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Redistribution without structural change in Ecuador: Rising and falling income inequality in the 1990s and 2000s

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Working Paper No. 2012/12

Redistribution without Structural Change in Ecuador

Rising and Falling Income Inequality
in the 1990s and 2000s

Juan Ponce,¹ and Rob Vos²

February 2012

Abstract

This study examines the rise and fall in income inequality in Ecuador over the past two decades. Falling income equality during the 2000s partly coincides with the rise to power of a ‘new leftist’ government, but the trend was already set early in the decade. The recent trend is mainly associated with a recovery from the country’s deep crisis of the late 1990s. The new leftist regime’s social transfer policies helped reduce inequality further, but the continuation of Ecuador’s primary export-based growth model and the lack of structural economic change do not augur for a more structural decline in inequality.

Keywords: education, welfare, poverty, Ecuador

JEL classification: I240, I310, I390

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1 Introduction

As elsewhere in the region, Ecuador experienced notable increases in income inequality during the 1990s, which by and large were undone during the 2000s. Active social transfer policies by successive governments played a role in reducing inequality in the second decade, but the rise and fall in inequality seem to have been associated for most part with swings in macroeconomic conditions.

The 1990s were characterized by Washington consensus-type reforms. Trade and financial sectors were liberalized from around 1990 and high inflation of the late 1980s was controlled through a combination of heterodox and orthodox macroeconomic stabilization policies in the early 1990s. The liberalization policies strengthened export growth, especially of more capital-intensive activities (oil, manufacturing, traditional export agriculture), though some of the effect was counteracted by the stabilization policies which cut inflation, caused the exchange rate to appreciate and allowed real (urban) wages to increase. On balance, there was a mild increase in inequality during the first half of the decade with the Gini coefficient of per capita (urban) household income increasing from 0.45 to 0.47 between 1990 and 1996. The adjustment policies and market reforms failed to induce strong employment growth in the modern sector. The jobs that were created in the formal sector mainly benefited skilled workers. The slack in the labour market was absorbed in traditional agricultural and informal urban sectors. This drove up the wage gap between modern and informal sector workers as well as between skilled and unskilled workers. Lower inflation and aggregate real wage increases dampened these unequalizing forces somewhat.

The influences mitigating inequality disappeared in the second half of the 1990s when the impact of the macroeconomic stabilization policies faded, trade liberalization pushed further for primary export-led growth and the political situation became very unstable. A series of external shocks, including heavy floods caused by the El Niño phenomenon and falling oil prices, put the economy into a tailspin leading towards a full-blown banking and economic crisis in 1999. The economic downturn, accelerating inflation, sharply falling real wages along with accelerated exchange rate depreciation, pushed more and more workers into unemployment and, in particular, into underemployment in informal sectors, pushing up the Gini coefficient to 0.59 in 2001. Amidst the crisis, large numbers of Ecuadorians started to leave the country, migrating to Europe and the United States in search for better opportunities and many more would follow in subsequent years.

The 2000s started with a hasted decision to dollarize the economy amidst major political turmoil. In the first year as an officially dollarized economy (2000), Ecuador witnessed high inflation (peaking at an annual rate of 100 per cent), in large part because of the way the currency change was implemented.¹ Real incomes and wealth declined steeply for most Ecuadorians, which further pushed up inequality as low-income groups were affected the most. The ensuing real exchange rate appreciation and a rebound in international oil and other commodity prices, however, helped stage an economic

¹ Including by setting the conversion rate for sucres to dollars much higher than necessary and because an initial shortage of small change (dollar coins) pushing up prices for many basic products (by rounding to one dollar). See Vos (2000).

recovery in subsequent years. Increased government revenue supported a recovery of government spending. As a result, employment levels and real wages rebounded, for unskilled workers included. The shift towards greater informality in the labour market continued, however. This shift by itself contributed to higher labour income inequality, but was more than offset by overall employment growth and a fall in the wage gap between skilled and unskilled workers. The recovery in real education spending during the 1990s (see Vos et al. 2003) started paying off in the next decade with more skilled workers entering the labour market and this trend was sustained with cash transfer programmes introduced at the end of the 1990s which induced higher school retention rates. At the same time, demand for unskilled workers in urban informal services sectors and traditional agriculture outpaced that for other workers.

These factors explain much of the fall in per capita household income inequality in the 2000s. The lack of dynamic structural change in the economy, however, does not augur for sustained reductions in labour income inequality. Continued increases in the supply of skilled workers may push further in that direction, but this effect may also not be lasting either lacking a drive towards diversification into more skill-intensive activities. This became evident in the second half of the 2000s. The fact that household income inequality continued to decline (though only slightly), was mainly on account of public transfers and, to a lesser extent, worker remittances. While already in existence from the late 1990s, the cash transfer programme, which mainly benefits poor households, was enhanced substantially under the 'new leftist' government of Rafael Correa along with other social spending. At the same time, worker remittances increased substantially during the 2000s. Initially, they mainly benefited higher-income groups, but became less regressive and even slightly progressive towards the end of the decade. The Gini coefficient for nation-wide inequality in per capita household incomes dropped from 0.60 to 0.55 between 2001 and 2005 and further to 0.51 in 2010. Urban income inequality dropped from 0.59 in 2001 to 0.52 in 2005 and further to 0.49 by 2010, back to the degree of inequality observed in the early 1990s. Rural income inequality dropped from 0.54 to 0.45 during the 2000s.

In sum, the drop in income inequality during the 2000s was mainly on account of the economic rebound following the deep crisis of the late 1990s. Most structural factors continue pushing towards greater inequality, especially the continued 'informalization' of the economy. Some elements of the programme for an inclusive and solidary economy (*economía popular y solidaria*) of the 'new leftist' government of Rafael Correa (2007-present), the micro credit programme in particular, may have pushed in the same direction. Other elements, especially the enhanced social spending and quality improvements in social services, may help counteract income inequality over the medium run, but only if more dynamic structural change helps to absorb a more educated labour force. Also the decline in rural inequality does not appear to be associated with much visible structural change in agriculture or in asset distribution. Rather, early in the decade it seems to have come on account of the recovery from the natural disaster and the financial crisis and, in the second half of the 2000s, smallholder farmers seem to have gained from improved agricultural terms of trade and rising domestic food demand as well as the enhancement of the cash transfer programme.

The remainder of this paper provides the empirical underpinnings of this interpretation of the trends in income distribution in Ecuador over the past two decades. The analysis for the 1990s concentrates mainly on the trends in urban income inequality, as

comparable income and employment data for rural areas started to be collected on an annual basis only from 2000.² Section 2 provides a description of the main trends, while section 3 tries to disentangle the main determinants of the rise and fall in income inequality. Section 4 concludes.

2 Basic trends in income inequality in Ecuador

2.1 Rising and falling income inequality

(Urban) income inequality increased notably during the 1990s. The Gini coefficient for per capita household income increased by 10 basis points from 0.45 in 1990 to 0.55 in 2000 (Figure 1 and AnnexTable A.1). During the 2000s, this trend was reversed and the Gini coefficient dropped to 0.49 in 2010. Income inequality also declined visibly in rural areas during the 2000s. At the national level, the Gini coefficient peaked at 0.60 in 2001, but dropped to 0.51 in 2010. In rural areas, the income inequality measure dropped from 0.54 to 0.45 during the same period. The nation-wide measure of inequality is systematically higher than those for urban and rural household incomes, because of the high income disparity between those living in cities and those in the countryside.

As explained in the introduction, drastic liberalization policies introduced in a context of macroeconomic instability induced a notable increase in urban income inequality between 1990 and 1993. Subsequently, during 1993-96, macroeconomic stabilization policies, which brought down inflation and allowed for significant real wage increases, were a main factor in pushing down urban inequality and poverty.³ Urban income inequality surged again at the end of the decade. As discussed in greater detail in the next section, the financial crisis of 1999 caused a drop in GDP per capita of 7.6 per cent, a steep rise in unemployment and underemployment rates and a sharp fall in real wages, contributing to the sharp rise in inequality. Rural households were less affected by these factors, as some of the negative impact of the financial crisis was mitigated by the recovery from the damages to harvests and infrastructure caused by the floods associated with the El Niño phenomenon of 1997-98. Rural income inequality was flat in 2000-01.

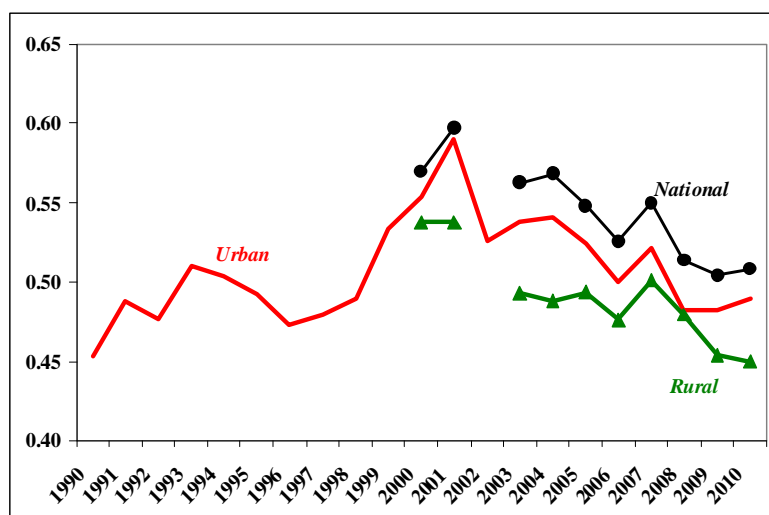
Most of the drop in income inequality came about between 2000 and 2006 and was associated with—as explained in the next section—by a recovery in real wages and employment, especially in urban areas.

Income distribution shifts during the 1990s and 2000s were top-heavy. As shown in Table 1 (panel A), only the top 10 per cent saw its income share increase during the 1990s, while all other deciles of the urban income distribution saw their income shares decline. Between 1990 and 2000, the richest ten per cent increased its share by 10 points, from 35 to 45 per cent. Exactly the opposite happened in the 2000s, with only the richest ten per cent seeing its share decline (from 45 to 38 per cent) and all other deciles gaining. A similar trend is observed for the income distribution among rural households during the 2000s (Table 1, panel B).

² Annex A1 for a description of the household survey data used for this study.

³ See Vos and de Jong (2003).

Figure 1
Inequality in per capita household incomes, national, urban and rural, 1990-2010
(Gini coefficient)



Source: Annex Table A1.

Table 1
Per capita household income distribution by deciles (income shares in per cent)

Panel A: Urban households, 1990-2010							
	1990	1993	1996	2000	2003	2006	2010
Poorest decile	1.8	1.4	1.5	1.2	1.0	1.4	1.5
2	3.7	3.3	2.8	2.1	2.2	2.9	2.7
3	3.9	3.3	4.6	3.1	3.1	3.2	3.7
4	4.9	4.1	5.3	4.3	4.3	4.5	4.7
5	6.2	6.7	5.6	4.8	5.3	6.1	5.8
6	8.0	8.2	6.8	6.2	6.3	6.6	7.2
7	9.1	6.0	9.2	7.9	8.4	8.9	9.2
8	11.6	10.7	11.8	10.3	11.0	11.2	11.2
9	15.8	16.3	16.3	14.9	16.3	16.3	16.4
Richest decile	35.0	40.0	36.2	45.2	42.1	38.7	37.8

Panel B: Rural households, 2000-10				
	2000	2003	2006	2010
Poorest decile	1.2	1.1	1.3	1.4
2	2.4	2.5	2.7	3.1
3	3.0	3.7	4.2	4.1
4	4.2	4.9	4.6	5.3
5	5.4	6.0	6.1	6.6
6	6.7	7.5	7.7	7.8
7	8.5	9.3	9.2	9.6
8	10.9	11.8	11.9	12.0
9	15.0	15.6	15.7	16.1
Richest decile	42.8	37.8	36.4	33.9

Source: Based on INEC(Employment and Unemployment Surveys)(various years).

