn, expenditure on social security (pensions, unemployment insurance) is only slightly less concentrated than that of private income. These are average regional data and things vary between the three main country groups in the region (Table 13:Panel B). There are also indications that the incidence of social expenditure became more progressive over time (CEPAL 2005; López-Calva and Lustig 2010). Democratization is thus showing its impact not only on labour policies but also on non-clientelistic redistributive expenditure policies.

Table 12
Average public social expenditure/GDP in LOC versus non-LOC countries

Year	Social public expenditure as percentage of GDP				
	Total	Education	Health	Social security	Housing
1990	9.0	2.8	2.1	3.3	0.7
1996	10.9	3.4	2.4	4.0	1.0
2003	12.8	4.3	2.8	4.6	1.1
2008-9	13.3	4.3	2.9	4.6	1.4
LOC Δ (2008/9–2003)	1.33	0.2	0.38	0.46	0.29
Non LOC Δ (2008/9–2003)	0.48	-0.12	0.06	0.11	0.43

Notes: The data refer to the 18 countries analysed in this study, including Bolivia (on the basis of national data) that has been omitted in similar studies.

Source: Author's elaboration on the basis of the ECLAC database Cepalstat and national data for 2009,

Table 13
Incidence of government expenditure by quintile (18 countries, 1997-2004)
and concentration coefficients of the public expenditure by three country groups

(Panel A) Shares of public social expenditure by sector and income quintile						(Panel B) Concentration coefficients of public social expenditure		
I Quintile	II Quintile	III Quintile	IV Quintile	V Quintile	Expenditure sector	Group 1	Group 2	Group 3
7.4	6.5	6.3	5.9	5.6	Education	-0.067	0.116	-0.138
5.1	4.7	4.2	4.0	3.7	Health	0.074	-0.073	-0.192
2.0	2.8	4.3	6.3	16.5	Socialsecurity	0.504	0.568	0.349
3.3	2.1	1.6	1.3	1.1	Socialassist.	-0.089	-0.154	-0.484
0.8	0.9	1.1	1.4	0.9	Housing	0.206	0.067	-0.026
19.6	17.0	17.5	18.9	27.8	Total	0.143	0.042	0.044

Note: Group 1 includes Bolivia, El Salvador, Guatemala, Honduras, Ecuador, Nicaragua, Paraguay, and Peru;
Group 2 includes: Colombia, Dominican Republic, Mexico, Panama, and Venezuela;
Group 3 includes: Argentina, Brazil, Chile, Costa Rica and Uruguay.

Source: Elaboration on CEPAL (2007).

A key dilemma in this area concerns the expenditure on social security. As shown by Table 13, the latter is only slightly progressive, as it mainly covers the better paid formal sector workers with stable employment. This raises the question of how best can government expand coverage, whether by extending the formal sector or by setting up solidarity-based, non-contributory universal basic benefits (such as minimum pensions) to informal sector workers, their families and uninsured elderly. Both approaches were adopted in recent years,although the latter was more common, as explained hereafter.

Social assistance: Practically all LOC and non-LOC governments introduced progressive social assistance programmes to complement the coverage of social insurance. These new programmes (conditional and non-conditional cash transfers) are funded by the state, with expenditures ranging between 0.2 and 0.8 of GDP (Fiszbein and Schady 2009), cover an important share of the population at risk, and are directed to old and new political constituencies such as the urban and rural poor. In addition, their generosity and coverage increased over time, their design was improved and targeting was fine-tuned. Such programmes include conditional transfers aiming at reducing poverty and child labour and at ensuring that children remain in school, and have access to health services and proper nutrition (as in Brazil's famous *BolsaFamilia*); temporary employment schemes; training of unemployed workers and youth; subsidized formal sector employment for the youth; and the promotion of SME. In addition, several LOC countries (Argentina, Bolivia, Brazil, Chile and Costa Rica) introduced non-contributory social pensions entailing an expenditure of between 0.18 and 1.30 percent of GDP (Barrientos2011). Several studies document the favourable distributional impact of social assistance transfers. An IPEA study (cited in CEPAL 2006) finds that in Brazil social pensions and *BolsaFamíli*a explained one-third of the drop in inequality between 2000 and 2006. Similar conclusions were arrived at by the four case studies in López-Calva and Lustig (2010) who note that these programmes go a long way in redistributing income to the poor.

