

Gachet, Iván; Grijalva, Diego F.; Ponce, Paúl; Rodríguez, Damián

Working Paper

Vertical and horizontal inequality in Ecuador: The lack of sustainability

WIDER Working Paper, No. 2016/106

Provided in Cooperation with:

United Nations University (UNU), World Institute for Development Economics Research (WIDER)

Suggested Citation: Gachet, Iván; Grijalva, Diego F.; Ponce, Paúl; Rodríguez, Damián (2016) : Vertical and horizontal inequality in Ecuador: The lack of sustainability, WIDER Working Paper, No. 2016/106, ISBN 978-92-9256-150-5, The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki, <https://doi.org/10.35188/UNU-WIDER/2016/150-5>

This Version is available at:

<https://hdl.handle.net/10419/161487>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



WIDER Working Paper 2016/106

Vertical and horizontal inequality in Ecuador

The lack of sustainability

Iván Gachet,¹ Diego F. Grijalva,² Paúl Ponce,³
and Damián Rodríguez⁴

October 2016

Abstract: We analyse vertical and horizontal inequality in Ecuador from a long-run perspective, as well as during and after the commodities boom. Using various data sources we show that Ecuador has made significant progress in reducing inequality, particularly since 2000. However, inequality has started to increase again starting in 2015. We provide preliminary evidence that the trend reversal is consistent with Ecuador's dependency on oil revenues. Once the commodities boom ended, government policies aimed at reducing inequality turned out to be unsustainable and inequality started to rise again.

Keywords: Ecuador, inequality, poverty, horizontal inequality, vertical inequality, commodities boom, sustainability

Acknowledgements: We thank UNU-WIDER for support. We also thank Carla Canelas, Rachel Gisselquist, and participants at the 'Group-based Inequalities: Patterns, Trends Within and Across Countries' project workshop in Helsinki for helpful comments and suggestions. All remaining errors are ours.

¹ International independent consultant, Quito, Ecuador; ² Universidad San Francisco de Quito USFQ, School of Economics and Instituto de Economía, Campus Cumbayá, Quito, Ecuador, corresponding author: dgrijalva@usfq.edu.ec; ³ Secretaría Nacional de Planificación y Desarrollo SENPLADES, Quito, Ecuador; ⁴ Université Paris 1 Panthéon-Sorbonne, Paris, France.

This study has been prepared within the UNU-WIDER project on 'The politics of group-based inequality—measurement, implications, and possibilities for change', which is part of a larger research project on 'Disadvantaged groups and social mobility'

Copyright © UNU-WIDER 2016

Information and requests: publications@wider.unu.edu

ISSN 1798-7237 ISBN 978-92-9256-150-5

Typescript prepared by Lesley Ellen.

The United Nations University World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development. The Institute began operations in 1985 in Helsinki, Finland, as the first research and training centre of the United Nations University. Today it is a unique blend of think tank, research institute, and UN agency—providing a range of services from policy advice to governments as well as freely available original research.

The Institute is funded through income from an endowment fund with additional contributions to its work programme from Denmark, Finland, Sweden, and the United Kingdom.

Katajanokanlaituri 6 B, 00160 Helsinki, Finland

The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

1 Introduction

Ecuador is and has been an unequal country. In 2000, the official income-based Gini coefficient reached 0.565 (SIISE, 2016a). Since then, however, and in line with the general trend observed in Latin America, vertical inequality in Ecuador has fallen significantly (Lustig and Lopez-Calva, 2010; Lustig et al., 2013; Ponce and Vos, 2014; ECLAC, 2016). According to SIISE (2016a), in 2014 its Gini coefficient was down to 0.467. Inequality between groups has also decreased during this period. For instance, the ratio of household per capita income between urban and rural households fell from 2.38 in 2005 to 1.69 in 2014.

The reduction in inequality – both vertical (i.e. at the individual level – VI) and horizontal (i.e. between groups – HI) – has been particularly strong since 2007. This coincides with the leftist government of President Rafael Correa and the associated switch in policies, including an increase in social spending, public employment, and cash transfers. Yet, this period also coincides with the peak of the commodities boom, which meant large windfalls for the Ecuadorian government.

The question that we ask in this paper is whether the recent reduction in inequality is sustainable over time, i.e. whether the relatively low inequality levels can be *maintained* in the future. Further reductions in inequality are increasingly difficult (e.g. it is more difficult to reduce the Gini coefficient from .45 to .44 than it is to reduce it from .55 to .54), and thus we do not expect the decline in inequality to continue. What we expect is for inequality to remain constant. We would also like to determine the extent to which the reduction in inequality is due to the commodities boom or to public policies. Given the simultaneity between them, however, it is difficult to disentangle the two effects, particularly because it is precisely the abundance of resources that allowed the government to implement its redistributive policies. Thus, we focus on the issue of sustainability in the face of the end of the commodities boom.

Following the fall in oil prices since the last quarter of 2014, there has been a deceleration in inequality reduction and, more recently, a reversal thereof. A similar dynamic has been observed regarding poverty and extreme poverty, as well as unemployment. At the macroeconomic level, the strong economic growth observed since 2008 – with the exception of 2009 – has morphed into a deep recession. The most recent forecast by the International Monetary Fund shows negative growth from 2016 until 2020 and a cumulative fall in GDP of almost 7% (International Monetary Fund, 2016). Public finances have deteriorated significantly, and private and public debt are on the rise.

Macroeconomic conditions in Ecuador are not expected to change in the near future. As a consequence, we show that the reduction in VI and HI will not be sustainable over time. Indeed, the most likely scenario given the economic slowdown is a rise in inequality over the next few years, leading to a loss of much of the progress obtained. While we present evidence in support of this argument, there is currently only limited data on the trend reversal. It is thus still possible that the change is only temporal. But, considering the current macroeconomic conditions and forecasts, it seems that the only way in which the reversal might be stopped is if there was an increase in the price of oil. Even this scenario,

however, is consistent with the notion that the observed reduction in inequality was possible only due to the oil boom, and hence, inherently unsustainable. Goderis and Malone (2011) provide cross-country evidence consistent with this view. They find that the reduction of inequality following a natural resource boom occurs only in the short-run, but disappears in the long-run.