2.2 Trends in labour and property income inequality

Trends in labour and property income inequality by and large follow the trends of the overall household income distribution (see Figures 2a-b and Annex Table A2).⁴ The Gini for labour incomes increased from 0.44 to 0.55 between 1990 and 2000 and decreased from 0.55 to 0.47 in the next decade. Most of the reduction occurred in the first half of the decade. The Gini for property incomes increased by 15 points in the 1990s, going from 0.52 to 0.67, subsequently only to fall by 17 points in the 2000s. At the national level, the Gini for labour incomes dropped in tandem with that for urban areas: from 0.55 in 2000 to 0.48 in 2010, in part, as the reduction in the rural labour income inequality was much less pronounced with the Gini falling from 0.47 to 0.43.

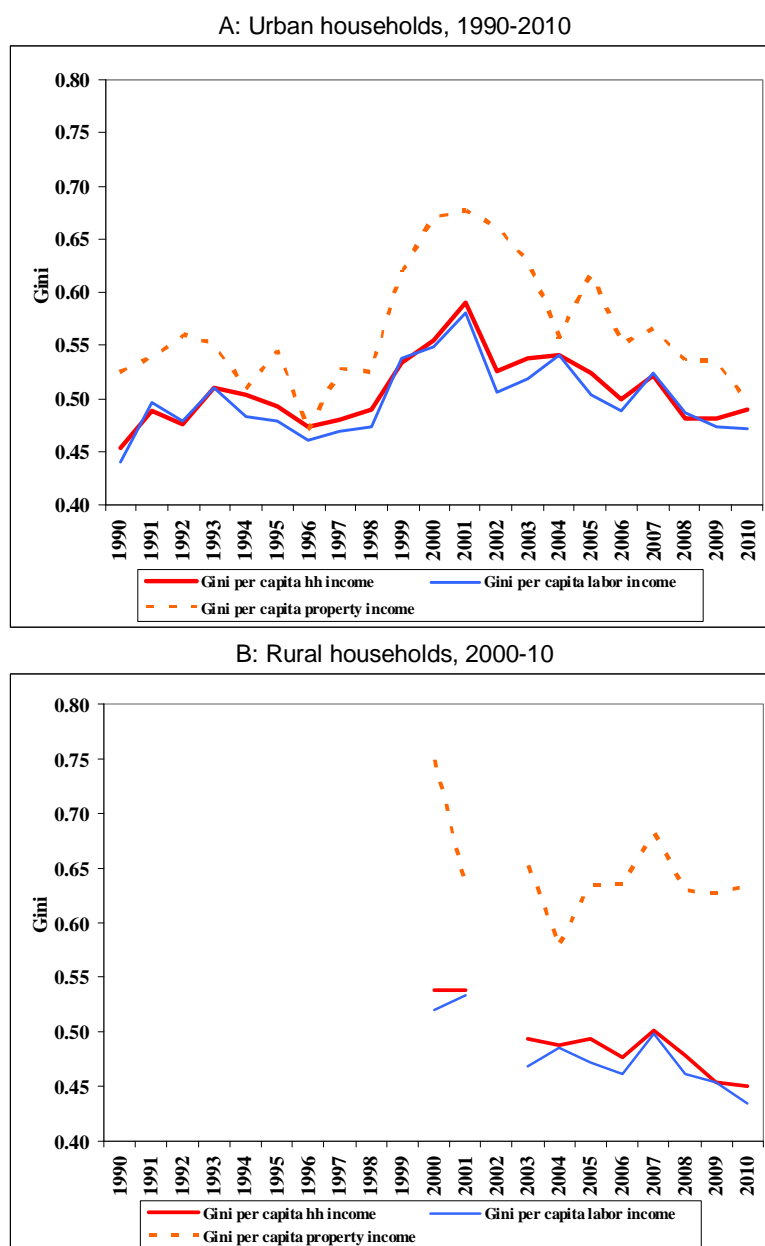
The Gini for property incomes declined from 0.75 to 0.63 in rural areas, while at the national level the degree of property income inequality fell from 0.65 to 0.54 between 2000 and 2010, and from 0.75 to 0.63 in the rural area.

Studying these trends more closely by looking at the decile distribution, we find that distributional shifts in labour and property incomes mimic by and large those of total per capita household incomes, although the shifts are less top-heavy in the case of labour income inequality (Table A2). Between 1990 and 2000, the share of the poorest deciles in total urban labour income decreased. Only the top 20 per cent of the distribution saw its share increase, going from 46 per cent in 1990 to 56 per cent in 2000, while the bottom quintile's share fell saw its share fall from 6 to 3 per cent in the same period. Also in the case of the distribution of labour income, the brunt of the deterioration occurred in the second half of the decade. The pattern reversed almost back to square one during the 2000s, except for the fact that the richest quintile did not lose all it had gained during the 1990s, retaining a 51 per cent share of total labour income. Most of the reversal happened in the first half of the decade.

With respect to personal property and other rental income, the bottom 90 per cent of the income distribution witnessed their shares declining sharply in the second half of the 1990s, while the top 10 saw its share increase from 36 to 57 per cent (Annex Table A4). The amount of financial wealth destruction that took place because of the banking crisis, might have suggested otherwise, but likely the rich were relatively unscathed as they already held most of their wealth in dollars. As in the case of other income sources, inequality in urban property incomes declined again with the dollarization and economic recovery during the 2000s. The sharp reduction in inequality in rural property incomes is less easy to explain. The property income share of the richest 10 per cent of rural households dropped from 78 per cent in 2000 to 51 per cent in 2010. This decline took place mostly during the first half of the 2000s before some new land redistribution schemes and credit programmes for smallholder farmers were introduced by the new leftist government. While those programmes may well have contributed to a reduction in inequality, they do not seem key to the explanation of the observed trends.

⁴ In all cases in which the information is presented aggregated by deciles, it is important to note that this grouping corresponds to household per capita income.

Figure 2
Trends in income inequality by income source (Gini coefficient)



Source: Annex Table A2.

2.3 Distribution of cash transfers and worker remittances

During the 1990s, private and public transfers were small relative to household incomes in Ecuador and thus likely did not have a major impact on income distribution. This changed at the end of the 1990s when a public cash transfer programme was introduced and worker remittances from abroad gained prominence following massive outmigration of Ecuadorians in the years following the 1999 economic crisis.

Ecuador's first cash transfer programme, the *Bono Solidario*, was not tied to any behavioural condition for recipient households (such as sending children to school or attending health centres), but was introduced to compensate poor households for the

elimination of a subsidy on cooking gas.⁵ The *Bono Solidario* was transformed later into a conditional cash transfer programme, the *Bono de Desarrollo Humano* (BDH). The household survey data for the 2000s capture the distributive effects of the cash transfer programme showing these have been progressive and the redistributive effect has strengthened towards the end of the decade (Table 2). By 2010, in the urban area, the three poorest deciles received 54 per cent of the total benefits of the programme, while the three richest deciles received only 4.6 per cent. The degree of progressivity of the programme is much less in rural areas as a consequence in part of more widespread rural poverty and in part because of poorer targeting of the programme's benefits. The three poorest deciles in rural areas received 30.6 per cent of the benefits, while the top 30 per cent received no less than 25.6 per cent in 2010.

The amount of the monetary transfer per beneficiary was increased significantly in the second half of the 2000s: to US\$35 per month in 2010, up from US\$15 in 2006. The benefit is an important income source for the poorest deciles (see Table 3). On average, the BDH contributes about US\$3 and US\$6 to average per capita income of the poorest decile in urban and rural areas, respectively. This is equivalent to around 10 and 50 per cent of the per capita income of those households.

Table 2
Distribution of Ecuador's cash transfer programme by deciles, %

Decile	2000		2003		2006		2010	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Poorest decile	18.0	11.8	21.0	12.6	22.4	12.3	19.8	8.6
2	16.3	10.5	18.4	10.6	20.4	10.7	16.9	8.8
3	14.0	9.0	14.0	11.5	15.6	11.6	17.6	13.2
4	14.9	11.1	13.8	12.1	12.9	11.1	14.2	10.1
5	11.6	11.0	12.3	11.2	11.5	11.5	10.9	11.9
6	6.9	10.3	7.3	11.2	7.8	11.7	9.4	10.9
7	7.0	9.8	6.5	10.3	5.2	10.5	6.5	11.1
8	4.9	7.7	4.1	8.9	2.7	9.2	3.0	10.1
9	4.6	9.7	2.1	7.5	0.8	7.3	1.3	9.2
Richest decile	1.8	8.9	0.5	4.2	0.7	4.1	0.3	6.2

Source: Based on INEC(Employment and Unemployment Survey) (various years).

Table 3
Average per capita monthly income per decile, US\$ per month

	Urban area		Rural area	
	With BDH	Without BDH	With BDH	Without BDH
Poorest decile	30.1	26.8	13.2	7.8
2	54.5	51.7	28.0	22.5
3	73.3	70.3	38.3	29.8
4	93.9	91.5	48.4	42.0
5	116.0	114.1	59.7	52.2
6	143.2	141.6	72.4	65.4
7	178.3	177.2	88.1	81.1
8	233.3	232.7	109.7	103.3
9	330.7	330.5	146.7	140.9
Richest decile	759.3	759.2	313.1	309.1

Source: Based on INEC(Employment and Unemployment Survey)(2010).

⁵ See Vos, Leon and Brborich (2001).

The static impact of the cash transfers on per capita household income distribution can be measured by comparing the Gini coefficient for per capita income with and without the BDH. In the urban case, in 2010, the Gini for per capita after-transfer income was 0.504, compared with 0.512 when excluding the transfer. The Gini for the after-transfer rural income distribution was 0.45, compared with 0.49 for the before-transfer distribution.

Worker remittances became another important income source during the 2000s. In some countries, remittances have been found to help reduce income inequality, In Ecuador's case, however, the opposite seems to be true. Olivie, Ponce and Onofa (2008), for instance, conclude that remittances have tended to increase income inequality based on counterfactual CGE model analysis and microsimulations using data from the 2006 *Encuesta de Condiciones de Vida* (Living Standard Measurement Survey).

A more descriptive analysis of the distribution of remittances among Ecuadorian households indicates that richest households receive the larger share by far. Among urban households, the distribution is roughly similar, but slightly more regressive, than that of total per capita income during the first part of the decade, but turned less regressive and even slightly progressive in the second half (as can be seen from a comparison of Table 1 above and Table 4 below).

Table 4
Distribution of worker remittances from abroad by decile, %
(Shares of total remittance incomes by income deciles of total per capita income distribution)

Decile	2000		2003		2006		2010	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Poorest decile	1.4	0.9	0.2	0.1	0.9	0.3	1.0	0.3
2	2.3	0.9	0.8	0.4	2.2	0.9	1.6	2.3
3	3.0	1.9	2.3	1.3	2.9	1.1	2.9	3.0
4	3.4	2.1	3.0	1.7	3.2	1.1	4.5	3.1
5	2.4	2.6	3.6	3.0	4.5	3.8	9.3	6.4
6	5.4	4.0	5.6	4.5	5.3	6.1	8.9	9.6
7	6.3	7.6	10.1	6.6	10.2	7.0	9.9	7.9
8	13.3	8.4	13.7	11.7	13.8	8.2	8.9	16.5
9	17.5	15.6	18.9	19.9	19.3	19.7	14.3	22.6
Richest decile	45.1	56.1	41.8	50.7	37.6	51.8	38.7	28.0

Source: Based on INEC (Employment and Unemployment Surveys)(2000-10).

2.4 Decomposition of income inequality by source

To assess the contribution of the four key income sources to overall inequality, we applied the Gini decomposition methodology developed by Lerman and Yitzhaki (1985) and by Stark, Taylor, and Yitzhaki (1986). The Gini coefficient for total income, with k different sources of income, can be expressed as:

$$G = \sum_{k=1}^K S_k G_k R_k$$

where S_k is the participation of income source k in the total income; G_k is the Gini coefficient for income source k ; and R_k is the correlation between income source k and total income.