4 Regression analysis

4.1 Dataset and bilateral correlation coefficients among explanatory variables

We now test whether the hypotheses discussed in Section 3 about the distributive impact of the underlying causes of inequality presented in Model (2) are verified empirically as well as discuss the importance of each of them in reducing inequality during the last decade.[18] Answering these questions required compiling a dataset named Income Distribution in Latin America or IDLA (Martorano and Cornia 2011). IDLA includes annual data for 18 countries, the years 1990-2009 and the variables listed in Annex Table 1. The database includes 360 (18x20) cells for each variable, though missing data reduce the number of data strings with non-zero cells to 343. The dependent variable is the Gini coefficient of the distribution of household disposable income per capita.[19] The explanatory variables belong to seven sets of variables which

18 A decomposition of the overall variability in the Gini coefficient on the panel of 18 countries over this period shows that about three-quarters of it is due to differences across countries (which exhibited different characteristics and adopted different policy models) and one-quarter to changes over time.

19 Of the 343 Gini coefficients of income inequality included in IDLA, 219are from the SEDLAC database (www.depeco.econo.unlp.edu.ar/sedlac/eng/statistics.php), six from WIDER's WIID2c (www.wider.unu.edu/wiid/wiid.htm), one from CEPALSTAT (www.eclac.cl/estadisticas/bases/) and 36 from SWIIDv3. 81 data-points were interpolated by filling gaps of one or two years in timeseries with stable trends. In three cases, interpolation was used to fill gaps of three years, and in one of four years. Finally, 17 cells (for Guatemala, Nicaragua, and Paraguay in the early 1990s) remain blank. In most cases, the data refer to disposable household income per capita, i.e., net of taxation at the source. In a few cases, it was not possible to find out the income concept used in the surveys. This might introduce a bias in the measurement of the dependent variable. However, as there is a strong co-variation between the Gini coefficients for different income concepts (see correspondence analysis done in IDLA [www.wider.unu.edu/research/current-programme/en_GB/Impact-of-Economic-Crisis]) in the LSDV estimation, this bias may affect more the value of the country intercepts than the parameters of the explanatory variables. All data cover the entire country, except for Argentina (where

are introduced in the regression in successive blocks, i.e., (i) external conditions, i.e., international terms of trade, migrant remittances, and FDI (the effect of which on inequality is ambiguous or negative); (ii) the rate of growth of GDP per capita (expected *ex ante* to reduce inequality); (iii) changes in exogenous factors such as the dependency rate (expected to increase inequality, if modestly) and the activity rate (whose impact can go both ways); (iii) the distribution of human capital among workers proxied by the ratio of changes over time in the number of adults with secondary and tertiary education divided by changes over time in the number of those with primary or no education (expected to reduceinequality);(iv) fiscal policies proxied by the ratio of direct to indirect taxes, and public expenditure on social security/GDP (it was impossible to compile timeseries on the more appropriate social assistance/GDP variable) both of which are expected to improve the income distribution; (v) labour market policies proxied by the minimum wage interacted with the share of formal sector workers (which is expected to reduce inequality); (vi) macroeconomic policy, proxied by the real effective exchange rate and its square which are, respectively, expected to reduce and increase inequality for the reasons given in Section 3); (vii) political variables such as the dummies 'social democratic' (equal to one when a country is ruled by a social-democratic government and zero in all other cases) and 'radical-populist' (which takes the value of one in the years during which Venezuela, Bolivia, Nicaragua and Peru in 1990 were ruled by radicalregimes and zero in all other cases) and the Polity2 index which measures the quality of democracy. All three are expected ex-ante to reduce inequality. The first two dummies are meant to capture the 'residual effect' of progressive policies and institutions other than those explicitly included in the model.

The matrix of bilateral correlation coefficients among the 14 explanatory variables included in regression (Annex Table 2) shows thatnone of the 88 bilateral correlation coefficients are sizeable and a possible source of multicollinearity.[20] Only three are greater than 0.5, suggesting that the explanatory variables are fairly independent among each other, and that problems of multicollinearity should be small.Similar results (not shown) are obtained when the variables in the column are lagged one year.

4.2 Estimation procedure and regression results

Given the panel structure of the IDLA database, the estimation procedure must take into account that each country is observed over several periods. Such 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 a vector of the 14 explanatory variables (Annex Table 1), the subscripts i and t refer to the countries and the years of the panel, η_i is a time-invariant country's fixed

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they initially refer to Greater Buenos Aires, then to the 15 main cities, and later on to the 28 main cities), Bolivia (coveragreover 1990-95 was only urban), and Uruguay (urban coverage only until 2005).