Throughout the paper, we focus on measures of both vertical inequality (VI) and horizontal inequality (HI). Recent research highlights the relevance of each type of inequality for different outcomes. Thus, while Stewart (2000, 2008) provides evidence that HI plays a central role to explain humanitarian crises and conflict, Donoso et al. (2015) and Stewart (2016) show that VI is relevant to explain criminality. Consistent with this view, we believe that it is fundamental to complement the study of VI with an analysis of HI. Furthermore, as a middle point between aggregate VI and HI we also analyze within-group VI. This is important because, as argued by Stewart (2008) conflict is more likely to occur when intra-group differences are small, which gives cohesiveness to the group, while inter-group differences are large, which provides a clear notion of the “other”.

The contributions of the paper are threefold. First, we present a long-run review of VI and HI in Ecuador, and show the progress made during the period 1990–2014, and especially during the last commodities boom. Second, we provide empirical evidence of the lack of sustainability of the recent inequality reduction in Ecuador. Finally, we provide a political economy explanation for this result.

The paper is structured as follows. In the next section we discuss Ecuador’s long-term trends in VI and HI. Section three looks at the dynamics of inequality for the 2003–2016 period, and analyzes the links with the commodities boom and government’s policies. Section four provides a brief explanation for these results, and section five concludes.

2 Long-term trends of VI and HI in Ecuador

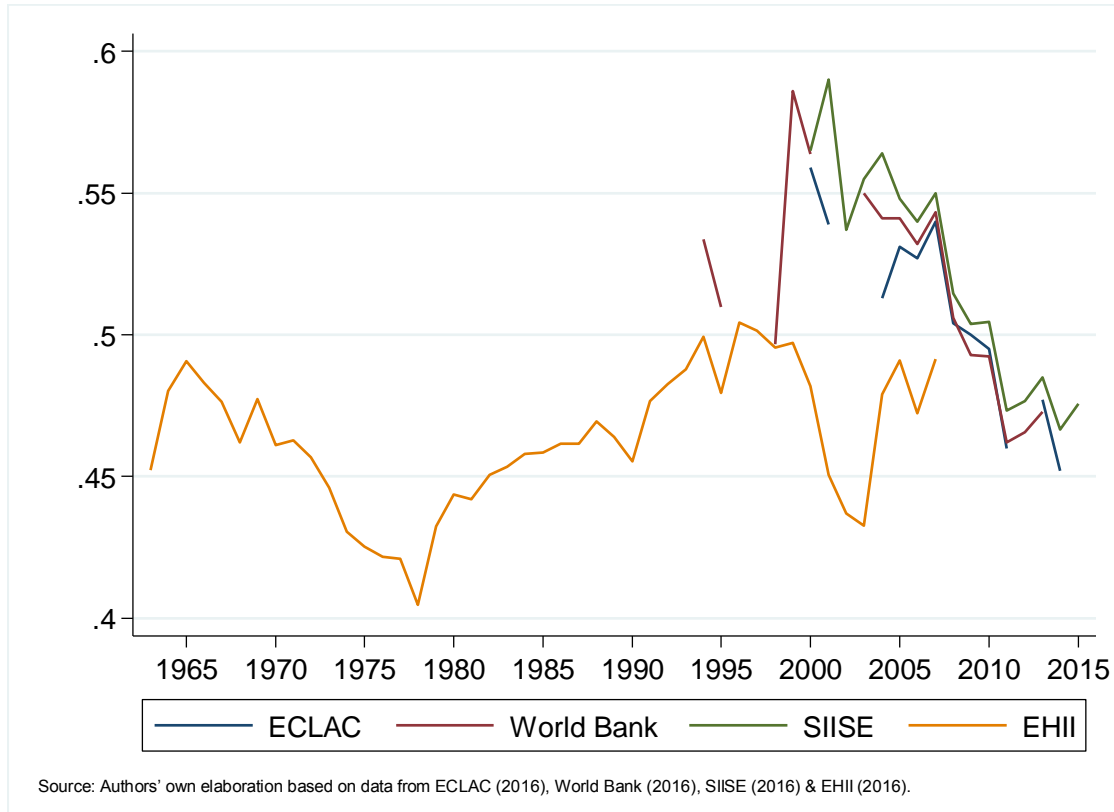
Ecuador is a Latin American middle-income country characterized by its geographic, economic, and ethnic diversity. In 2014, its human development index was 0.732, positioning it in the high human capital category (World Bank, 2016). Ecuador has experienced significant social and economic progress in recent years. GNI per capita reached 5,246 in 2015 (in 2010 PPP \$), compared to 3,413 in the year 2000 (World Bank, 2016). Inequality has fallen significantly as already mentioned in the introduction, and, in line with these indicators, poverty has also declined from 64.4% in 2000 to 22.5% in 2014 (SIISE, 2016a). To understand the significance of the recent progress regarding inequality in Ecuador, in this section we look at VI and HI from a long-term perspective.

2.1 Vertical inequality

Figure 1 provides VI measures for Ecuador for the 1963–2015 period. We include the Ecuadorian official series of income-based Gini coefficients (SIISE, 2016a), as well as Gini coefficients from ECLAC (2016) and World Bank (2016). These are survey-based data and thus provide reliable information; their main limitation is that national data are only

available for a few years before 2000. To complement these, we also include information from the University of Texas Inequality Project — EHII.¹

Figure 1: Inequality in Ecuador, 1963–2015



Inequality has varied significantly over time. Based on the EHII data, inequality fell during the 1970s. This is relevant for our analysis because the reduction in inequality during this period coincides with the *previous* commodities boom, and the start of oil extraction in Ecuador.² This dynamic is consistent with the experience of other countries in Latin America during these years (with the exception of Argentina, Chile and Uruguay) in which inequality also declined (Birdsall et al., 2011; Gasparini and Lustig, 2011).

At the beginning of the 1980s, the oil boom came to an end and Ecuador's rate of growth declined. The economic deceleration was associated with an increase in inequality, which at the end of the decade had reverted back to the level preceding the oil boom (see Figure 1). In the 1990s, inequality continued to rise amid adjustment policies and market-oriented reforms (Ponce and Vos, 2014). Towards the end of the decade, the floods caused by El Niño and the fall in oil prices led to an economic and financial crisis in 1999 (Gachet et al., 2011).

¹ The EHII database provides Gini coefficients for a large sample of countries over a long period of time. EHII uses data from UTIP-UNIDO and a regression of overlapping observations on the original dataset from Deininger and Squire (1996).

² Our analysis for this period is based on EHII data because there is no available official data.

The experience over these two decades is also reminiscent of the other Latin American countries, although there was more heterogeneity in the 1990s (Gasparini and Lustig, 2011).