Thus, the contribution of income source k to the overall level of income inequality will depend on three factors: the importance of the income source with respect to total income, or rather, its participation in total income; the level of inequality of this income source; and the correlation of the respective income source with total income.

Based on this decomposition, the effect can be estimated of a marginal change (π) of any of the different income sources with respect to overall inequality (keeping the other sources of income constant), according to the following expression:

$$\frac{\partial G}{\partial \pi} = S_k(G_k R_k - G)$$

Or, alternatively:

$$\frac{\partial G / \partial \pi}{G} = \frac{S_k G_k R_k}{G} - S_k$$

This means that the percentage change in overall inequality, resulting from a marginal percentage change in income source k , is equal to the initial participation of income source k in overall income inequality minus the initial participation of income source k .

The results presented in Table 5 show that labour income represented, on average, 91 per cent of total urban household income during the 1990s. The negative marginal effects confirm that the distribution of labour income was less unequal than that of property income and other rents, so that increases in the labour share which took place during parts of the 1990s helped reduce overall inequality.

In 1990, a one per cent increase in labour income for urban households was associated with a 3 per cent reduction in the Gini coefficient: thus implying an elasticity of 3.0. This elasticity dropped significantly thereafter: to 1.2 in 2000 and 1.4 in 2006 (and the impact was insignificant in 2003 and 2010). Increases in average property income relative to other income sources always contributed to greater overall urban income inequality during the 1990s and 2000s.

Rising worker remittances tended to cause greater urban income inequality (with an elasticity of 0.3) during the part of the 2000s but, as indicated, became first slightly progressive towards the end of the decade (with an elasticity of -0.2). The cash transfer programme, in contrast, helped reduce urban income inequality with an elasticity of around -1 during the first half of the decade, but the inequality reducing impact became larger towards the end of the decade with the significant increase in the benefits under the new leftist government.

Shifts in the share of labour income (including both wages and self-employed incomes) would have either a small, variable impact on overall rural income inequality or are be statistically insignificant. Increases in land rents and rural profits, in contrast, did push up rural income inequality significantly, as shown in panel B of Table 5. Increases in remittances also seem to have pushed up rural income inequality, as visible from

positive marginal effects, though the effect was no longer statistically significant at the end of the decade. The cash transfer programme, in contrast, seems to have had a strong inequality-reducing effect with the marginal effect becoming stronger during the period of the new leftist regime.

Table 5
Decomposition of the Gini coefficient and the marginal effect of each source of income.

	Labour income		Property income		Remittances		Cash transfers	
	Share	Marginal effect	Share	Marginal effect	Share	Marginal effect	Share	Marginal effect
A: Urban, 1990-2010								
1990	0.8998	-0.0355 (0.0025)	0.1002	0.0355 (0.0025)				
1993	0.9133	-0.0101 (0.002)	0.0867	0.0101 (0.0020)				
1996	0.9038	-0.0056 (0.0012)	0.0962	0.0056 (0.0012)				
2000	0.8852	-0.0123 (0.0066)	0.0617	0.0145 (0.0021)	0.0453	0.0086 (0.0067)	0.0077	-0.0108 (0.0002)
2003	0.8784	-0.0038 (0.0024)	0.0773	0.0095 (0.0021)	0.0372	0.0057 (0.0012)	0.0071	-0.0114 (0.0002)
2006	0.8679	-0.0146 (0.0019)	0.0953	0.0189 (0.0018)	0.0325	0.0031 (0.0011)	0.0043	-0.0075 (0.0001)
2010	0.8559	0.0036 (0.0034)	0.1167	0.0153 (0.0031)	0.0173	-0.0023 (0.0006)	0.0101	-0.0166 (0.0002)
B: Rural, 2000-10								
2000	0.8993	-0.0042 (0.004)	0.0292	0.0154 (0.002)	0.0465	0.0151 (0.003)	0.025	-0.0263 (0.0007)
2003	0.8865	0.0075 (0.003)	0.0464	0.0136 (0.002)	0.0386	0.0139 (0.001)	0.0286	-0.035 (0.0005)
2006	0.895	0.0021 (0.0034)	0.0452	0.0118 (0.0028)	0.0366	0.0145 (0.0016)	0.0232	-0.0284 (0.0006)
2010	0.8385	0.0388 (0.009)	0.0746	0.0352 (0.008)	0.0171	0.0007 (0.0006)	0.0698	-0.0747 (0.0009)

Note: Standard errors in parentheses, calculated using the bootstrap method. The shaded coefficients are not statistically significant.

Source: Based on INEC (Employment and Unemployment Survey) (various years)

3 Possible explanations for the income distribution shifts

This section examines a number of factors which could explain the observed rise and fall in income inequality during, respectively, the 1990s and 2000s. We focus on the following factors that could explain the observed distributional shifts: the pattern of economic growth, demographic changes and related changes in the labour supply, shifts

in the structure of employment, changes in wages gaps across workers (in particular those between skilled and unskilled workers and between formal and informal sector workers). In this light we reassess the role of public and private transfers in explaining the overall trends.

Other factors, which may have an influence such tax incidence, were not considered due to a lack of consistent information about such factors in the household surveys used for the empirical analysis in this study.

3.1 Economic growth patterns

The empirical literature tends to find a strong influence of the business cycle on poverty and inequality trends.⁶ Although there does not seem to be any systematic pattern in the distribution shifts taking place during economic upturns, it is mostly found that during downturns and crises income inequality and poverty tend to increase. The pattern of growth is possibly even more important than the short- to medium-term cycles in determining distributional shifts. The opening and liberalization of economies in Latin America have often been found to have increased income inequality, especially by pushing up wage differentials between skilled and unskilled workers, but the impact on poverty seems to have been more ambiguous.⁷ Income distribution shifts observed in Ecuador during the 1990s and 2000s seem to fit the broader Latin American pattern with some caveats.

Figure 3 shows annual GDP growth during the 1990s and 2000s. The horizontal lines show the average growth for each subperiod. The average annual GDP growth rate for the entire period was 3.2 per cent. Between 1990 and 1996, the economy grew at an annual average rate of 2.1 per cent, slowing to less than 1 per cent in the second half of the decade. This period of low economic growth is associated with an increase in income inequality.

Ecuador's pattern of growth historically has been mostly export-led, heavily reliant on primary commodities. This growth model has remained by and large unchanged. Buoyancy of exports ultimately determined the space for domestic income and demand growth. During the early 1970s, the country became a net oil exporter allowing, along with heavy external borrowing, for significant public sector and urban real wage growth. This helped push up domestic demand as the main factor of growth and, despite continued prevalence of import substituting industrialization policies, import demand increased significantly and the economy suffered strong Dutch disease symptoms (Vos 1989). After the debt crisis of the 1980s, elements of the import substitution model were dismantled, but adjustment policies failed to reduce dependence on primary exports. Rather, domestic demand and urban wages were compressed, substantially eroding purchasing power of the urban middle class that had surged in the 1970s. Import compression and volatile primary export revenue determined most of the business cycle

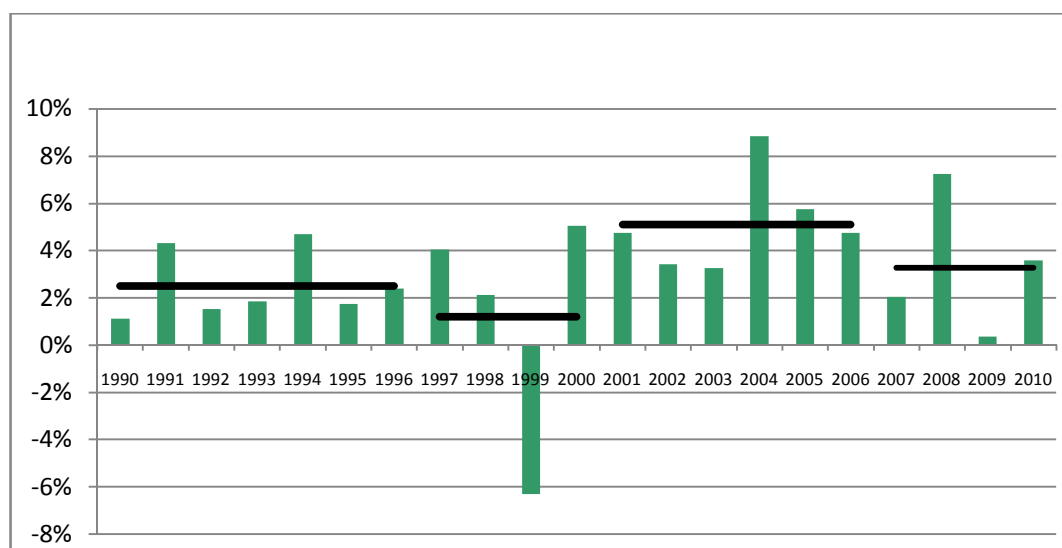
⁶ For Latin America see, for example, Beccaria et al. (1992), Altimir (1995), Lustig (1995), Morley (1995), Psacharopoulos et al. (1995), Ravallion and Chen (1997), de Janvry and Sadoulet (1999), and López-Calva and Lustig (2009).

⁷ See, among many others, Vos, Paes de Barros and Taylor (2002), Vos et al. (2006), and Cornia (2011).

during this period. (See the findings of the ‘Keynesian’ decomposition of economic growth as presented in Table 6.) Many basic price subsidies that had mainly benefited the urban middle classes were reduced as part of fiscal adjustment policies. Although weakening the ‘urban bias’ in policy incentives, it did not do much to support the rural population, as already weak agrarian reform policies were mostly abandoned and international agricultural commodity market conditions also kept domestic food prices low.

The trade and financial sector liberalization measures, introduced around 1990, reinforced the export-led growth pattern. Export volume expanded despite substantial appreciation of the real exchange rate. The strengthening of the *sucre* emerged as a result of heterodox type adjustment policies conducted during the first half of the 1990s, which used the nominal exchange rate as an anchor to control put inflation that had accelerated to near 100 per cent per year at the end of the 1980s. The renewed export

Figure 3
Annual rate of GDP growth
(In % based on original GDP data in constant 2000 US\$)



Source: Based on Central Bank of Ecuador (BCE) data.

Table 6
Decomposition of the driving forces of economic growth, 1970-2010, %

	Change in GDP	Domestic demand	Import substitution	Exports
1970-81	100	100.6	-19.2	18.6
1982-89	100	-2.2	59.1	43.1
1990-99	100	1.8	2.8	95.3
2000-06	100	79.2	-10.2	31.0
2007-10	100	114.0	-11.7	-2.4

Note: Following Chenery’s (1979) methodology, economic growth is decomposed in terms of the contributions from domestic demand growth, the import substitution effect, and the effect on demand for exports, using the following equation:

$$(X_t - X_{t-i}) = \alpha_{t-i}(D_t - D_{t-i}) + (\alpha_t - \alpha_{t-i})S_t + \alpha_{t-i}(E_t - E_{t-i})$$

where: X = GDP; D = domestic demand ($= X + M - E$); S = total supply ($= X + M$); E = total exports of goods and services (f.o.b); M = total imports of goods and services (c.i.f); α = GDP as proportion of total supply (X/S); t = final period; and $t-i$ = initial period.

Source: Central Bank of Ecuador, national accounts data.

drive came mainly from growth of traditional exports, particularly oil and shrimps. Both these commodities tend to be rather insensitive to real exchange rate adjustments. Shrimp cultivation takes place on large-scale, on-shore farms, requiring long-term investments and, hence, is slow to respond to price changes. Further, during much of the 1990s, the government allowed oil production to increase in response to relatively low international crude prices. Oil exports also increased with the construction of a new oil pipeline. The little export diversification that took place during this period was in the form of foreign investment-supported cut flower production and growth of intra-regional trade in the context of the Andean Pact (Vos 2002).