20 This means that even when there is a relation between some of the regressors, such a relation is modest as other factors enter into play. For instance, while it is plausible that an improvement in external conditions fosters growth (as argue in Section 3), the latter seems to be influenced by several other factors, thus weakening the bivariate linkage between external conditions and growth.

effect, e_{it} is the idiosyncratic error term, while α and $\beta$are the parameters to be estimated. Given this a suitable panel estimation procedure is the least square dummy variable (LSDV) which includes a dummy for every country. This estimation procedure thus generates an intercept for each of the 18 nations considered, which captures country-specific effects reflecting differences in geography, institutions and unobservables. The seven groups of regressors discussed above have been introduced in a stepwise mode starting with the variables measuring the impact of external conditions and then adding, one by one, the other sets of variables.

The results of LSDV Models 1 to 7 in Table 14 confirm in most cases the conjectures made in Section 3 about the *average regional impact*[21] of the underlying causes of the recent decline in income inequality. In particular: (i) as far as *international economic conditions*, it appears that, except for Model 7, and contrary to what argued in Section 3, the gains in terms of trade of the last decade contributed directly and in a statistical significant (if modest) way to the recent decline in inequality, while migrant remittances were not significant at the regional level in all specifications, and the FDI stock increased inequality strongly and significantly in all specifications; (ii) *GDP growth per capita* has, as expected, a negative sign but is always non-significant in LSDV Models 1-7; (iii) the exogenous yearly *changes in dependency rates and activity rates* are both small and non-significant, as both of them are heavily trended (Table 9), as confirmed also by the national case studies in López-Calva and Lustig (2010); (iv) the reduction in the *inequality of the distribution of educational achievements* (measured by the ratio of the variations of adults with secondary and tertiary education to the yearly variation of those with no or primary education (so as to capture the lagged effect of public efforts in the field of education)[22] is significantly related to income inequality in all specifications, thus confirming prior findings (Gasparini et al. 2009;López-Calvaand Lustig 2010); (v)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 strongly, significantly and negatively associated to income inequality in all models, thus confirming the findings of Cornia, Gomez-Sabaini and Martorano (2011). In turn, the ratio of social security/GDP (which also comprises social assistance and non-contributory pensions, as it was impossible to compile separate timeseries for these two variables) is also significant, though the incidence of social insurance (i.e., two-thirds of social security expenditure) is little progressive; (vi) 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 percent devaluation, for instance, would reduce income inequality by about 1.54 points.[23] As for the labour policies, Table 14 corroborates the predictions of Section 3 about the modest but significant equalizing effect of rises in minimum wages during the last decade; (vii) *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 (e.g., food subsidies and monetary policy) affecting inequality. In line

21 The parameters in Table 14 reflect average regional relationships between variables but, given the strong heterogeneity of the region, might differ from those estimated at country or subregional level (Table 15).

22 The choice of this measure of educational inequality rather than the Gini coefficient or the standard deviation of educational inequality is justified by the fact that its range of variation is greater than that of these other two inequality measures.

23 The interest rate was included in regression but did not result statistically significant.

with the findings of Cornia (2010) but in contrast with those of Birdsall, Lustig and McLeod (2011)(whouseadifferentmodel specification, period of analysis, and classification of radical-populist and social-democratic regimes), the regression results suggest that the radical-populists have a greater residual redistributive effect than the social-democrats. In addition, on top of the governments' political orientation, the variable 'Polity2 index',which measures the quality of democratic institutions, shows a strong and significant effect on inequality during the last decade. Altogether, Table 14 confirms most of the hypotheses about the underlying causes of inequality formalized in Equation (2) and reviewed in Section 3, 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) and of the dependency and activity rates. The parameters of the LSDV are also stable across different specifications, a sign that they are well estimated and sufficiently reliable for computing the relative weight of each variable in explaining the inequality decline observed between 2002 and 2009 (see later).

The LSDV Model 7 was tested also with two alternative estimators. Indeed, on the one side, the Gini coefficient of the distribution of income and GDP/c growth rate can be plausibly considered interdependent, so that their relation can best be represented by a two-equations system in which each of them appears in turn as the dependent variable. Thus, the same relation was tested by means of the 3 stages least squares (3SLS) estimator, in which the first equation is the same of Model 7 while the second has GDP/growth rate as the dependent variable and as independent variables the Gini coefficient of the distribution of disposable income per capita, the investment rate, the terms of trade index, the tax/GDP ratio and the share of workers with a secondary education. The results are presented in Model 8 which shows results similar to those of Model 7 except for the terms of trade variable which becomes non-significant, while the growth rate of GDP/c becomes significant at the 10 per cent level of probability.