Figure 1 shows that since 2000, inequality in Ecuador fell significantly. Data from SIISE (2016a), ECLAC (2016), and World Bank (2016) provide a similar picture of strong inequality decline. The EHII data show a decline starting *before* 2000, followed by an increase in the middle of the decade. The increase is also shown in the other databases, although it is less pronounced.³ The drop in the 2006–2014 period from a Gini coefficient of .540 to .467 (SIISE, 2016a) is remarkable as it implies a decline in the Gini coefficient of almost one point per year. The picture for Latin America is similar, although less pronounced: from 2002 to 2014 the Gini coefficient fell six points from 0.55 to 0.49 (ECLAC, 2016).

Several lessons follow from this brief analysis. First, inequality in Ecuador tends to fluctuate significantly over time once we look at a longer historical period. This means that the common notion of persistent inequality in Ecuador should be reconsidered. In particular, persistence does not seem to imply that inequality does not change, but that it tends to revert back to its original high levels. Second, inequality in Ecuador tends to follow more general regional trends. Third, and most importantly, this is not the first time that inequality has fallen in Ecuador, and when it occurred in the past – at least during the period for which we have data – it was precisely during the previous oil boom.

Some authors, looking at survey-based data, argue that the current reduction in inequality in Latin America constitutes a break with the region's history (Birdsall et al., 2011; Cornia, 2014; Lustig and Lopez-Calva, 2010; ECLAC, 2015). As shown above for the case of Ecuador, the fall in inequality – while remarkable – is consistent with the notion of a break with history only if we look back as far as the 1980s, which is the period for which there is consistent survey-based data. The evidence presented above for Ecuador as well as additional evidence provided by Gasparini and Lustig (2011) for other Latin American countries shows that inequality also fell during the 1970s.

The dynamics of inequality for Ecuador and Latin America seems at odds with the argument presented in Ross (2007) and Ross et al. (2012). According to these authors, revenue accruing from oil and minerals is often unequally distributed within countries because elites hold control over the resources and, as a consequence, tend to direct them towards their own benefit. Thus, contrary to our observations, a resource boom is expected to *increase* inequality. In light of this argument, Ecuador's recent reduction in inequality is indeed remarkable, and the reduction that took place during the 1970s even more so. In that decade the country was governed by a dictatorship and thus governing elites did not have political incentives to distribute oil revenues.

The fact that the abundance of resources does not automatically translate into a reduction in inequality highlights the relevance of the government's policies. Social spending (mainly in education), cash transfer programs and other government policies play

³ The reason for the difference may be that EHII, by using UNIDO data, captures only part of the economic activity, in particular the formal manufacturing sector.

an important role in reducing inequality (Tounta and Osueke, 2014). But, despite their contribution to the reduction in inequality, our interpretation of the historical evidence is that these policies are feasible only when revenues from resource booms become available. In Ecuador, the windfalls received have helped sustain strong economic and employment growth, which combined with increased social spending, government employment, and cash transfer programs, has led to a major fall in inequality. As shown in Figure 1, because resource booms are temporary, these reductions in inequality tend to be inherently unsustainable.

2.2 Horizontal inequality

HI is important in Ecuador because of its social, economic, and political cleavages. The Ecuadorian population is composed of an important fraction of indigenous and black people, who are concentrated in different parts of the country: blacks are located mainly in the Coast region, several indigenous groups are located in the Highlands, while others are located in the Coast or in the Amazon region. There are a total of nine indigenous nationalities (Pallares, 2002) distributed across the country. According to Alesina et al. (2003), ethnic fractionalization in Ecuador in 1989 was 0.6550, language fractionalization 0.1308 and religious fractionalization 0.1417. Likewise, according to Fearon (2003) cultural fractionalization in Ecuador was 0.48. These ethnic and cultural scores make Ecuador one of the most fractionalized countries in Latin America.

As argued by Stewart (2000), ethnicity and cultural differences are not the only relevant dimensions to define social cleavages; class or regional location may also matter. In our analysis we make an attempt to balance relevant cleavages with the availability of historical data and representativeness of the survey samples. We include four dimensions: ethnic, gender, area, and poverty, as explained below. Before turning to these dimensions, we present the databases used.

2.2.1 Inequality databases

We use three different sources of data, as shown in Table 1: national censuses (1990, 2001, and 2010), living standard measurement surveys (LSMSs) (1995, 1998, 1999, 2006, and 2014) and December Employment Surveys (ESs) (2003–2015).⁴ We also include ESs for March and June of 2015 and 2016. These are not comparable to the December ESs, but they provide information to analyze the recent reversal in inequality. We discuss each one of these sources in turn.⁵

⁴ In Ecuador, LSMSs are called “Encuesta de Condiciones de Vida (ECV)” and ESs are called “Encuesta Nacional de Empleo, Desempleo y Subempleo Urbano y Rural (ENEMDUR)”.

⁵ The working databases and all the Stata do files required to replicate this study are available online.

Table 1: Principal Databases, 1950–2016

Data	Implementation	Availability	Periodicity	Sample	Outcomes	Advantages	Limitations
Census	1950, 1964, 1974, 1982, 1990, 2001, 2010	1990, 2001, 2010	- Around every 10 years	All	- Education: Years of schooling and 6-point scale	- Possible to disaggregate for any group	- No information on income or consumption - No information on ethnic identification before 2001 - Not used to monitor or evaluate poverty and inequality
LSMS	1994, 1995, 1998, 1999, 2006, 2014	1995, 1998, 1999, 2006, 2014	- Dependent on availability of funds - Starting in 2014 every 4 years	N, U, R N, U, R N, U, R N, U, R, P N, U, R, P, C	- Education: Years of schooling and 6-point scale - Consumption	- Few methodological changes over time - 2006–2014 corresponds closely to the period of the commodities boom - Used to update consumption-based poverty lines - Information available during the 1999 crisis	- Can only make comparisons among groups at national, urban, and rural levels - No information on ethnic identification before 2006
ES	From 1987 onwards	1990, 1991, 1992–95, 1996–99, 2000–01, 2002, 2003, 2004, 2005, 2006, 2007–13, 2014–Present	Nov Nov Nov, Jul Nov Nov Nov Dec Mar, Nov Dec Nov Mar, Sep Jul, Dec Mar, Sep Jul, Dec	N, U, R U U U N, U, R U N, U, R N, U, R N, U, R U N, U, R N, U, R, P N, U, R, P, C	- Education: Years of schooling and 6-point scale - Income	- Covers the period of last commodities boom year by year - Used to monitor and evaluate poverty and inequality	- Methodological changes over time, most importantly in 2007 create comparability problems

N=National, U=Urban, R=Rural, P=Province, C=Main cities

Source: Authors' elaboration based on SIISE (2016b).