From stabilization to crisis in the 1990s

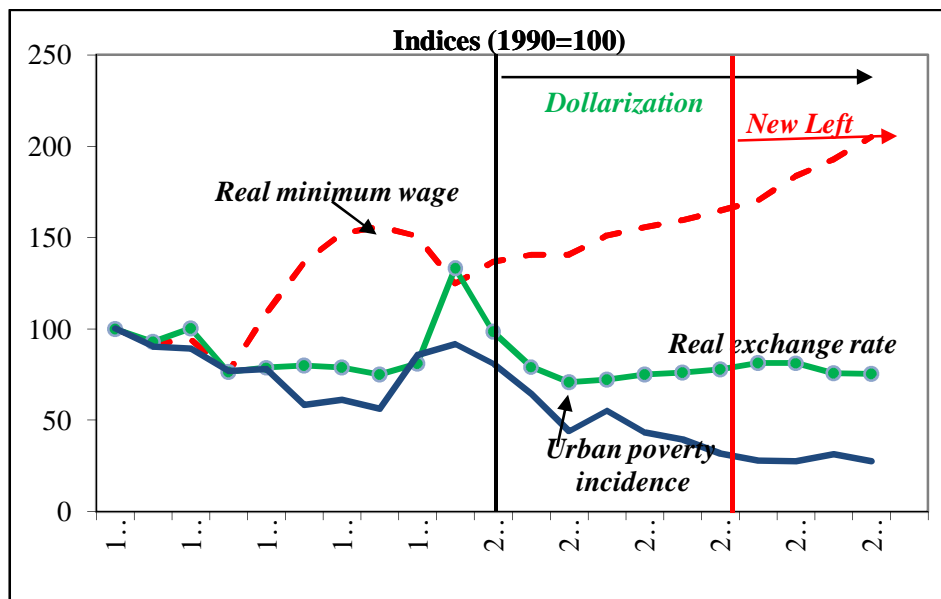
The stabilization programme and market reforms facilitated no more than a rather modest growth recovery from the lost decade of the 1980s (Figure 3). Control of the inflation and appreciation of the currency (visible in the downward trend in the real exchange rate in Figure 4) allowed for an increase in real urban wages, which was a main factor in the decrease in urban poverty between 1992 and 1997.

These trends could not be sustained. The country entered into a period of political and financial turmoil towards the end of the 1990s (Vos 2002: 272–6). The policy reform process was halted with a series of political scandals and multiple presidential changes between 1996 and 2000. Populism, political corruption and high uncertainty took centre stage and macroeconomic imbalances worsened dramatically. Political instability was compounded by a series of adverse economic shocks, including a steep fall in oil prices and the natural disaster caused by the El Niño phenomenon of 1997–98. The direct cost of the drop in oil prices amounted to 1.0 per cent of GDP in 1997 and 2.7 per cent in 1998. The estimated foregone earnings in agriculture, transportation and commerce because of the weather shock range between 1 and 10 per cent of GDP (Vos 1998), but even when taking the lower-bound estimate, it is clear the economy suffered a severe setback. The non-financial public sector deficit climbed to 6 per cent of GDP and the current account deficit to 12 per cent of GDP in 1998. This put pressure on the exchange rate and the sucre was devalued by 15 per cent in September 1998. The devaluation pushed an already fragile banking sector into insolvency, owing to a high degree of dollarization on the liability side. Subsequent, ill-conceived policy responses (like increasing the policy interest rate to 1900 per cent level in February 1999) caused a domestic credit crunch and a full-blown economic and financial crisis. Inflation accelerated to 65 per cent by late 1999 and GDP fell by 7.3 per cent that year.

Urban unemployment rate doubled to 14.5 per cent during 1999, real wages lost 25 per cent of their purchasing power, and the dollar value of the minimum wage dropped to \$40 per month, undoing much but not all of the gains made in the earlier part of the decade. In January 2000, amidst a high state of financial panic and political turmoil, the government decided to replace the national currency with the US dollar (Vos 2002). This put an end to exchange rate uncertainty, but not to inflation which accelerated to 100 per cent for reasons explained above (see footnote 2).

The distributional consequences of the ups and downs of the Ecuadorian economy during the 1990s are not easy to gauge, in part because consistent survey data are available only for urban areas. The available evidence seems to point at the following. The structural adjustment induced by the economic liberalization and stabilization

Figure 4
Urban poverty, real wages and real exchange rate, 1990-2010



Source: Based on INEC (Employment and Unemployment Surveys) (several years) for poverty data, and Central Bank of Ecuador for exchange rate and wage data.

policies implied greater export orientation and a shift towards more capital-intensive production (oil, manufacturing, traditional agriculture), with the exception of a few agricultural subsectors (flowers, vegetables). On balance, this led to a relative decline in labour demand in the modern segment of the traded goods sector. At the same time, the demand for wage labour became more skill-intensive, leading to a widening of income gaps between skilled and unskilled workers as well as between wage earners and self-employed workers. Informal sector employment expanded, shifting factor income distribution away from wages and towards profits and labour income distribution from wages to self-employed incomes. These factors dominated in pushing up urban income inequality during the first part of the decade, but the strong recovery in real (urban) wages from 1993 allowed for a reversal in the downward trend of the wage share. In addition, urban household incomes tended to move closely with adjustments in the institutionally set modern-sector minimum wage. This correlation was associated further with two other factors: most wages and salaries in the modern sector are linked to the minimum wage, and urban self-employed incomes benefit from strong multiplier effects of real wage increases. As a result urban poverty rates declined mostly driven by average real wage improvements rather than by structural economic change. The wage adjustments offset the impact of unequalizing factors, as the improvements came bottom up.

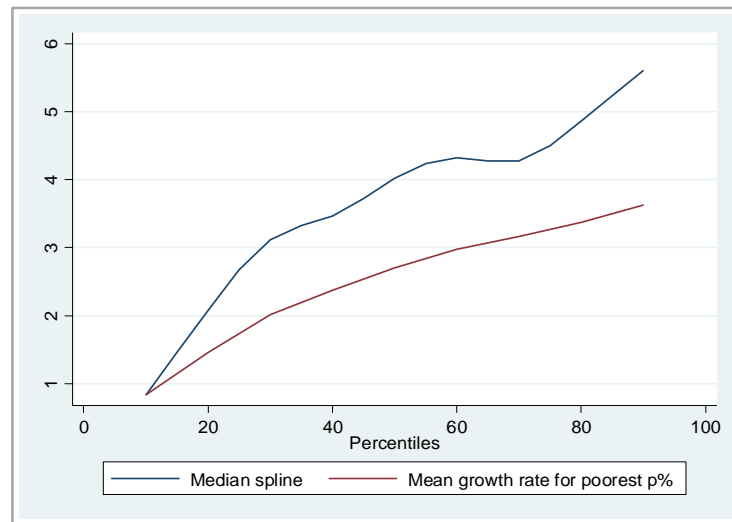
When the economy went into a tailspin, the downward trends in inequality and poverty were reversed as unemployment increased, more workers were pushed into informal sector employment and real wages fell. Poverty increased in both urban and rural areas, but more strongly in the cities. The El Niño phenomenon affected mostly the rural poor (Vos 1998). Rural income inequality does not appear to have changed much in the second half of the 1990s.⁸ Urban income inequality, in contrast, increased steeply (see

⁸ See Vos (2002) based on data of the 1995 and 1999 living standard surveys (ECV).

Figure 2A), as the indicated macroeconomic factors worked adversely without reversing the employment structure to a more equitable direction (Vos 2002: 308).

Taken over the decade as a whole, economic growth was clearly unequalizing (Figure 5): income growth for the poorest decile of the urban income distribution was well below the income growth for the population belonging to all other deciles and was the strongest for the richest deciles.

Figure 5
Urban households: Incidence curves for per capita income growth, 1990-2000



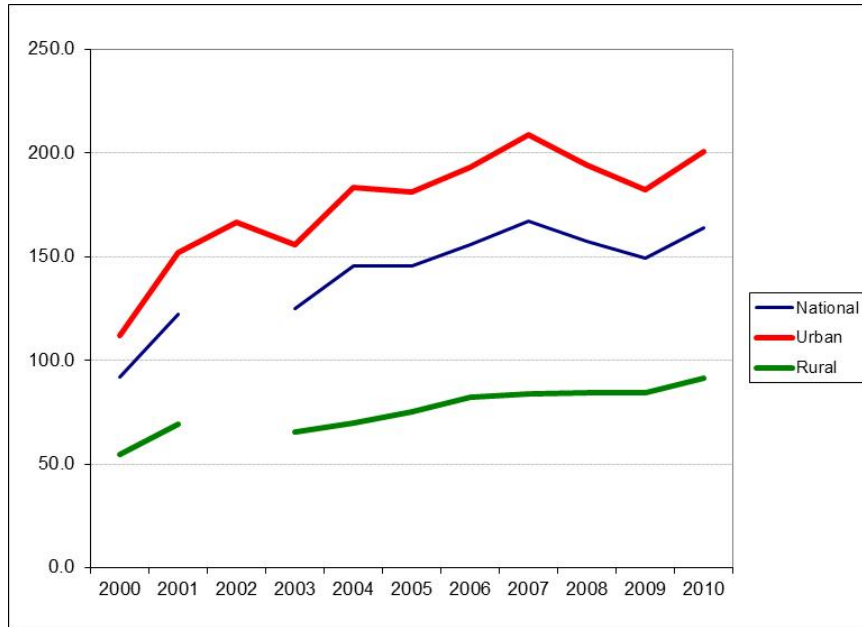
Note: The methodology developed by Ravallion and Chen (2003) was followed to estimate the income growth incidence curves. Growth may be defined as pro-poor, when the growth rate of the poorest deciles is higher than that of the richest deciles.

Source: Based on INEC (Employment and Unemployment Survey)(1990 and 2000).

Dollarization, recovery, and falling inequality

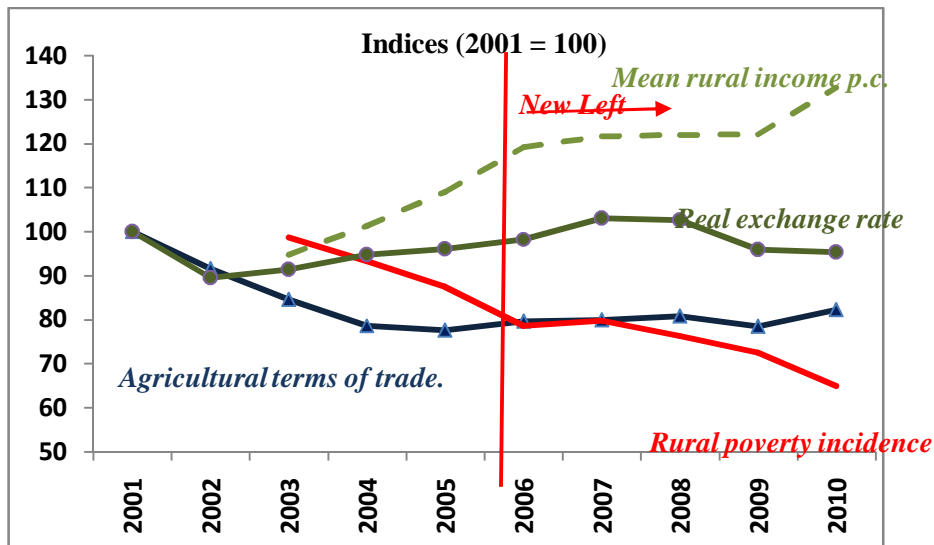
After the dollarization, the monetary ‘shock’ initially generated a greater adjustment of prices and, as said, inflation soared to 100 per cent in 2000. It took three years to bring the rate of inflation down to single digits. The rapid economic recovery was based on the construction of a new oil pipeline for the transport of heavy crude and by the significant increase in the price of oil. In addition, economic growth, until the global crisis of 2008, was also supported by rapidly increasing remittance incomes from Ecuadorian migrants in Spain, other parts of Europe and the United States. Remittances accounted for almost 5 per cent of GDP by the middle of the first decade of the 21st century. The strong expansion of the oil sector was not accompanied by a similar economic dynamism in the rest of the economy, making the economy even more dependent on oil production and exports (León, Rosero and Vos 2010). Growth in the oil sector, accompanied by the appreciation in the exchange rate, the recovery of real wages, and the very weak growth in labour productivity in non-oil tradable sectors formed part of the country’s continued Dutch disease syndrome. A new leftist government took office in 2007. High oil prices, increased government participation in oil rents and improvements in tax collection stepped up government revenue in a major way. Much of the increase in revenue was used to expand social spending. Social expenditures, including the cash transfer programme, doubled as a share of GDP (from 4 to 8 per cent) in few years’ time. However, oil dependence as well as other external vulnerabilities increased.