Finally, neither Model 7 nor 8 in Table 14 take into consideration the path-dependent and slow moving nature of Gini, as even large year-to-year changes seldom exceed 5 per cent (Table 1). Thus, it is important to test Model 7 by adding to the right-hand side the Gini coefficient lagged one year. In addition, Model 7 has to be probed for the possibility of reverse causation for variables such as the growth rate of GDP/c, workers' educationand the 'social-democratic' and 'radical-populist' dummies, which can be considered as endogenous.To deal with this problem, Model 7 was thus estimated with the dynamic panel-data estimation one-step system GMM procedure. The Wald test indicates that the variables just mentioned are jointly significant. The AR (1) test rejects the null hypothesis of no autocorrelation, while the AR (2) fails to reject it. Finally, the Sargan test rejects the null hypothesis, and thus the instruments pass the test. The results of the GMM estimation procedure in Model 9 show that the lagged Gini variable explains, as expected, 63 per cent of the changes in income inequality during the period considered, while all the other variables retain the same sign and are significant, albeit, as expected, at lower probability levels and with smaller parameters.

Table 14
Regression results using three different estimation procedures for 18 Latin American countries and the years 1990-2009

Dependent variable: Gini coefficient of the distribution of disposable income/c

Variables	Signs expected	LSDV Model1	LSDV Model2	LSDV Model3	LSDV Model 4	LSDV Model 5	LSDV Model 6	LSDV Model 7	3SLS Model 8	GMM Model 9
Terms of trade index	+/-	-0.0176***	-0.0162***	-0.0159***	-0.0176***	-0.0145**	-0.0169**	-0.0007	0.0004	-0.0104***
Remittances/GDP	+/-	-0.0591	-0.0518	-0.0678	-0.0738	-0.0692	-0.0712	-0.0448	-0.044	-0.0431
FDI stock/GDP	+	0.0736***	0.0714***	0.0709***	0.0741***	0.0921***	0.0948***	0.0960***	0.0949***	0.0353***
GDP/c growth rate	-		-0.0383	-0.0382	-0.0309	-0.0444	-0.0400	-0.0447	-0.1364*	-0.0402*
Dependency ratio (growth rate)	-			-0.3834	-0.3738	0.1147	0.0342	-0.3682	-0.2945	-0.2021
Labour force participation (growth rate)	+/-			0.0468	0.0617	-0.0311	0.0439	-0.0089	0.0304	0.0247
People with 3ary and2ary education/ people with primary or no education	-				-2.7241***	-2.4594***	-2.2260***	-1.8689***	-1.7658**	-0.9085*
Direct/indirect taxes	-					-0.6511***	-1.8442***	-2.0464***	-1.8337***	-0.5307*
Public expend. on socialsecurity/GDP	-					-0.1663	-0.3553**	-0.3802***	-0.4009***	-0.1643*
Real effective exchange rate	-						-0.0820**	-0.0844***	-0.0932***	-0.0233*
Real effectiveexchange rate ^ 2	+						0.0003***	0.0003***	0.0004***	0.0001*
Minimum wage index *share of formalworkers	-						-0.0300***	-0.0266***	-0.0201**	-0.0109**
Social-democratic dummy	-							-0.7926**	-0.8570**	-0.3746*
Radical-populist dummy	-							-3.2456***	-2.9162***	-1.6840***
Polity2 index	-							-0.4831***	-0.4545***	-0.1740***
Gini coefficient of disposable income(t-1)	+									0.6375***
Constant	+	53.1416***	53.2416***	53.0263***	50.3315***	44.2807***	54.8681***	58.8193***	59.3686***	23.0956***
Country dummies		yes	Yes	yes	Yes	yes	yes	yes	yes	-
Observations		342	342	342	341	319	292	292	291	288
R-squared		0.784	0.784	0.785	0.79	0.803	0.835	0.866	0.865	

Source: Author's calculations.