In Ecuador, seven censuses have been implemented (1950, 1964, 1974, 1982, 1990, 2001, and 2010), but complete data files are only available for the last three. Censuses have the advantage of covering the whole population, but at the cost of not acquiring much information. For our analysis, it is particularly relevant that they do not collect data on either income or consumption, which are the standard variables for measuring poverty and inequality.

“To categorize an individual as poor or non-poor in the censuses we use the concept of unsatisfied basic needs (UBN).⁶ To calculate inequality we use years of education.⁷”

It is important to note that official indicators used to monitor and evaluate poverty and inequality outcomes come from household surveys, and not from the censuses. In particular, poverty lines and official Gini coefficients in Ecuador are estimated using household surveys in which respondents provide detailed information about income or consumption.

Because of these limitations, we complement the censuses with two sets of surveys: the LSMSs and the ESs. Ecuador’s LSMSs collect information on many dimensions of household well-being such as housing characteristics, consumption, sources of income, some labor market characteristics, educational attainment, and access to public services, among others. These are used to assess household welfare, understand household behavior, compute consumption poverty lines and evaluate the effect of various government policies on living conditions. Six LSMSs have been conducted in the country (1994, 1995, 1998, 1999, 2006 and 2014), but complete databases are only available from 1995. Up to 1999, they are representative only at the national, urban and rural levels. The last two surveys are also representative at the provincial level and for the main cities. Besides having comparable information over time with little methodological changes, an important element of the LSMSs is that it is possible to calculate educational attainment in a similar way to the censuses. An additional advantage is that the 1998 and 1999 LSMSs provide information on the effects of the crisis on VI and HI. Furthermore, the years 1999–2014 coincide with the period of strong poverty and inequality reduction in Ecuador, with the change in government and also with the peak of the last oil boom. The main limitation of the LSMSs is that – especially for the older ones – the size of the sample does not allow for separating all ethnic groups or combining various grouping dimensions simultaneously (e.g. gender and ethnicity).

The ESs are national surveys currently carried out quarterly by Ecuador’s National Institute of Statistic and Censuses (INEC). The ESs cover a wide range of economic and socio-demographic information such as labor data, different sources of income, housing, migration, education, and other social indicators, and are mainly used to estimate labor market indicators (unemployment, underemployment, etc.) and poverty rates using income poverty lines. Up to 2002, ESs were conducted in December of each year for urban

⁶ According to the UBN approach, a person is classified as poor if he or she belongs to a household that is unable to satisfy its basic needs, including housing, health, education, and employment characteristics. UBN is used in the measurement of absolute poverty and extreme poverty in developing countries, but it is not used to estimate poverty lines. Still, in our discussion below, we include the UBN-based poverty categorization to have a long-run perspective on poverty.

⁷ Because censuses do not collect data on consumption and income, education is a common variable used for historical comparative analyses on inequality (see Gisselquist, 2015).

households only, with the exceptions presented in Table 1. Since then, their periodicity changed to quarterly for urban households, and twice a year (June and December) for rural households, excluding the Galapagos Islands before 2014. The ESs thus provide information representative at the national level from 2003, but we only use data since 2005 because we found inconsistencies with the 2003 and 2004 datasets.

2.2.2 Dimensions of analysis

Our emphasis regarding HI is on four dimensions that we think capture the most relevant aspects of between-group inequality in Ecuador:

1. Language (non-indigenous vs. indigenous), as a proxy for ethnic cleavages. This is a dichotomous variable defined as 1 if there is a person in the household who speaks an indigenous language and 0 otherwise. We highlight this variable in our analysis of ethnic cleavages because of comparability. It is not possible to have long series in either the censuses or the LSMSs using data on ethnic groups because self-reported identification is only available starting with the 2001 census and the 2006 LSMS.⁸
2. Gender (male vs. female).
3. Area (urban vs. rural).
4. Poverty (non-poor vs. poor). This variable is defined in a different way for censuses, LSMSs, and ESs. In the first case, it is based on unsatisfied basic needs (UBN), as explained above. In the LSMSs it is determined by a household consumption-based per capita poverty line, and in the ESs it is determined by a household income-based per capita poverty line. The latter is the official country poverty line.

Because we use education as our main variable to construct VI and HI measures for the full period, we focus our analysis on the sample of people 15 years of age and older.

Table 2 provides a first glance at VI and HI over time. It presents information based on all the censuses (the three columns on the left) and LSMSs (the five columns on the right) for which we have data. There are four panels showing the population division by language spoken, gender, living area, and poverty. In each case, the table shows the shares of the relevant groups in the population, and then the average years of education. In the case of LSMSs, it also shows the average consumption.

Let us first consider education. Consistent with the improvement observed worldwide (Barro and Lee, 2015), years of education in Ecuador have increased significantly at the aggregate level and also for every subgroup. This progress is concentrated in the last part of the period. Average years of education have increased by around two full years in the last quarter of a century.

⁸ This proxy is not without problems as we discuss below, but it enables a long-run perspective. The distinction between indigenous and non-indigenous is also used by Caumartin et al. (2008).