Figure 6
Real per capita household income, 2001-10
(constant 2010 US dollars)



Source: Based on INEC (Employment and Unemployment Survey)(2000-10).

Figure 7
Rural poverty, real incomes and relative prices, 2001-10
(indices, 2001=100)



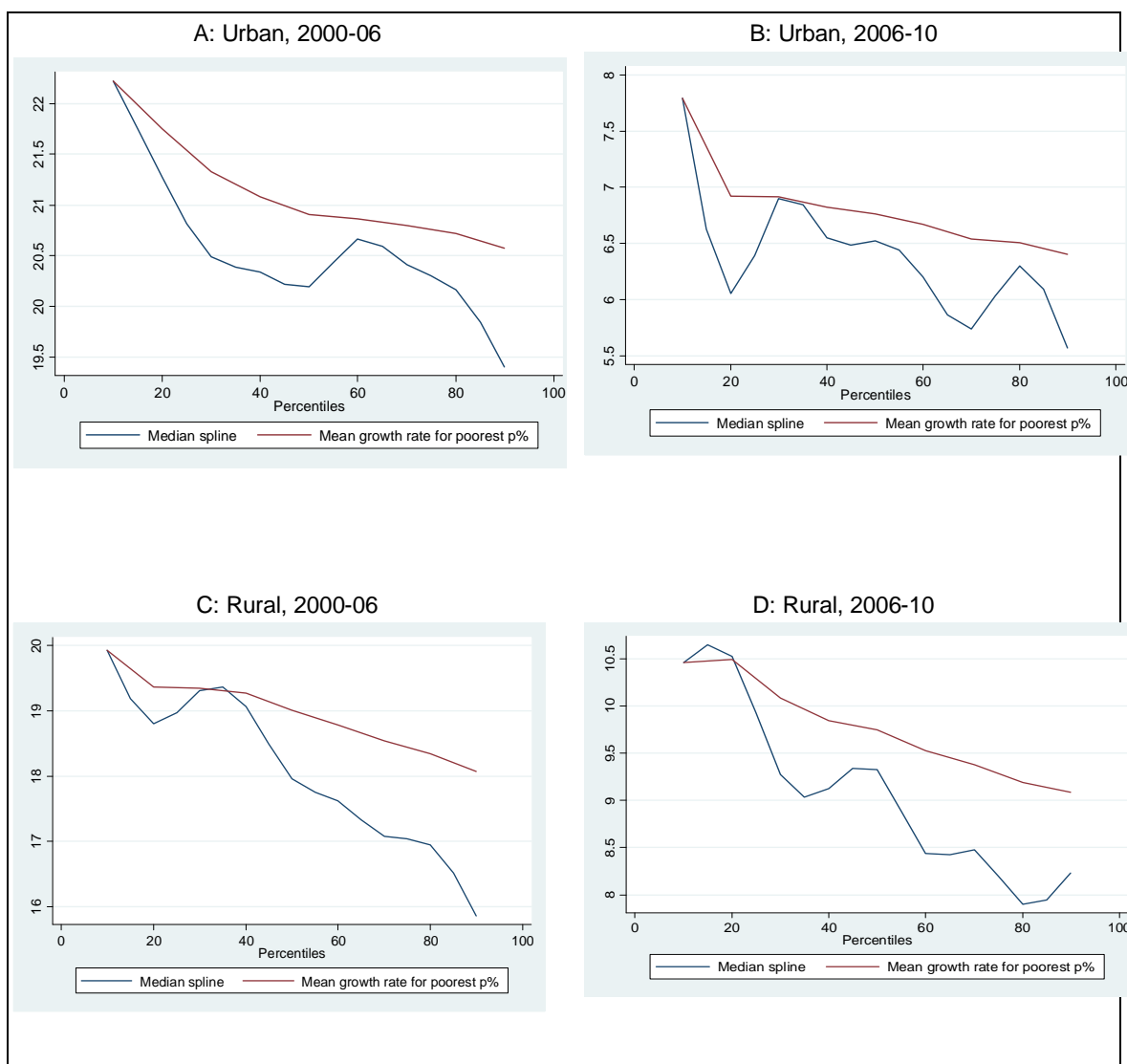
Source: Based on INEC (Employment and Unemployment Surveys) (several years) for poverty data and household income data; Central Bank of Ecuador for exchange rate and agricultural terms of trade data.

The upshot of all this was a strong rebound of the economy and growth became pro-poor. Between 2000 and 2006, the economy grew at an annual average of 5 per cent. Growth decelerated to 3.3 per cent per year between 2007 and 2010 as a result of the global recession. Similarly, real per capita household income growth slowed in the second half of the 2000s, but averaged nonetheless around 3 per cent per year between 2001 and 2010. This robust growth allowed mean incomes to rise to well above pre-

crisis levels and overcome the income losses suffered during the crisis and the inflationary shock caused by the dollarization of the economy. Urban and rural households alike saw welfare increase and poverty drop (see Figure 4 above and Figures 6 and 7).

Income growth for the poorest deciles was substantially higher than that of the richer deciles among both urban and rural households and during both the first and second half of the 2000s (Figure 8). An important difference is that income growth was much higher during 2000-06 given the recovery from the 1999 crisis and hence the impact in terms of reducing income inequality was also bigger.

Figure 8
Incidence curves for per capita income growth, 2000-10



Note: The methodology developed by Ravallion and Chen (2003) was followed to estimate the income growth incidence curves. Growth may be defined as pro-poor, when the growth rate of the poorest deciles is higher than that of the richest deciles.

Source: Based on INEC Employment and Unemployment Surveys(2000, 2006, and 2010).

As was the case in the first half of the 1990s, rising real wages and falling unemployment seem to have been key factors in driving down *urban* income inequality during the 2000s. Expansion of the cash transfer programme enhanced this trend, especially in the second half of the 2000s. These factors seem to have been reinforced by the pattern of economic recovery based on primary exports, which strengthened traditional sectors and weakened the post-liberalization push for greater demand for skilled workers. This, together with the continued growth in the supply of more educated workers coming out of the schooling system, likely pushed down the wage gap between skilled and unskilled workers in urban areas. These trends seem to have been counteracted by the rise of remittances which, at least for most of the decade, benefitted higher-income groups most and by the continued expansion of informal sector employment, which likely pushed up income disparity between urban wage earners and self-employed.

The decline in rural income inequality is less easy to explain. As said, rural incomes were lifted by the strong growth in agricultural output in the years after the natural disaster and financial crisis of the late 1990s. Agricultural production increased by almost 5 per cent on average between 1999 and 2005 and continued at that pace until 2008, after which there was a slowdown with the global crisis. Expanding agricultural activity seems to have benefited small and medium-sized farming (basic food crops and some traditional export crops, such as cocoa) more than large scale farming. Rising international food prices may have provided some incentive to farm production. Along with rising domestic food demand (on the back of rising real wage incomes), they induced some improvement in the domestic agricultural terms of trade during the second half of the 2000s, which along with the expansion of the cash transfer programme seems to have helped reduce rural income inequality and poverty (see Figure 7). By the new leftist government's own assessment of achievements during 2007-2011,⁹ no structural changes have taken place in agricultural production or the distribution of land, such that overall macroeconomic conditions and progressive social policies appear to have been the main drivers of the observed inequality and poverty trends. More in-depth assessment of agricultural trends and rural livelihood conditions is required to further substantiate this, as yet, tentative conclusion.

3.2 Changes in demographics and employment conditions

In some countries, changes in the demographic structure of households have played an important role in the reduction of income inequality during the 2000s.¹⁰ This does not seem to have been a major factor in Ecuador's case, however. We tested this first by looking at changes in the distribution of household members in working age (defined here as those between 25 and 55 years of age) and the number of income earners per household.

We find that in both urban and rural areas, the share for this group of working age people has increased slowly, but steadily over the past two decades. In this sense,

⁹ SENPLADES (2012).

¹⁰ See, for example, Gasparini and Cruces (2010) for the case of Argentina, Barros et al. (2010) for the case of Brazil, Esquivel, Lustig and Scott (2010) for Mexico, and Jaramillo and Saavedra (2010) for Peru.

Ecuador potentially could be earning a ‘demographic dividend’. However, over the past two decades, this dividend has benefited the richer deciles of the income distribution more than others (see Annex Table A5). The difference with other deciles decreased somewhat during the 2000s and thus may have contributed to the observed reduction in inequality. This contribution has likely been small given the rather small demographic shift that took place.

The average number of income earners of households has increased along with the rising share of working-age household members. In urban areas, household now have 2.1 income earners on average, compared with 1.8 twenty years ago (see Annex Table A6). The rise in rural areas has been starker, as the average number of income earners increased from 1.9 to 2.2 in the decade between 2000 and 2010. While there is an underlying upward trend, the number appears sensitive—as might be expected—to the business cycle. It ticked up in the first years of the millennium with the recovery from the 1999 crisis, but stabilized thereafter and dropped somewhat (in urban areas) with the global crisis of 2008-09. These trends are somewhat stronger among the poorest deciles and thus could explain at least some of the observed inequality trends, including the drop in the first half of the 2000s. However, again, given the rather small changes across deciles, this factor likely also explains observed distributional shifts to a minor degree.

According to the literature, changes in employment conditions may constitute another key element in the explanation of the evolution of inequality.¹¹ In addition to the factors discussed in the previous subsection, we look here more specifically at changes in the number of working hours and the degree of ‘informality’ of jobs and test whether these correlate with the observed distributional shifts.

We find that in the urban areas the average working week fluctuated around 43 hours during 1990-2010. The number of hours worked increased during the 1990s, peaking at 47 in 1996, but declined again during the 2000s (Annex Table A7). The average number of hours of rural workers also decreased during the 2000s. The working week tends to be longer for the richer deciles than the poorer ones, as a reflection of higher degrees of underemployment among the latter, especially in rural areas. In 2000, urban workers belonging to the richest decile worked on average 7.8 hours per week more than those belonging to the poorest decile, up from a difference of 2.7 hours in 1990. Assuming that working longer translates to higher labour incomes, this means that fuller employment among the richer households may explain some of the rise in urban income inequality during the 1990s. Differences in the length of the work week across income deciles stayed more or less the same, however, during the 2000s, so that this does not seem to have been a factor in explaining falling urban inequality during that period. In rural areas, it seems to have been a contributing factor during the period of the ‘new leftist’ regime when the number of hours worked increased among the poorest deciles, but remained about the same among richer deciles.

As already hinted at in the previous subsection, the degree of informality in Ecuadorian labour markets increased notably over the past two decades. Table 7 shows the

¹¹ Contreras and Granda (2002) and Vos and de Jong (2003) are examples of analysis of the changes in inequality in Ecuador based on decompositions of employment trends.

declining shares of urban workers employed in the modern sector by income deciles.¹² On average, the share of modern sector workers declined from 55 to 53 per cent during the 1990s and further to less than half of the work force during the 2000s. The degree of informality is substantially higher among the poorest deciles. In fact, among the top 40 per cent of the income distribution, the degree of informality either decreased or stayed the same, while it increased dramatically among the poorer segments. The increase in the informal urban employment also continued in the second half of the 2000s when the new leftist government came to power.