4.3 Dealing with the problem of country heterogeneity

As noted, the estimated parameters in Models 1-9 in Table 14 represent 'average regional effects' that do not take into account the various specificities of the various country sub-groups that constitute the region.To solve this problem, Model 9 in Table 14 (reported also for ease of comparison in the first column of Table 15) was estimated by adding to it a few interactions with variables, which are particularly relevant in specific subgroups although not in the region as a whole, so as to identify the differential impact of some variables in specific contexts. To start with, the variables 'terms of trade index' 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 (see notes to Table 15) and zero otherwise. As shown by Model 1 in Table 15 the variable terms of trade is significant and negative but the interaction term of the terms of trade is positive and significant, suggesting that for the subgroup of commodity exporters, inequality rises in line with terms of trade improvements, most likely because of Dutch disease effects (see discussion in 3.1). Second, the introduction of this interaction does not perceptibly alter the sign and size of the other parameters, only the statistical significance of the variable measuring public expenditure on social security. Likewise, and in line with the discussion in 3.1, Model 2 confirms that the remittances on average have a unequalizing effect, but an equalizing one in those nations where such a phenomenon is important and long lasting (such as El Salvador), and such as to generate, for instance, migrant networks, which open the possibility of migrating also to low-income people by reducing migration costs. Also in this case, the statistical significance of the other parameters is altered only for the public expenditure on social security.

Third, the FDI/GDP variable was interacted with the dummy 'Andean group', i.e., a subgroup 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 country group. Fourth, as suggested by political scientists[24] the quality of democracy (proxied so far by the Polity2 index) is influenced not only by the effectiveness of democratic institutions but also by its consolidation (i.e. 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 to free elections (the greater the turnout, the higher the quality of democracy). In Model 4, the Polity2 index was thus replaced with a composite variable[25] combining the Polity2 index (with weight 0.5), the number of years of uninterrupted democratic rule (with weight 0.25) and the turnout rate in political election (with weight 0.25). Also this substitution yields a higher and statistically significant parameter. Finally, Model 5 introduces in the reference model the average import tariff rate with the objective to measure the impact of trade liberalization on inequality. The parameter of such a variable turns out, however, to be statistically non-significant, probably b35ecause while trade liberalization had a strong unequalizing initial impact in the 1980s and part of the 1990s, its effect petered out during the last decade. However, when such a variable is interacted in Model 6 with the 'skill premium' (i.e., the ratio of hourly wages of prime age male workers with tertiary

24 This point was brought to my attention by ThandikaMkandawire of the London School of Economics.

25 I owe this suggestion to Bruno Martorano of the University of Florence.

education versus that of workers with medium education) 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.

Table 15
Alternative specifications of the reference model (Model GMM, Table 14)
to capture specific subregional effects on inequality

	Reference model (GMM model 9, Table 14)	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***	-0.0302***	-0.0110***	-0.0125***	-0.0103***	-0.0105***	-0.0122**
Terms of trade index* commodity exporters dummy		0.0257**					
Remittances/GDP	-0.0431	-0.0611	0.0643	-0.0311	-0.0415	-0.0371	-0.0346
Remittances/GDP * Remittances receivers dummy			-0.2978***				
FDI stock/GDP7	0.0353***	0.0353***	0.0376***	0.0225*	0.0355***	0.0335***	0.0240**
FDI stock/GDP * Andean group dummy				0.0328*			
GDP/c growth rate	-0.0402*	-0.0444**	-0.0406*	-0.0394*	-0.0404*	-0.0402*	-0.0377
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 3ary and2ary education/ people with primary or no education [a]	-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 ^ 2	0.0001*	0.0001**	0.0001*	0.0001**	0.0001*	0.0001*	0.0001**
Minimum wage index *share of formal sectorworkers on the total	-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					-0.3483***		
Import tariff rate (%)						0.0092	-0.1768*
Import tariff rate*skill premium							0.1053**
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 include Bolivia, Chile, Colombia, Ecuador, Peru, Venezuela; the remittances recipients are El Salvador, Guatemala and Nicaragua; the Andean group includes Bolivia, Colombia, Ecuador, Peru and Venezuela.

[a]Both variables are expressed in terms of their yearly variations.

Source: Author's elaborations.

In conclusion, the results of Table 15 suggest that the average regional effects estimated in Table 14 can vary across subgroups of heterogeneous countries, that a more comprehensive specification of the quality of democracy doubles its impact on inequality, and that while the average impact of trade liberalization was non-significant over 1990-2009, it generated an unequalizing effect in those countries where it was accompanied by an increase in the skill premium. Thus, with all the limitations imposed by incomplete data, the variable specifications adopted for some variables, measurement errors and other econometric issues, the results of Tables 14 and 15 provide a fairly consistent picture of the positive, negative or non-significant inequality impact of the variables considered in Equation (2). The remaining question concerns their relative contribution in explaining the inequality decline of the 2000s, an issue to which we turn in the next section.