Table 2: Educational Attainment and Consumption, Censuses and LSMs, 1990–2014

	Censuses			LSMs				
	1990	2001	2010	1995	1998	1999	2006	2014
Total population	5,908,272	8,116,588	9,955,074	-	-	-	-	-
Sample size	-	-	-	16,677	16,583	16,550	35,947	73,229
Average years of education	7.06	7.53	8.88	7.53	7.77	7.85	8.38	9.16
Average consumption	-	-	-	44.64	39.73	34.33	59.90	192.87
Language								
Shares								
No indigenous language	0.97	0.93	0.94	0.95	0.95	0.93	0.97	0.96
Indigenous language	0.03	0.07	0.06	0.05	0.05	0.07	0.03	0.04
Average years of education								
No indigenous language	7.15	7.71	9.08	7.67	7.92	8.13	8.51	9.30
Indigenous language	3.52	5.05	6.11	4.76	4.93	4.05	4.72	5.84
Ratio (RAD)	2.03	1.53	1.49	1.61	1.61	2.01	1.80	1.59
Average consumption								
No indigenous language	-	-	-	45.43	40.62	35.67	61.25	197.25
Indigenous language	-	-	-	29.32	22.82	16.63	22.57	88.82
Ratio (RAD)	-	-	-	1.55	1.78	2.14	2.71	2.22
Gender								
Shares								
Male	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.48
Female	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.52
Average years of education								
Male	7.32	7.63	8.93	7.63	7.91	8.04	8.50	9.25
Female	6.81	7.44	8.85	7.44	7.63	7.67	8.27	9.09
Ratio (RAD)	1.07	1.03	1.01	1.02	1.04	1.05	1.03	1.02
Average consumption								
Male	-	-	-	44.02	38.83	33.79	59.18	193.85
Female	-	-	-	45.23	40.60	34.86	60.58	191.97
Ratio (RAD)	-	-	-	0.97	0.96	0.97	0.98	1.01
Area								
Shares								
Urban	0.70	0.75	0.75	0.62	0.59	0.62	0.66	0.69
Rural	0.30	0.25	0.25	0.38	0.41	0.38	0.34	0.31
Average years of education								
Urban	8.01	8.18	9.47	8.99	9.30	9.34	9.64	10.20
Rural	4.88	5.58	7.12	5.15	5.51	5.43	5.96	6.86
Ratio (RAD)	1.64	1.47	1.33	1.74	1.69	1.72	1.62	1.49
Average consumption								
Urban	-	-	-	55.34	50.83	43.14	73.06	225.57
Rural	-	-	-	27.24	23.54	20.23	34.78	120.38
Ratio (RAD)	-	-	-	2.03	2.16	2.13	2.10	1.87
Poverty								
Shares								
Non-poor	0.24	0.32	0.44	0.66	0.60	0.53	0.67	0.79
Poor	0.76	0.68	0.56	0.34	0.40	0.47	0.33	0.21
Average years of education								
Non-poor	10.51	10.37	11.00	8.78	9.28	9.73	9.64	9.88
Poor	5.90	6.13	7.20	5.13	5.45	5.70	5.81	6.54
Ratio (RAD)	1.78	1.69	1.53	1.71	1.70	1.71	1.66	1.51
Average consumption								
Non-poor	-	-	-	59.70	56.45	52.80	79.90	228.68
Poor	-	-	-	15.92	14.27	13.45	18.93	61.50
Ratio (RAD)	-	-	-	3.75	3.95	3.93	4.22	3.72

Source: Authors' estimation based on data from Ecuador's Censuses and LSMs, various years.

As expected, people who do not speak an indigenous language, men, people living in urban areas, and the non-poor have more years of education, although there is significant heterogeneity. For example, while in 2014 the difference in average years of education between people that do not speak an indigenous language and people that do, and also the difference between people living in urban areas vs. those living in rural areas is around 3.5 years, the difference between men and women is less than .16 years.

There has been more progress among disadvantaged groups (people who speak an indigenous language, women, people living in rural areas, and the poor). As a consequence, in every panel, the ratio of years of education of the advantaged group to the disadvantaged group (RAD) has fallen. The most significant variation occurs among groups classified by language spoken where the ratio falls from 2.03 to 1.53 based on the censuses. This means that, while in 1990 people who did not speak an indigenous language had 103% more years of education than people who did, they had only 53% more years of education in 2010. Likewise, the poverty panel shows that UBN-based poverty has fallen from 76% in 1990 to 56% in 2010. In line with this result, the gap in years of education between non-poor and poor has also declined significantly since 1990, with most of the progress occurring since 1999.

As mentioned before, the LSMSs also capture the year 1999 in which Ecuador suffered a serious economic and financial crisis. It is notable how between 1995 and 1999 the RAD increases for language, area, and poverty. The most dramatic change is the one based on language, where the RAD goes from 1.61 to 2.01. Indeed, there was a *decline* in average years of education between these years among people who speak an indigenous language and those living in rural areas. Some possible reasons for this are migration due to the impact of the crisis and also an actual change in the pattern of education accumulation, as people are forced to leave school. We think that a similar effect also takes place among the poor, but we do not observe it in the data because of the rise in the share of poor (0.47 in 1999 vs. 0.40 in 1998). As the people who fall into poverty presumably have more years of education than the poor, average years of education among the poor does not decline. Still, the drop in average years of education for some groups is troublesome considering that years of education at the individual level cannot fall. A reversal in the RAD for education thus shows how households facing an economic slowdown – at least in specific groups – sidestep their education.

The effect of the 1999 crisis is even clearer when we analyze household per capita consumption, which is also presented in Table 2. Consumption in 1999 fell for every group in every panel relative to 1998. Moreover, this occurs despite the fact that consumption already fell in 1998 relative to 1995, consistent with the slowdown of the economy. While the RAD for gender, poverty, and area did not change much between 1998 and 1999, the rise in the RAD for language (1.78 to 2.14) should be noted. This change means that consumption among indigenous language speakers fell even more than among speakers of a non-indigenous language.

In addition, in the language and poverty panels, the RAD increased between 1999 and 2006, falling only thereafter. This might occur because the disadvantaged groups tend to

recover from the crises more slowly, or it might reflect a change in policies after 2006. As mentioned above, the available data do not allow for disentangling the two effects.

With regard to consumption in the gender panel, it is notable that women tend to consume more than men ($RAD < 1$ in all years except 2014). This result is surprising because one would expect to find lower levels of consumption among women. This result, however, needs to be considered with caution because we are not comparing female-headed households with male-headed households. On the contrary, because we are looking at VI and HI we analyze the whole distribution of men and women.⁹

Comparing education and consumption, the consumption-based RADs tend to be higher than the corresponding education-based RADs, except for gender. This is intuitive as there can be much more variation in consumption than in education, and is most extreme in the case of poverty. On average, the consumption-based RAD in this panel was 3.9 (i.e. the non-poor consumed on average close to four times what the poor consumed), but the education-based RAD was only 1.66, which means that the non-poor had only 66% more years of education than the poor.

Finally, it is important to highlight the large increase in average consumption between 2006 and 2014. In this period, consumption expanded by a factor greater than 3.2 in the aggregate (and by a factor close to four for indigenous language speakers), while the CPI increased by around 40%.¹⁰ This rise in consumption is consistent with the large increase in resources during the oil boom.