Table 7
Increasing informality, decreasing modernity
(% share of urban workers employed in the modern sector)

Decile	1990	1993	1996	2000	2003	2006	2010
Poorest decile	45.6	46.9	49.2	40.8	43.3	33.3	13.4
2	53.0	48.9	45.3	41.8	42.3	32.1	23.5
3	51.5	49.7	51.2	44.8	46.5	40.0	30.3
4	51.8	47.4	45.6	45.4	48.5	41.4	34.6
5	55.5	49.9	54.2	50.8	46.5	44.9	41.4
6	52.1	51.5	53.9	47.9	54.5	48.9	45.6
7	51.2	54.5	56.8	53.1	53.4	54.7	51.5
8	56.1	57.6	59.2	52.9	58.2	58.9	55.9
9	57.3	58.3	63.5	63.8	65.4	63.6	63.3
Richest decile	65.7	61.6	64.7	68.9	71.5	73.7	73.9
Urban total	55.2	53.8	55.8	53.5	55.4	52.2	48.4

Source: Based on INEC (Employment and Unemployment Survey)(various years).

As already indicated, the economy became more export-oriented after trade liberalization. Most of this production was more capital-intensive production (oil, manufacturing, traditional agriculture), with the exception of a few agricultural subsectors (flowers, vegetables). The low productivity growth in the 1990s seemed largely on account of this sectoral shift, producing a relative decline in the overall demand for labour in the modern part of the traded goods sector. The reduced demand for wage labour also became more skill-intensive, given rise to larger income differentials between wage earners and self-employed workers. The weight of employment growth has been in informal jobs and for the self-employed. Together with dramatic decreases in the real wage, it has shifted factor income distribution away from wages towards self-employed incomes (Vos 2002). No major changes are observed

¹² According to the National Institute of Statistics of Ecuador (INEC), the modern (or formal) sector is composed of 'employed persons who work in establishments with more than 10 workers and those people who work in establishments of up to 10 workers, who have a RUC number and complete accounting records'. On the other hand, 'the informal sector is considered as a group of production units which, according to the definitions and classifications of the System of National Accounts of the United Nations, form part of the household and household business sector; that is to say, they are businesses which belong to the households and which are unincorporated. Within the household sector, the informal sector consists of: i) the 'informal businesses of people who are self-employed,' ii) an additional component, which consists of 'businesses with informal employers'. The informal sector is defined irrespective of the workplace in which productive activities are carried out, of the degree of fixed capital assets, and of the duration of the business activities (indefinite, seasonal, or occasional)'. In rural areas, most workers (80 to 90 per cent) are either self-employed and/or working in small farm and business units, hence disaggregation of modern and informal sector workers in rural areas by income deciles is a statistically speaking less meaningful undertaking because of the small sample size of modern sector workers.

during the 2000s in this regard. For this reason we talk about a structural trend to increasing informality.

3.3 Increasing levels of education and falling wage gaps

Educational levels of the labour force have increased across Latin America. Wage gaps may have fallen as a consequence, if the growth in the supply of skilled workers has outpaced demand.¹³

Also in Ecuador, the average years of schooling of the labour force (aged between 25 and 55 years) increased substantially over the past two decades (Table 8). In urban areas, the average increased gradually from 9 years in 1990 to 12.6 years in 2010 and in rural areas from 6 to 7 years between 2000 and 2010. Educational levels increased at all income levels, but richer deciles tended to experience greater improvements. In urban areas, the difference in education levels between workers belonging to the top 10 per cent of the household income distribution and the poorest 10 per cent increased from 5.6 years in 1990 to 9.6 years in 2010. The widening of the gap seems to have accelerated during the 2000s. In rural areas this gap increased from 3.7 years in 2000 to 4.5 years in 2010.

The implications for the wage gap between skilled and unskilled workers depend on what happened to the demand for skilled workers. Existing studies suggest that much of the increase in income inequality in Latin America during the 1990s was the result of increasing wage differentials between skilled and unskilled workers. The increase would have been produced by more skill-intensive technological change induced by trade and capital account opening.¹⁴ The greater demand for skilled labour would have increased the wage gap between skilled and unskilled workers.¹⁵ During the 2000s, in contrast, the increase in the educational level of the work force would have counteracted the increase in the demand for skilled labour, reducing the wage gap.¹⁶

To analyse whether this process occurred in the Ecuadorian case, a Mincerian wage regression was estimated for the population between the ages of 25 and 55 for each of the years analysed in this study. The estimation model is as follows:

$$Y_i = \alpha + \beta C_i + \gamma X_i + \varepsilon_i$$

According to this model, Y_i is the logarithm of labour income per hour, X_i is a vector of control variables (such as age, age squared, and a dummy for the modern sector), and C_i

¹³ A critical stance regarding the relationship between education and the decrease in wage inequality can be seen in Figueroa (2008).

¹⁴ For the case of Latin America and Ecuador see, respectively, Ganuza et al. (2004) and Vos and León (2003). The Brazilian case represents an exception in this sense, given that trade liberalization generated a reduction of inequality. See Ferreira, Leite and Wai-Poi (2007)

¹⁵ Critical stances regarding the focus on technological change with a bias towards skilled labour can be found in Card and DiNardo (2002), Morissette and Drolet (1998), Oosterbeek (1997), and Entorf, Gollac and Kramarz (1999). For Ecuador see Oosterbeek and Ponce (2011).

¹⁶ See, for example, López-Calva and Lustig (2010).

Table 8
Average years of schooling of the labour force by decile (for persons in age group 25-55)

	1990	1993	1996	2000	2003	2006	2010
A: Urban areas, 1990-2010							
Poorest decile	7.0	7.2	8.1	7.5	7.4	7.7	8.5
2	7.9	7.5	8.0	7.7	7.7	8.2	9.1
3	7.4	8.0	8.0	8.6	8.6	8.5	9.3
4	7.8	8.2	8.8	8.9	8.9	9.4	10.2
5	8.4	8.8	9.2	9.0	9.2	10.1	10.4
6	8.9	9.0	9.8	9.0	9.8	11.0	11.6
7	9.0	9.7	10.4	10.3	10.5	12.5	13.0
8	10.3	10.6	11.4	10.9	11.5	14.0	13.5
9	11.1	11.4	12.4	12.5	12.7	15.4	15.9
Richest decile	12.6	13.3	13.4	13.9	14.6	18.0	18.1
Total	9.4	9.7	10.4	10.3	10.6	12.2	12.6
B: Rural areas, 2000-10							
	2000	2003	2006	2010			
Poorest decile	4.9	4.6	4.8	5.6			
2	4.8	4.6	4.9	5.5			
3	4.9	4.8	5.1	5.4			
4	5.0	5.2	5.3	5.9			
5	5.4	5.5	5.6	6.2			
6	5.8	5.6	5.8	6.6			
7	6.1	5.7	5.9	6.7			
8	6.0	6.2	6.7	7.1			
9	6.8	6.5	7.1	7.8			
Richest decile	8.6	8.2	10.1	10.1			
Total	6.0	5.9	6.4	7.0			

Source: Based on INEC (Employment and Unemployment Survey) (various years).

is a dichotomous variable which has a value of 1 if the worker is skilled and 0 if he is unskilled. A skilled worker is defined as someone who has at least completed secondary school. ε is the error term, with a normal distribution and a mean of zero. The coefficient of interest is beta (β), which indicates the salary gap between skilled and unskilled workers.

The results confirm that trends in Ecuador are no exception to those found elsewhere. The wage premium for skilled workers increased during the 1990s (Table 9). After correcting for age (which we used as a proxy for work experience) and type of employment (modern or informal), skilled male workers earned around 79 per cent more than unskilled male workers in 2000, up from 54 per cent in 1990. The wage premium for skilled female workers went up from 37 to 58 per cent.¹⁷

These trends reversed during the 2000s, as the wage gap decreased for both men and women. In the urban area, the skill premium reduced from 79 to 57 per cent for men and from 58 to 42 per cent in the case of women. The gap also narrowed among rural workers, falling from 68 to 36 per cent for men and from 74 to 47 per cent for women.

¹⁷ In reality the correct interpretation of the beta coefficient, given that the dependent variable is the logarithm of the labour income per hour, is 1 minus the antilog of beta. In this case the gap will be much larger.

The improvements in the skill level of the labour force are closely associated with the recovery of real public spending in education during the 1990s and the cash transfer programme(s) of the 2000s which helped increase access to education.

The impact of these trends in wage gaps by educational level on overall income inequality has been counteracted by the relative increase in informal employment. Using the same Mincerian model from above, the wage premium was estimated for the dichotomous variable which indicates the sector in which the individual works (with a value of 1 if the worker is employed in the modern sector and 0 if he or she is employed in the informal sector). This coefficient measures the gap between the labour income of workers in the modern sector versus the workers in the informal sector, after correcting for skill level and for work experience. Table 10 shows a strongly rising modern sector wage premium for urban workers during the 1990s and 2000s.¹⁸ During the 1990s this effect thus compounded other factors driving up overall urban income equality, while during the 2000s it counteracted factors that drove down inequality.

Table 9
Skill-based wage premium by gender
(beta coefficients estimated using Mincerian wage equation)

	Urban area		Rural area		National	
	Men	Women	Men	Women	Men	Women
1990	0.5354*	0.3715*				
1993	0.6796*	0.3999*				
1996	0.6278*	0.3813*				
2000	0.7896*	0.5762*	0.6780*	0.7476*	0.797*	0.618*
2003	0.7198*	0.6057*	0.4622*	0.6010*	0.707*	0.633*
2006	0.6374*	0.5657*	0.6463*	0.5931*	0.646*	0.589*
2010	0.5745*	0.4220*	0.3618*	0.4703*	0.594*	0.480*

Note: *Significant at 1%.

Source: Based on INEC(Employment and Unemployment Survey)(various years).

Table 10
Wage premium for modern sector urban workers, by gender
(dummy coefficients for the modern sector)

Year	Men	Women
1990	0.0561*	0.0977*
1993	0.0964*	0.2708*
1996	0.1334*	0.4249*
2000	0.1956*	0.345*
2003	0.3187*	0.4286*
2006	0.2959*	0.4356*
2010	0.402*	0.5701*

Note: * Significant at 1%.

Source: Based on INEC(Employment and Unemployment Survey)(various years).

¹⁸ In the rural area the distinction between modern and informal sector is less relevant, because most workers are employed in traditional agricultural activities and other rural activities which may be labelled as 'informal'.

4 Conclusions

This study has analysed the factors associated both with the increase in inequality which occurred during the 1990s and with the reduction in inequality in the 2000s. The trend towards greater income equality coincides partly with the rise to power of a ‘new leftist’ government from 2007. However, income inequality and poverty fell from the early 2000s. Much of this had to do with the recovery from a natural disaster and deep economic and financial crisis in the late 1990s. During the 1990s, inequality had increased in part because of these factors and in part because of the impact on labour markets of the liberalization of trade and financial sectors. The latter, however, reinforced (by and large) the primary export-based growth model of the Ecuadorian economy. During the 2000s, improved international commodity prices helped the recovery and provided space for significant real wage and rural labour income increases, as well as for substantial increases in social spending.

The lack of dynamic structural change in the economy, however, does not augur for sustained reductions in labour income inequality. The drop in income inequality during the 2000s was mainly on account of the economic rebound following the deep crisis of the late 1990s. Most structural factors continue pushing towards greater inequality, especially the continued informalization of the economy. Some elements of the programme for an ‘inclusive and solidary’ economy of the new leftist government, the microcredit programme in particular, may have pushed in the same direction. Other elements, especially the enhanced social spending and quality improvements in social services, may help counteract income inequality over the medium run, but only if more dynamic structural change would help absorb a more educated labour force. Also the decline in rural inequality does not appear to be associated with much visible structural change in agriculture or in asset distribution. Rather, early in the decade it seems to have come on account of the recovery from the natural disaster and the financial crisis and, in the second half of the 2000s, smallholder farmers seem to have gained from improving agricultural terms of trade and rising domestic food demand as well as the enhancement of the cash transfer programme.