4.4 Contribution of explanatory variables to the inequality changes 2002-09

Table 16 presents the percentage contribution of each explanatory variable to the changes in income inequality over 1990-2009 on the basis of both the LSDV and GMM models. The variables identified as the most important in the two approaches are similar but their percentage weight changes markedly, as in the GMM model the lagged Gini coefficient absorbs 64 percent of the Gini variation over the period considered (Table 14: Model 9).

For both models, the following results can be identified: (i) in the LSDV model, changes in the explanatory variables explain about 64 percent of the variation in inequality over 2002-09, while in the GMM this drops to 35 percent, as such estimator includes the Gini coefficient lagged one year which, by construction, explains a large share of the inequality variation. Thus, the analytical approach proposed in this paper seems to explain an important share of the variations of inequality during the last decade; (ii) the changes in *external economic conditions* (terms of trade, remittances, and FDI) appear to have played a limited average effect on inequality over the period considered, although as shown in Model 1 in Table 15 they appear to have been relevant for subgroups of countries. In addition, better external conditions relaxed the foreign constraint to growth; (iii) the same applies to the changes in *activity rates* but not to the changes in the *dependency rates*, which appear to have had an unexpected unequalizing impact; (iv) the *growth of GDP/c* played a more limited role than expected in the recent inequality decline; (v) the *REER* contributed, on average, to a moderate increase in inequality over 2002-09 due to its appreciation during the period considered; (vii) in both the GMM and LSDV models the comparatively bigger role was played by changes in *policy variables*, i.e., social expenditure/GDP, the reduction of educational inequality due to a rise in secondary enrolments that began already in the 1990s and accelerated during the last decade, changes in minimum wages, the increase in public expenditure/GDP, and the direct/indirect tax ratio. However, the overall weight of these policy variables changes considerably between the LSDV model (about 56 percent) and the GMM model (about 22 percent) for the reasons given above. Their ranking is, in contrast, fairly similar; (viii) changes in the *quality of democracy* were on average unequalizing, as such variable evolved in the aggregate negatively during the 2000s, due to the downgrading of Venezuela in the late 2000s; (ix) as for the *political dummies*, the radical-populist dummy consistently shows a greater equalizing impact than the social-democratic dummy, though in this case also their weight doubles when moving from the LSDV to the GMM model.

Table 16
Decomposition of the percentage contribution of the explanatory variables to the changes of Gini coefficient of disposable income per capita, 2002-09

		GMM (Model 9, Table 14)			LSDV (Model 7, Table 14)		
			Contribution			Contribution	
	Δ (2002–09)	Variables parameter	Absolute	Percentage	Variable parameter	Absolute	Percentage
Terms of trade index	15.8875	-0.0104	-0.1652	5.0853	-0.0007	-0.0111	0.3423
Remittances/GDP	1.0338	-0.0431	-0.0446	1.3714	-0.0448	-0.0463	1.4255
FDI stock/ GDP	1.0809	0.0353	0.0382	-1.1743	0.0960	0.1038	-3.1935
GDP/c growth rate	2.9900	-0.0402	-0.1202	3.6993	-0.0447	-0.1337	4.1134
Dependency rate (growth rate)	-0.9000	-0.2021	0.1819	-5.5980	-0.3682	0.3314	-10.1988
Activity rate (growth rate)	0.1900	0.0247	0.0047	-0.1444	-0.0089	-0.0017	0.0520
People with 3ary & 2ary education/ people with primary or no education (a	0.0136	-0.9085	-0.0123	0.3789	-1.8689	-0.0253	0.7794
Direct/Indirect Taxes	0.1778	-0.5307	-0.0944	2.9041	-2.0464	-0.3638	11.1982
Public expenditure on social security/GDP(a	1.9406	-0.1643	-0.3188	9.8129	-0.3802	-0.7378	22.7077
REER	-6.3389	-0.0233	0.1477	-4.5456	-0.0844	0.5350	-16.4657
REER ^ 2	-1448.38	0.0001	-0.1448	4.4577	0.0003	-0.4345	13.3730
Minimum wage index * % of formal sector employment	28.0714	-0.0109	-0.3060	9.4171	-0.0266	-0.7467	22.9811
Dummy social-democratic regime	0.2778	-0.3746	-0.1041	3.2025	-0.7926	-0.2202	6.7760
Dummy radical–populist regime	0.1667	-1.6840	-0.2807	8.6380	-3.2456	-0.5409	16.6482
Polity2 index	-0.4444	-0.1740	0.0773	-2.3798	-0.4831	0.2147	-6.6075
Residual			-2.1079	64.8751		-1.1719	36.0687
Gini coefficient	-3.2492						

Note: (a for this variable the difference is over 2002-2008 as too few datapoints were available for 2009.