Next, we turn to a more detailed analysis of vertical and horizontal inequality among groups. Table 3 shows aggregate Gini coefficients, within-group Gini coefficients, and group-based Gini coefficients (GGini) based on the censuses and the LSMSs. The main difference to Table 2 is that Gini coefficients look at the entire distribution and not only means, as with the RADs. As before, we include years of education for the censuses and LSMSs, and also household per capita consumption for the latter.¹¹

Looking at the data based on the censuses, the first notable result is the reduction in vertical inequality, especially during the period 2001–2010. The education-based Gini coefficient went from 0.38 in 1990 to 0.31 in 2010. The same trend can be observed in all disaggregated groups, except for the non-poor for whom there was an increase up to 2001 and a decrease thereafter. A similar reduction can be seen based on the LSMSs for the period 1995–2014.

Second, all disadvantaged groups show higher vertical inequality than the corresponding advantaged ones. This is important because it is a signal that there exists heterogeneity regarding education among disadvantaged groups and thus, that there might not be a strong cohesiveness among them. Third, in part because of the larger initial inequality among disadvantaged groups, inequality has fallen more among these groups than among the advantaged ones. The greatest difference is between people that do not

⁹ In countries like Ecuador where there are significant levels of migration abroad, we should also consider migration partners when comparing consumption levels between men- and women-headed households.

¹⁰ See <http://www.ecuadorencifras.gob.ec/historicos-ipc/> for historical data on the CPI.

¹¹ We computed similar tables based on the coefficient of variation and the Theil index, with very similar results. They are available from the authors upon request.

speak an indigenous language and those that do. While the Gini coefficient among the former fell from 0.37 to 0.31 over the period 1990–2010, it fell from .61 to .42 for the latter. Again, a similar dynamic can be observed based on the LSMs for the period 1995–2014. The education-based Gini coefficient fell from .34 to .29. Again, there were stronger declines for the disadvantaged ones, which still consistently face higher within-group inequality.

Table 3: Inequality and Group-weighted inequality, Censuses and LSMs, 1990-2014

	Censuses			LSMSs				
	1990	2001	2010	1995	1998	1999	2006	2014
Gini coef. Education	0.3777	0.3738	0.3148	0.3443	0.3312	0.3321	0.3171	0.2897
Gini coef. Consumption	-	-	-	0.4254	0.4451	0.4529	0.4569	0.4071
Language								
Years of education								
No indigenous language	0.3705	0.3634	0.3052	0.3344	0.3230	0.3146	0.3101	0.2825
Indigenous language	0.6072	0.5034	0.4228	0.5316	0.4719	0.5347	0.4757	0.4382
GGini	0.0171	0.0224	0.0194	0.0180	0.0183	0.0341	0.0152	0.0146
Consumption								
No indigenous language	-	-	-	0.4216	0.4416	0.4431	0.4505	0.4021
Indigenous language	-	-	-	0.4547	0.4367	0.4815	0.4814	0.3767
GGini	-	-	-	0.0168	0.0213	0.0364	0.0217	0.0217
Gender								
Years of education								
Male	0.3620	0.3648	0.3071	0.3342	0.3190	0.3164	0.3063	0.2803
Female	0.3926	0.3824	0.3220	0.3535	0.3426	0.3469	0.3271	0.2985
GGini	0.0178	0.0063	0.0023	0.0061	0.0091	0.0117	0.0070	0.0043
Consumption								
Male	-	-	-	0.4269	0.4454	0.4513	0.4561	0.4091
Female	-	-	-	0.4239	0.4444	0.4543	0.4574	0.4052
GGini	-	-	-	0.0068	0.0111	0.0078	0.0058	0.0024
Area								
Years of education								
Urban	0.3368	0.3481	0.2933	0.2868	0.2714	0.2703	0.2679	0.2501
Rural	0.4362	0.4246	0.3609	0.3825	0.3698	0.3802	0.3658	0.3438
GGini	0.0937	0.0648	0.0494	0.1199	0.1178	0.1178	0.0991	0.0780
Consumption								
Urban	-	-	-	0.4005	0.4177	0.4246	0.4325	0.3892
Rural	-	-	-	0.3677	0.3767	0.3973	0.4007	0.3553
GGini	-	-	-	0.1482	0.1656	0.1577	0.1439	0.1166
Poverty								
Years of education								
Non-poor	0.2497	0.2689	0.2416	0.2972	0.2770	0.2647	0.2742	0.2663
Poor	0.3980	0.3988	0.3467	0.3774	0.3592	0.3579	0.3437	0.3252
GGini	0.1197	0.1234	0.1056	0.1094	0.1183	0.1279	0.1006	0.0615
Consumption								
Non-poor	-	-	-	0.3419	0.3484	0.3463	0.3760	0.3539
Poor	-	-	-	0.1739	0.1902	0.2021	0.1783	0.1423
GGini	-	-	-	0.2213	0.2540	0.2855	0.2244	0.1459

Source: Authors' estimation based on data from Ecuador Censuses and LSMs, various years.

Between-group inequality (HI) has also decreased, but with important variations across dimensions. For language, it increased in the period 1990–2001 and then fell back to around

the same level by 2010. For gender, the GGini fell by around 87% during the same period. The largest decline in absolute terms occurred for area, where the GGini fell by 0.04 during this period. Looking at the LSMs, education-based HI also fell. As before, however, the crisis had a strong effect: HI increased in 1998 and 1999 relative to 1995 in all cases except for area, where it fell marginally.

Looking at consumption provides a more complete picture again. VI declined over the 1995–2014 period at the aggregate and also within groups, except for the non-poor. HI fell for gender, area, and poverty, but it actually *increased* for language. Interestingly, while education-based Gini coefficients are higher for disadvantaged groups, this is reversed in some cases for the consumption-based Gini coefficients. Most dramatically, the Gini for non-poor has been around twice as high as the one for the poor. It has also been higher in urban areas than in rural ones.

Looking at education and consumption together, it is important to note that the reduction in VI and HI did not occur during the whole period, but mainly in the period 2006–2014. Indeed, consumption-based VI was higher in all cases in 2006 than in 1995, and it fell only thereafter. The 1998–1999 crisis also contributed to this pattern. In all the dimensions analyzed, the 1999 levels of consumption-based VI and HI were higher than in 1995. Furthermore, as discussed above, the crisis seems to have had a stronger effect on VI among disadvantaged groups. For instance, consider the non-poor vs. poor in the period 1995–1999. While the Gini for the former group increased by less than .005, it increased by almost .3 for the latter. In percentage terms, these changes correspond to 1% and 16%, respectively. Thus, consumption VI tends to increase during the crisis, and even more so for disadvantaged groups. Consistent with this, HI also increased during the crisis: the consumption-based GGini was larger in 1998 and 1999 than in 1995 for all groups.