References

- Altimir, O.(1995). 'Changes in Inequality and Poverty in Latin America'. Santiago, Chile: CEPAL.
- Barros, R., M.de Carvalho, S.Franco, and R. Mendonza(2010). 'Markets, the State and the Dynamics of Inequality in Brazil'. In L. López-Calva and N. Lustig (eds), *Declining Inequality in Latin America: A Decade of Progress?*. Washington, DC: UNDP and Brookings Institution Press.
- Beccaria, L., J. Boltvinik, J. C. Feres, O.Fresnada, A. León, and A. Sen(1992). *América Latina: El Reto de la Pobreza, Características, Evolución y Perspectivas*. Bogotá.PNUD.
- Card, D., and J. DiNardo(2002). 'Skill-Biased Technological Change and Rising Wage Inequality: Some Problems and Puzzles'. *Journal of Labour Economics*,20(4): 733–83.
- Chenery, H. B. (1979). *Structural Change and Development Policy*. New York: Oxford University Press.
- Contreras, D., and M. L. Granda(2002). 'Crisis, Ingresos y Mercado de Trabajo en Ecuador'. *Boletín del Instituto Francés de Estudios Andinos*,31(3): 621–54.
- Cornia, G. A. 'Inequality Trends and their Determinants: Latin America over 1990-2010'. WIDER Working Paper 2012/09. Helsinki: UNU-WIDER.
- De Janvry, A., and E. Sadoulet(1999). 'Growth, Poverty, and Inequality in Latin America: A Causal Analysis, 1970-94'. Paper presented at the Conference on Social Protection and Poverty, 4-5 February. Washington, DC: Inter-American Development Bank.
- Entorf, H., M. Gollac, and F. Kramarz(1999). 'New Technologies, Wages, and Worker Selection'. *Journal of Labour Economics*, 17(3): 464–91.
- Esquivel, G., N. Lustig, and J. Scott(2010). 'Mexico, a Decade of Falling Inequality:Market Forces or State Action?'. In L. López-Calva and N. Lustig (eds), *Declining Inequality in Latin America: A Decade of Progress?*. Washington, DC: UNDP and Brookings Institution Press.
- Ferreira, F., P. G. Leite, and M. Wai-Poi(2007). 'Trade Liberalization, Employment Flows and Wage Inequality in Brazil'. WB Policy Research Working Paper 4108. Washington, DC: World Bank.
- Figuroa, A. (2008). 'Education, Labour Markets and Inequality in Peru'. CRISE Working Paper 48. Oxford: Department of International Development, University of Oxford.
- Ganuzza, E., S. Morley, S. Robinson, and R. Vos(2004). '*Quién se Beneficia del Libre Comercio?*. *Promoción de Exportaciones y Pobreza en América Latina y el Caribe en los 90*. Bogotá: Alfaomega
- Gasparini, L., and G. Cruces (2010). 'A Distribution in Motion: The Case of Argentina'. In L. López-Calva and N. Lustig (eds), *Declining Inequality in Latin America: A Decade of Progress?*. Washington, DC: UNDP and Brookings Institution Press.

- INEC (National Institute of Statistics and Censuses of Ecuador)(n.d.). Household Surveys. Quito: INEC.
- Jaramillo, M., and J. Saavedra (2010). 'Inequality in Post-Structural Reform Peru: The Role of Market Forces and Public Policy'. In L. López-Calva and N. Lustig (eds), *Declining Inequality in Latin America: A Decade of Progress?*. Washington, DC: UNDP and Brookings Institution Press.
- León, M., J. Rosero, and R. Vos(2010). 'Ecuador'. In M. V. Sanchez, R. Vos, E. Ganuza, H. Lofgren, and C. Diaz-Bonilla (eds), *Public Policies for Human Development: Achieving the Millennium Development Goals in Latin America*. London/New York: Palgrave Macmillan.
- Lerman, R. I., and S. Yitzhaki (1985). 'Income Inequality Effects by Income Source: A New Approach and Applications to the United States'. *Review of Economics and Statistics*, 67: 151–6.
- López-Calva, L., and N. Lustig(2009). 'The Recent Decline on Inequality in Latin America: Argentina, Brazil, Mexico and Peru'. ECINEQ Working Paper Series 2009-140. Palma de Mallorca: Society for the Study of Economic Inequality.
- López-Calva, L., and N. Lustig(2010). 'Explaining the Decline in Inequality in Latin America: Technological Change, Educational Upgrading and Democracy'. In L. López-Calva and N. Lustig (eds), *Declining Inequality in Latin America: A Decade of Progress?*. Washington, DC: UNDP and Brookings Institution Press.
- Lustig, N. (1995). 'Introduction'. In N. Lustig (ed.), *Coping with Austerity: Poverty and Inequality in Latin America*. Washington, DC: The Brookings Institution.
- Morissette, R., and M. Drolet (1998). 'Computers, Fax Machines and Wages in Canada: What Really Matters?'. Working Paper 126. Ottawa: Statistics Canada.
- Morley, S. (1995). *Poverty and Inequality in Latina America: The Impact of Adjustment and Recovery in the 1980s*. Baltimore: The John Hopkins University Press.
- Olivié, I., J. Ponce, and M. Onofa(2008). 'Remesas, Pobreza y Desigualdad. El caso de Ecuador'. Seville: Estudios Elcano 1.
- Oosterbeek, H. (1997). 'Returns from Computer Use: A Simple Test on the Productivity Interpretation'. *Economic Letters*. 55: 273–7.
- Oosterbeek, H., and J. Ponce (2011). 'The Impact of Computer Use on Wages in a Developing Country: Evidence from Ecuador'. *Labor Economics*, 18(4): 434–40.
- Psacharopoulos, G., S. Morley, A. Fiszbein, H. Lee, and W. Wood(1995). 'Poverty and Income Inequality in Latin America during the 1980s'. *Review of Income and Wealth*, 41(3): 245–64.
- Ravallion, M., and S. Chen(1997). 'What Can New Survey Data Tell Us About Recent Changes in Distribution and Poverty?'. *The World Bank Economic Review*, 11(2): 357–82.
- Ravallion, M., and S. Chen (2003). 'Measuring Pro-poor Growth'. *Economic Letters*, 78(1): 93–9.
- Secretaría Nacional de Planificación y Desarrollo (SENPLADES) (2012). 'Evaluación del Plan Nacional Para el Buen Vivir'. Quito: SENPLADES.

- Vos, R. (1989). 'Ecuador: Windfall Gains, Unbalanced Growth, and Stabilization'. In E.V. K. FitzGerald and R. Vos (eds), *Financing Economic Development. A Structural Approach to Monetary Policy*. Aldershot: Gower, 187–232.
- Vos, R. (1998). 'How to Measure the Economic Cost of Natural Disasters? The Case of "El Niño" in Ecuador, 1997-8'. *European Journal of Latin American and Caribbean Studies*, 67: 21–34.
- Vos, R. (2000). 'Development and the Colour of money: Should all Developing Countries Have their own Currency?'. Inaugural lecture, 7 December. The Hague: Institute of Social Studies. Available at: www.repub.eur.nl/res/pub/30875/InauguralAddress2000Dec7Vos.pdf
- Vos, R. (2002). 'Ecuador: Economic liberalization, adjustment and poverty'. In R. Vos, L. Taylor, and R. Paes de Barros (eds), *Economic Liberalization, Distribution and Poverty: Latin America in the 1990s*. Cheltenham and Northampton: Edward Elgar Publishers, 259–313.
- Vos, R., and M. León (2003). *Dolarización, Dinámica de Exportaciones y Equidad: ¿Cómo Compatibilizarlas en el caso de Ecuador?*. Estudios e Informes del SIISE 5. Quito: STFS.
- Vos, R., and N. de Jong (2003). 'Trade Liberalization and Poverty in Ecuador. A Macro-micro CGE Approach'. *Economic Systems Research*, 15(2): 211–32.
- Vos, R., M. León, and W. Brborich (2001). 'Are Cash Transfers Effective in Reducing Poverty? Ecuador's Bono Solidario Programme'. Quito and The Hague: SIISE and Institute of Social Studies. Mimeo.
- Vos, R., J. Ponce, M. León, and J. Cuesta (2003). *¿Quién se beneficia del gasto social en Ecuador? Desafíos para mejorar la eficiencia y la equidad del gasto social*, Quito: Abya Yala Publishers.
- Vos, R., E. Ganuza, S. Morley, and S. Robinson (2006). *Who Gains from Free Trade? Export-led Growth and Poverty in Latin America*. London: Routledge.

Annex A1: Ecuador's household survey data

This study is based mostly on information from the employment and unemployment surveys of the National Institute of Statistics and Censuses of Ecuador (INEC). These surveys have been applied in the country since the end of the 1980s. For the analysis of the income distribution trends in the 1990s and 2000s, the following years were selected: 1990, 1993, 1996, 2000, 2003, 2006, and 2010. For each year, data refer to reporting during the month of November which is considered a month of the year least sensitive to seasonality. During the 1990s, the survey covered only urban areas. From the year 2000, the survey coverage expanded to also include rural areas. For the sake of comparability, this survey is used to address trends in urban income inequality. The surveys were selected with a tri-annual periodicity to analyse the different changes in income. Years characterized by crisis (1999 and 2009) were not analysed to avoid distortions in the analysis for being years of crisis. Instead, the years 2000 and 2010 were included. Annex Table A presents each year of the survey with the respective sample size.

Annex Table A
Sample size per year of the Employment and Unemployment Survey

Year	Urban	Rural
1990	34,890	n/a
1993	35,377	n/a
1996	34,935	n/a
2000	35,634	22,931
2003	41,097	36,076
2006	38,908	34,184
2010	41,988	35,613

Source: Based on INEC (Employment and Unemployment Surveys) (several years).

Annex Table B
Components of income used in each year of the survey

Year	Wage income		Self-employment income		Remittances	<i>Bono Solidario</i> /BDH
	Monetary	In kind	Monetary	In kind		
1990	Yes	No	Yes	No	No	No
1993	Yes	No	Yes	No	No	No
1996	Yes	No	Yes	No	No	No
2000	Yes	Yes	Yes	Yes	Yes	Yes
2003	Yes	Yes	Yes	Yes	Yes	Yes
2006	Yes	Yes	Yes	Yes	Yes	Yes
2010	Yes	Yes	Yes	Yes	Yes	Yes

Source: Based on INEC (Employment and Unemployment Surveys) (various years).

The survey has a stratified multistage sample design. The questions on income changed over the course of the two decades (see Annex Table B). Attempts have been made to maximize comparability and minimize loss of information. Wage and self-employed income as reported in the analysis refer to monthly incomes before taxes and other deductions and retentions. Until 2000, the surveys only reported monetary incomes.

From that point forward also income in kind was included in the survey questionnaire. Property incomes, other rents and retirement pensions were part of the questionnaires in all years. Starting in 2000, transfer incomes relating to worker remittances and cash transfer programmes also became part of the survey questionnaire.¹⁹ Prior to that year income from those sources were low or non-existent.

¹⁹ The initial (unconditional) cash transfer programme, introduced in 1999, was labelled *Bono Solidario* and was transformed in 2003 into an, on paper, conditional cash transfer programme called *Bono de Desarrollo Humano*.

Annex A2: Annex tables

AnnexTable A1
Trends in income inequality
(Gini coefficient for total household income per capita)

Year	Total	Urban	Rural
1990	n.a.	0.45	n.a.
1991	n.a.	0.49	n.a.
1992	n.a.	0.48	n.a.
1993	n.a.	0.51	n.a.
1994	n.a.	0.50	n.a.
1995	n.a.	0.49	n.a.
1996	n.a.	0.47	n.a.
1997	n.a.	0.48	n.a.
1998	n.a.	0.49	n.a.
1999	n.a.	0.53	n.a.
2000	0.57	0.55	0.54
2001	0.60	0.59	0.54
2002	n.a.	0.53	n.a.
2003	0.56	0.54	0.49
2004	0.57	0.54	0.49
2005	0.55	0.52	0.49
2006	0.53	0.50	0.48
2007	0.55	0.52	0.50
2008	0.51	0.48	0.48
2009	0.50	0.48	0.45
2010	0.51	0.49	0.45

Source: Based INEC(Employment and Unemployment Surveys)(various years).