Source: Authors' elaboration.

The results of the regression analysis and of the analysis of the decomposition of the effects of the regressors on income inequality must be taken with a pinch of salt as they would vary somewhat if alternative models in Tables 14 or 15 were used for the decomposition. Indeed, the regression coefficients may be biased due to measurement errors in some variables, omitted variables (as suggested by the unexplained residuals) and reverse causation for variables other than those which were explicitly considered in the GMM estimates presented. Yet, the consistency of practically all parameters' sign and, to a lesser degree, size obtained with three different estimators (LSDV, 3SLS, GMM), as well as the broad coincidence of the ranking (if not of the weight) of the importance of the regressors in explaining the inequality changes, as well as the results of microeconomic decompositions cited in the text provide support to the conclusions about the ranking (if not the precise weight) of the variables which explain the recent decline in income inequality in the region.

5 Conclusions

This paper has argued thatin recent yearscountries ofdifferent political orientations—with very few exceptions—often enjoyed sizeable drops of income inequality that benefitted both the poor and, in many cases, also the middle class. Such a decline has no parallel in other developed or developing regions, including those which(as Latin America) benefitted from terms of trade gains, growing remittances and capital inflows, and faster growth than in earlier decades. Despite the recent decline, the inequality level of most of Latin American countries remains extremely high, and calls for renewed policy efforts at lowering it in the years ahead. Nevertheless, the continued decline in inequality in half of the region during the 2009 crisis and in two-thirds of the countries with data in 2010 suggests that the new inequality trend is likely to stick. Indeed, continuation of the 2002-10 pace of inequality decline for another 2-3 years would bring the region back to the inequality levels of the early 1980s, wiping out the rises recorded during the liberal decades of the 1980s and 1990s. More structural reforms will then be required—at least in the poorest part of the region—to deal with the deep-seated structural inequality that has affected the region since the beginning of the last century (Figure 1).

The drivers of the recent inequality decline have obviously differed among the country groups, but a few common factors stick out: first, on average, the improvements in external conditions played a perceptible but not a general or decisive direct role in reducing inequality, although it did relax the external constraint to growth and, through that, raised incomes, employment and revenue collection. Second, the endogenous changes in dependency and activity rates that have been underway already for three decades, contributed in a minimal way to the recent improvements in the distribution of income per capita, though they likely affected the supply of unskilled workers and, through this, the skill premium. Third, the reversal of the skill premium appears to have played a central role in improving the distribution of income, although it is not entirely clear whether this is due to the massive increase in secondary enrolments recorded since 1990 and to its acceleration during the last decade, a drop in the supply of unskilled labour and a fall in the demand for skilled labour, or institutional factors such as the return to collective bargaining and higher minimum wages. While this point requires further analysis, it is obvious that steady and equitable rise of investments in education generated large and favourable distributional effects over the medium term. Fourth, in much of the region, fiscal and labour market policy appears to have influenced the recent inequality trend. In turn, the recent shifts in exchange rate policy contributed only modestly or not at all to the recent inequality decline due to a constant pressure towards a real appreciation, though the regression results show that a higher real exchange rate could generate considerable distributive gains.

How can one explain the shift towards more progressive labour and fiscal policies during the last decade? After the gradual return to democracy in the 1980s and 1990s, the 2000s recorded a remarkable shift in political preferences towards progressive regimes which, thanks also to favourable external conditions, introduced reforms broadly inspired by a ‘prudent redistribution with growth’ paradigm committed to reducing the inequality inherited from the colonial past and exacerbated by the liberal policies of the 1980s and 1990s. With the exception of radical Venezuela, Bolivia and Nicaragua (since 2007), the new policy model that has taken shape in the region did not introduce radical changes in the distribution of assets. Rather, in both radical and social-

democratic countries the reforms emphasized orthodox objectives such as macro-economic stability, fiscal prudence, and the preservation of free trade and capital flows. Yet, in a clear departure from the 1990s, such orthodox objectives particularly in South America were pursued in ways different from the past, i.e., by relying on managed exchange rates, neutral or countercyclical fiscal and monetary policy, rapid accumulation of reserves, and an active role of the state in the field of labour and transfer policies. In addition, both the progressive and, to a lesser extent, moderate centre-right governments raised the tax/GDP ratio (a trend facilitated but not fully explained, neither in its timing nor in its extent and spread, by gains in terms of trade gains) as well as public spending on education, conditional cash transfers, and other kinds of social transfers. Micro and macro evidence shows that higher public and private spending reduced inequality in education and contributed to a decline of the skill premium. Redistribution was also pursued via macro policies favouring the labour-intensive traded sector as well as through changes in labour market policies and institutions. Also in this case, the changes introduced were far from radical, yet helped reduce unemployment, and raise labour participation and the share of workers covered by formal contracts. Most of all, new institutional capacity was created in all these areas, a major factor in facing future external shocks and for continuing progressive social policies.