The long-run analysis of VI and HI shows that the recent dynamics of inequality are much more complex than a simple reduction over time. There has been great progress with regard to education since 1990, although the majority of this progress took place after 2000. In general, disadvantaged groups have reduced the educational gap and, particularly in the case of men and women, this gap has been almost completely closed. The crisis of 1999 did have an effect on the accumulation of education, especially among some disadvantaged groups, who seem to have faced more difficulties in recovering from it. With regard to consumption, most of the reduction in VI and HI occurred in the last period (2006–2014). Overall, there has been significant progress in reducing inequality. To further assess this progress, in the next section we turn to the analysis of VI and HI during the commodities boom, when most of the progress seems to have taken place.

3 VI and HI during and after the commodities boom

In this section we analyze the dynamics of VI and HI in the period 2005–2016 and its relationship with the commodities boom. We provide evidence that the trend of VI and HI reduction has been reversed and argue that inequality will continue to increase in the near future.

3.1 Dynamics of VI and HI

Table 4 provides data on years of education and household per capita income for the period 2005–2016 based on the ESs. We include December data for the years 2005–2015, and first and second quarters (March and June) data for 2015–2016. December data is comparable for these years, but there are some limitations with 2012 due to sampling errors in that year. Because we wish to look at the recent changes in inequality we present information for the latest available periods and include the corresponding periods in 2015 for comparability. We focus the analysis on income, as this is the variable on which official poverty lines, poverty, and vertical inequality indicators are constructed in Ecuador.

The first aspect that we note is the very large increase in income over the 2005–2015 period. Income increased by 91%, while the CPI increased by 58%.¹² This implies an increase in real income of over 20% in 12 years. Likewise, over these years, average years of education increased by more than 1 year.

Consider next the evolution of VI and HI over this period. Because we look at consecutive years, changes are more nuanced than in the analysis of the previous section. Despite this fact, we are able to establish various general patterns in line with the evidence presented above.

Let us first look briefly at education. Consistent with the general trend, average years of education increased almost monotonically over the period for each group, except in the poverty panel. Indeed, in this case, it might seem that not much progress has been made, particularly among the non-poor. However, this is explained in large part by the fall in poverty. Over the period, the share of poor fell from 0.37 to 0.19. This means that many people exited poverty. Because the poor tend to be less educated than the non-poor, the inclusion of the former in the non-poor pushes *down* average years of education among this group. Furthermore, if the former poor are on average more educated than the remaining poor – which seems likely – their exit also pushes *down* average years of education among the poor. Thus, the progress in average years of education shown in the poverty panel provides a lower bound for the actual improvement.

Regarding the education-based RADs, there is a slow but consistent decline, particularly after 2012. The decline for gender is limited because the educational gap between men and women at the beginning of the period was already very small (.21 years). By 2015, it fell to 0.08 years, and the data for 2016 show essentially no gap. This is an important milestone regarding gender inequality, as it means that women are acquiring a very similar level of education as men.

¹² See <http://www.ecuadrencifras.gob.ec/historicos-ipc/> for historical data on the CPI.

Table 4: Educational Attainment and Income, ESs

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015.I	2015.II	2016.I	2016.II
Sample Size	52,041	52,605	51,818	54,092	5,692	59,108	50,408	54,073	56,686	80,847	78,106	42,621	79,811	40,695	40,759
Average years of education	8.41	8.43	8.51	8.57	8.63	8.73	8.82	8.97	9.13	9.18	9.45	9.17	9.26	9.54	9.46
Average Income	132.43	149.32	161.31	163.15	161.08	180.52	192.32	210.01	229.84	240.92	253.45	223.12	243.75	247.18	244.25
Language															
Shares															
No indigenous language	0.94	0.94	0.94	0.94	0.94	0.94	0.93	0.94	0.94	0.94	0.93	0.94	0.93	0.93	0.93
Indigenous language	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.06	0.07	0.06	0.07	0.07	0.07
Average years of education															
No indigenous language	8.60	8.62	8.70	8.76	8.82	8.95	9.04	9.20	9.30	9.33	9.65	9.34	9.44	9.73	9.63
Indigenous language	5.61	5.54	5.57	5.70	5.79	5.80	6.08	5.63	6.62	7.06	6.96	6.69	6.71	7.00	7.11
Ratio (RAD)	1.53	1.56	1.56	1.54	1.52	1.54	1.49	1.63	1.40	1.32	1.39	1.40	1.41	1.39	1.36
Average income															
No indigenous language	136.12	154.01	165.78	167.71	165.89	186.39	198.85	216.20	235.79	247.31	262.41	229.48	251.64	256.00	252.48
Indigenous language	76.91	76.11	94.09	93.74	90.80	96.76	109.46	118.45	139.55	145.68	135.25	130.91	136.51	129.73	131.97
Ratio (RAD)	1.77	2.02	1.76	1.79	1.83	1.93	1.82	1.83	1.69	1.70	1.94	1.75	1.84	1.97	1.91
Gender															
Shares															
Male	0.49	0.49	0.49	0.48	0.49	0.49	0.48	0.48	0.49	0.48	0.49	0.48	0.48	0.48	0.48
Female	0.51	0.51	0.51	0.52	0.51	0.51	0.52	0.52	0.51	0.52	0.51	0.52	0.52	0.52	0.52
Average years of education															
Male	8.51	8.57	8.62	8.67	8.72	8.85	8.91	9.07	9.22	9.24	9.49	9.23	9.27	9.53	9.47
Female	8.30	8.30	8.40	8.47	8.54	8.63	8.74	8.87	9.05	9.11	9.41	9.11	9.25	9.55	9.46
Ratio (RAD)	1.02	1.03	1.03	1.02	1.02	1.03	1.02	1.02	1.02	1.01	1.01	1.01	1.00	1.00	1.00
Average income															
Male	133.62	151.63	166.78	166.33	164.60	185.23	197.13	215.30	237.29	249.87	261.71	226.83	250.87	252.90	250.14
Female	131.28	147.10	156.11	160.18	157.77	176.06	187.83	205.06	222.75	232.54	245.66	219.65	237.06	241.86	238.76
Ratio (RAD)	1.02	1.03	1.07	1.04	1.04	1.05	1.05	1.05	1.07	1.07	1.07	1.03	1.06	1.05	1.05