Annex Table A2
Labour and property income inequality (Gini coefficient)

	Labour income			Property income		
	National	Urban	Rural	National	Urban	Rural
1990	n.a.	0.44	n.a.	n.a.	0.52	n.a.
1991	n.a.	0.50	n.a.	n.a.	0.54	n.a.
1992	n.a.	0.48	n.a.	n.a.	0.56	n.a.
1993	n.a.	0.51	n.a.	n.a.	0.55	n.a.
1994	n.a.	0.48	n.a.	n.a.	0.51	n.a.
1995	n.a.	0.48	n.a.	n.a.	0.54	n.a.
1996	n.a.	0.46	n.a.	n.a.	0.47	n.a.
1997	n.a.	0.47	n.a.	n.a.	0.53	n.a.
1998	n.a.	0.47	n.a.	n.a.	0.52	n.a.
1999	n.a.	0.54	n.a.	n.a.	0.62	n.a.
2000	0.55	0.55	0.52	0.68	0.67	0.75
2001	0.58	0.58	0.53	0.68	0.68	0.63
2002	n.a.	0.51	n.a.	n.a.	0.66	n.a.
2003	0.53	0.52	0.47	0.65	0.63	0.65
2004	0.55	0.54	0.49	0.58	0.56	0.58
2005	0.52	0.50	0.47	0.63	0.62	0.63
2006	0.50	0.49	0.46	0.58	0.55	0.64
2007	0.54	0.52	0.50	0.60	0.57	0.68
2008	0.50	0.49	0.46	0.57	0.54	0.63
2009	0.49	0.47	0.45	0.58	0.54	0.63
2010	0.48	0.47	0.43	0.54	0.50	0.63

Source: Based on INEC(Employment and Unemployment Surveys)(various years).

Annex Table A3
Distribution of personal labour income by deciles (income shares, %)

	1990	1993	1996	2000			2003			2006			2010		
	Urban	Urban	Urban	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Poorest 10%	2.0	1.7	1.7	0.9	1.1	0.9	0.7	1.2	0.7	1.0	1.7	1.1	1.1	1.8	0.9
2	4.5	4.5	3.0	1.9	2.0	2.4	2.1	2.7	2.4	2.3	3.9	2.7	2.6	2.8	2.7
3	4.0	3.4	5.7	2.9	3.3	2.9	2.8	3.6	3.6	3.3	3.0	4.2	3.0	4.2	3.6
4	5.4	4.3	5.9	3.8	4.9	4.2	3.9	5.5	4.9	4.4	5.0	4.7	4.5	5.2	5.0
5	6.9	8.9	5.5	5.4	4.9	5.5	5.2	6.1	6.0	5.6	7.2	6.1	5.6	6.3	6.3
6	9.4	10.3	6.9	6.3	6.7	6.9	6.4	6.8	7.6	7.1	6.9	7.9	7.1	7.4	7.7
7	10.0	4.3	9.4	7.8	9.0	8.7	8.8	9.4	9.5	8.8	9.2	9.5	8.9	9.7	9.7
8	12.3	11.3	12.6	10.5	11.5	11.4	10.5	11.7	12.1	11.5	11.4	12.3	11.5	11.5	12.2
9	15.5	16.5	16.4	15.3	17.1	15.4	16.9	17.6	15.9	16.3	16.7	15.9	16.5	16.4	16.7
Richest 10%	29.9	34.8	32.9	45.3	39.5	41.6	42.6	35.5	37.3	39.8	35.0	35.7	39.2	34.6	35.1

Source: Based on INEC (Employment and Unemployment Survey) (various years).

Annex Table A4
Distribution of property and other rental income by deciles (income shares, %)

	1990	1993	1996	2000			2003			2006			2010		
	Urban	Urban	Urban	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Poorest 10%	1.2	1.6	2.4	0.5	1.3	0.4	0.6	1.3	1.0	0.8	1.6	1.6	0.8	1.7	0.6
2	3.0	3.5	2.9	0.8	1.3	0.6	1.4	2.2	1.9	1.2	2.6	2.2	1.9	2.4	2.4
3	1.4	2.7	5.2	1.5	2.5	1.2	1.8	2.8	2.7	1.7	1.8	3.2	2.0	2.8	1.7
4	2.9	3.6	4.4	2.0	2.7	1.6	2.4	4.1	3.8	2.2	3.2	3.1	2.7	4.5	4.5
5	3.9	6.1	4.1	2.8	2.3	1.3	2.9	4.4	4.0	2.8	4.3	4.8	4.0	4.8	4.3
6	6.0	9.3	6.0	2.7	4.9	1.7	3.9	5.7	5.4	3.9	4.5	4.5	4.8	5.8	5.9
7	7.4	4.1	8.2	3.9	5.4	3.8	6.4	7.5	6.3	6.0	8.6	4.8	6.6	9.8	7.3
8	9.9	10.3	13.4	7.1	7.7	2.8	9.4	11.5	8.4	10.4	10.5	8.0	11.1	10.4	9.1
9	16.8	17.2	17.0	11.6	14.6	8.7	15.8	19.5	11.3	15.8	18.1	13.1	18.6	18.1	13.1
Richest 10%	47.3	41.4	36.2	67.2	57.3	77.8	55.5	41.0	55.1	55.1	44.8	54.8	47.5	39.7	51.0

Source: Based on INEC (Employment and Unemployment Survey) (various years).

Annex Table A5
Shares of the population in working age by income deciles (%)

Panel A: Urban areas, 1990-2010							
	1990	1993	1996	2000	2003	2006	2010
Poorest decile	28.0	28.0	29.1	28.9	27.3	27.1	29.9
2	31.9	31.7	31.3	30.8	31.0	32.9	32.9
3	33.3	33.8	33.5	33.5	33.6	34.1	33.4
4	32.2	35.0	35.4	35.0	34.5	35.9	36.3
5	34.5	36.1	35.1	37.0	37.1	37.2	36.9
6	34.8	37.1	38.1	38.0	37.9	39.3	39.5
7	38.0	41.1	41.3	39.1	39.7	41.6	41.0
8	36.4	42.3	42.7	42.3	42.6	45.9	44.4
9	42.3	44.1	43.0	45.1	46.2	46.6	44.5
Richest decile	45.6	45.6	47.5	47.1	47.7	49.1	45.8
Total	35.4	36.9	37.4	37.3	37.5	38.7	38.3

Panel B: Rural areas, 2000-10				
	2000	2003	2006	2010
Poorest decile	25.9	26.9	25.1	27.6
2	27.2	26.0	27.2	27.2
3	28.7	28.4	29.5	28.3
4	29.0	29.8	30.8	29.9
5	31.8	29.3	30.5	30.2
6	30.9	31.4	31.4	31.2
7	32.0	33.2	34.2	32.6
8	33.0	33.2	33.1	35.0
9	35.3	35.2	35.9	36.4
Richest decile	40.4	40.6	41.4	42.3
Total	30.9	31.2	31.7	31.9

Panel C: National, 2000-10				
	2000	2003	2006	2010
Poorest decile	26.9	26.5	26.0	28.0
2	29.4	28.2	29.5	29.8
3	31.0	31.2	31.9	32.0
4	32.6	32.6	32.8	32.4
5	33.8	34.0	35.5	35.0
6	36.0	35.6	35.8	36.3
7	36.6	37.4	38.4	38.6
8	39.1	39.5	41.5	41.4
9	42.9	43.6	45.8	44.3
Richest decile	46.6	47.6	48.4	45.3
Total	35.0	35.3	36.3	36.1

Source: Based on INEC (Employment and Unemployment Survey) (various years).

Annex Table A6
Average number of income earners per income decile (%)

Panel A: Urban areas, 1990-2010							
	1990	1993	1996	2000	2003	2006	2010
Poorest decile	1.3	1.4	1.3	1.6	1.7	1.9	1.6
2	1.4	1.7	1.6	2.0	2.0	2.2	1.8
3	1.7	1.8	1.6	2.2	2.1	2.2	2.0
4	1.8	2.1	1.9	2.2	2.1	2.3	2.1
5	2.0	2.1	2.1	2.3	2.4	2.4	2.2
6	2.1	2.2	2.2	2.2	2.3	2.4	2.3
7	2.2	2.4	2.1	2.4	2.3	2.4	2.4
8	2.3	2.4	2.3	2.3	2.3	2.4	2.3
9	2.3	2.4	2.3	2.3	2.3	2.3	2.3
Richest decile	2.3	2.4	2.3	2.2	2.3	2.3	2.2
Total	1.8	1.9	1.8	2.0	2.1	2.2	2.1

Panel B: Rural areas, 2000-10				
	2000	2003	2006	2010
Poorest decile	1.4	1.5	1.6	1.5
2	1.6	1.7	1.8	2.0
3	1.9	2.0	2.0	2.1
4	1.9	2.0	2.1	2.2
5	2.0	2.2	2.4	2.2
6	2.1	2.2	2.5	2.5
7	2.3	2.4	2.6	2.5
8	2.4	2.5	2.6	2.6
9	2.3	2.5	2.6	2.7
Richest decile	2.3	2.5	2.4	2.3
Total	1.9	2.1	2.2	2.2

Panel C: National, 2000-10				
	2000	2003	2006	2010
Poorest decile	1.5	1.6	1.7	1.6
2	1.8	1.9	2.1	2.0
3	2.0	2.1	2.3	2.0
4	2.2	2.1	2.3	2.1
5	2.2	2.2	2.3	2.3
6	2.3	2.5	2.5	2.3
7	2.3	2.4	2.4	2.4
8	2.3	2.4	2.4	2.5
9	2.3	2.3	2.4	2.2
Richest decile	2.2	2.3	2.3	2.2
Total	2.0	2.1	2.2	2.1

Source: Based on INEC (Employment and Unemployment Survey) (various years).

Table A7
Average number of hours worked per employed household member by income deciles

Panel A: Urban areas, 1990-2010							
	1990	1993	1996	2000	2003	2006	2010
Poorest decile	41.5	44.1	44.1	39.2	37.9	35.4	36.1
2	43.0	44.8	46.5	42.9	40.2	40.1	40.5
3	41.7	43.6	46.5	45.5	43.2	42.9	42.9
4	43.1	44.6	46.4	45.4	43.2	42.1	43.1
5	41.9	43.9	46.7	45.4	44.5	43.9	43.8
6	43.6	44.9	46.9	46.0	45.2	44.4	43.2
7	43.1	47.7	47.5	48.3	47.5	44.6	43.5
8	43.8	44.8	47.3	46.7	47.5	45.6	44.5
9	44.2	45.5	47.4	44.7	45.0	44.9	44.3
Richest decile	44.2	45.2	49.0	47.0	45.0	44.9	43.8
Total	43.2	45.0	47.2	45.7	44.4	43.4	42.9

Panel B: Rural areas, 2000-10				
	2000	2003	2006	2010
Poorest decile	41.7	33.5	31.1	34.8
2	39.1	34.5	30.6	34.8
3	39.5	35.6	31.6	34.8
4	40.8	37.5	33.6	36.7
5	42.8	38.6	34.9	37.4
6	41.4	37.4	35.5	37.8
7	42.3	40.7	36.0	38.6
8	44.3	40.2	38.4	39.2
9	44.1	42.3	39.7	40.0
Richest decile	46.1	43.8	42.5	42.6
Total	42.6	38.8	35.7	38.1

Panel C: National, 2000-10				
	2000	2003	2006	2010
Poorest decile	39.6	34.8	31.1	34.6
2	40.7	36.8	34.2	37.1
3	42.4	39.2	36.8	38.8
4	43.5	40.9	39.8	40.5
5	44.3	42.0	39.6	41.3
6	44.9	43.0	42.0	41.9
7	45.3	44.4	43.1	42.5
8	47.0	46.4	44.0	43.0
9	45.8	46.2	44.8	44.3
Richest decile	46.6	44.8	45.0	43.9
Total	44.6	42.4	40.6	41.3

Source: Based on INEC (Employment and Unemployment Survey) (various years).