As noted, these changes were more marked in South America while progress in Central America has at times been minimal. In addition, the Latin American governments still face formidable hurdles in deepening these reforms. First, the trend towards rising taxation and social expenditure needs to continue in most of the region with the objective of building a lean welfare state that avoids the high costs of the western model, but aims at universal coverage over the long term. Second, an intensification of the new policy model might face political opposition, as shown by eventsin Bolivia, Honduras and Argentina, for instance, where interest groups have nearly stalled attempts at redistribution. And finally, the inherent structural biases of the Latin American economy—such as the lack of an explicit industrial policy, low savings and the related dependence on foreign capitals, continued pressures towards a real appreciation and commodity dependence—threaten the possibility of shifting to an equitable and sustainable long-term growth path. Without changes in these areas, it is unlikely that the region will be able to tackle its structural inequality by diversifying the economy into new labour- and skills-intensive sectors.

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Annex Table 1
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 sourcesfor 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 (% of total population aged 15-64+)	Percentage variation	WDI
Human capital distribution among workers	People with 3ary & 2ary education/ people with primary or no education	Share on population aged 15 yrs 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, avaialb
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.

Annex Table 2
Bilateral correlation coefficients between dependent and independent variables

	Gini	Terms of trade index	Remittances/GDP	FDI stock (%GDP)	GDP/c growth rate	Dependency rate (growth rate)	Labour force participation (growth rate)	Share of workers with secondary education	Direct / Indirect Taxes	Public expenditure on social security (%GDP)	REER	REER ^ 2	Minimum wage index * % of formal sector employment	Dummy social democratic regime	Dummy radical - populist regime	Polity2
Gini	1.0000															
Terms of trade index	0.1345	1.0000														
Remittances/GDP	0.0684	-0.1149	1.0000													
FDI stock (%GDP)	0.0229	0.0967	0.1220	1.0000												
GDP/c growth rate	-0.1313	0.1956	-0.0208	-0.0826	1.0000											
Dependency rate (growth rate)	-0.1241	0.1424	-0.3104	-0.1246	0.1527	1.0000										
Labour force participation (growth rate)	-0.0332	0.0302	-0.1402	-0.0104	-0.0284	0.0297	1.0000									
Share of workers withsecondary education	-0.1165	-0.0267	-0.0424	0.0431	0.1527	0.0920	0.0037	1.0000								
Direct / indirect taxes	-0.0514	-0.0717	-0.1380	-0.2911	-0.0030	-0.1212	0.0949	0.0814	1.0000							
Public expenditure on social security (%GDP)	-0.2454	0.1175	-0.4618	0.1099	0.0802	0.3239	0.0672	0.0506	-0.1782	1.0000						
REER	-0.3292	-0.0747	-0.1832	-0.0187	0.1060	0.1302	0.0575	0.0568	0.2219	0.2401	1.0000					
REER ^ 2	-0.3082	-0.0818	-0.1810	-0.0115	0.0900	0.1217	0.0657	0.0493	0.2059	0.2510	0.9807	1.0000				
Minimum wage index * % of formal sector empl.	-0.3689	-0.0001	-0.2082	-0.0740	0.1466	0.2064	0.0887	0.1391	0.1754	0.4886	0.5287	0.5603	1.0000			
Dummy social democratic regime	-0.1263	0.0322	-0.2131	-0.0044	0.1086	-0.0308	0.0784	0.0372	0.0743	0.3587	0.1645	0.2152	0.5279	1.0000		
Dummy radical - populist regime	-0.1775	0.2546	-0.0749	0.1238	-0.0815	0.0059	0.0041	0.0526	0.0213	-0.0895	0.0685	0.0417	-0.0938	-0.1165	1.0000	
Polity2	-0.2978	0.0815	-0.1894	-0.0083	0.1052	0.1481	0.0371	0.0805	-0.0952	0.3640	0.0339	0.0262	0.1644	0.2753	-0.0783	1.0000

Source: Authors' elaboration.