Table 4 – continued from previous page

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015.I	2015.II	2016.I	2016.II
Area															
Shares															
Urban	0.68	0.68	0.68	0.68	0.68	0.68	0.67	0.67	0.69	0.69	0.70	0.69	0.69	0.69	0.70
Rural	0.32	0.32	0.32	0.32	0.32	0.32	0.33	0.33	0.31	0.31	0.30	0.31	0.31	0.31	0.30
Average years of education															
Urban	9.73	9.70	9.79	9.80	9.88	10.00	10.13	10.28	10.19	10.04	10.39	10.09	10.21	10.49	10.40
Rural	5.58	5.71	5.77	5.94	5.98	6.07	6.11	6.26	6.77	7.22	7.29	7.09	7.10	7.38	7.31
Ratio (RAD)	1.74	1.70	1.70	1.65	1.65	1.65	1.66	1.64	1.51	1.39	1.43	1.42	1.44	1.42	1.42
Average income															
Urban	162.27	180.21	198.1	198.4	195.32	219.55	229.95	253.20	270.8	275.5	290.05	258.63	280.74	292.12	283.12
Rural	68.22	83.00	81.72	87.54	90.09	98.94	114.41	122.00	139.1	162.8	170.03	143.07	160.24	145.03	155.10
Ratio (RAD)	2.38	2.17	2.43	2.27	2.17	2.22	2.01	2.08	1.95	1.69	1.71	1.81	1.75	2.01	1.83
Poverty															
Shares															
Non-poor	0.63	0.68	0.68	0.70	0.69	0.72	0.75	0.76	0.79	0.81	0.81	0.80	0.81	0.78	0.80
Poor	0.37	0.32	0.32	0.30	0.31	0.28	0.25	0.24	0.21	0.19	0.19	0.20	0.19	0.22	0.20
Average - Years of Education															
Non-poor	9.67	9.58	9.55	9.59	9.49	9.56	9.60	9.67	9.76	9.65	9.98	9.69	9.74	10.15	10.00
Poor	6.27	6.04	6.25	6.20	6.49	6.53	6.39	6.51	6.72	7.04	7.14	7.08	7.03	7.31	7.23
Ratio (RAD)	1.54	1.59	1.53	1.55	1.46	1.46	1.50	1.49	1.45	1.37	1.40	1.37	1.39	1.39	1.38
Average income															
Non-poor	191.25	204.38	219.7	216.6	215.57	234.85	240.49	260.99	277.2	283.8	301.59	266.50	286.84	300.98	291.10
Poor	31.45	34.45	34.90	38.41	40.71	43.09	45.99	47.46	51.23	53.56	53.99	52.63	54.91	51.96	54.79
Ratio (RAD)	6.08	5.93	6.30	5.64	5.30	5.45	5.23	5.50	5.41	5.30	5.59	5.06	5.22	5.79	5.31

Source: Authors' elaboration based on data from Ecuador ESs, various years.

Turning to income, we see a similar story as with education, but the data show early signs of a reversal in the last year and a half. First, there was a strong increase in income for every group until 2014. Since then, incomes for comparable months have continued to increase for advantaged groups and for women, but not for other groups. People who speak an indigenous language already experienced a decline in average income between 2014 and 2015, and a similar dynamic occurred during the first and second quarter comparison between 2015 and 2016. Likewise, rural households' income fell between the second quarter of 2015 and the same period of 2016, and a similar trend is observed for the poor in the first and second quarter comparisons. These dynamics are reflected in the RADs for language, area, and poverty, which in each case *increased* in the last three comparison periods (December 2014–2015, March 2015–2016, and June 2015–2016). We believe that the dynamics in the last year and a half, while subtle, provide early signals of a change in the trend of inequality.

Table 5 provides further information on the period 2005–2016, including measures of VI and HI. With regard to education, the pattern of VI and HI is also one of consistent decline until 2014. After this, only in the case of gender do we observe a continuation of the trend. In the other three panels, there are initial signs of a reversal, although as explained above, these are still marginal.

With regard to per capita income, there is also a pattern of decline of VI at the aggregate level and for all groups until 2014. HI also fell, especially in the cases of poverty and area. The most interesting dynamic, however, appears at the end of the sample. Between 2014 and 2015 we observe an *increase* in income-based VI and HI. Moreover, the increase in within-group VI tended to be greater among disadvantaged groups. For instance, while the Gini coefficient for non-indigenous speaking people increased from .4601 to .4667 between these years, for indigenous speaking people it went from .4751 to .4837. In line with this change, HI increased from 0.0244 to .0323. A similar pattern is reproduced during the last three periods of comparison for all panels, with some exceptions.

We conclude that for the most part the cleavages along the four dimensions analyzed have been reduced during the last 25 years. All databases show a consistent story along this line, be it in terms of educational attainment, consumption or income. However, consistent with our hypothesis, using the most recent data we showed that there are initial signs of a trend reversal. Given the economic prospects for the years 2016–2020, and considering the effects of crises on VI and HI shown in the previous section, we expect inequality to increase in the near future. As a consequence, the progress achieved in the last decades will be seriously challenged.

Table 5: Gini and Group-weighted Gini, ESs

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015.I	2015.II	2016.I	2016.II
Gini coef. Education	0.3208	0.3167	0.3175	0.3136	0.3137	0.3114	0.3051	0.3040	0.2898	0.2770	0.2708	0.2752	0.2740	0.2697	0.2704
Gini coef. Income	0.5450	0.5378	0.5493	0.5088	0.5026	0.5028	0.4704	0.4757	0.4802	0.4639	0.4728	0.4499	0.4585	0.4825	0.4639
Language															
Years of Education															
No indigenous language	0.3102	0.3065	0.3073	0.3031	0.3034	0.2998	0.2931	0.2913	0.2811	0.2702	0.2616	0.2672	0.2653	0.2616	0.2629
Indigenous language	0.4678	0.4575	0.4507	0.4535	0.4496	0.4488	0.4343	0.4656	0.3938	0.3557	0.3643	0.3736	0.3735	0.3566	0.3552
GGini	0.0205	0.0205	0.0215	0.0208	0.0207	0.0218	0.0224	0.0230	0.0166	0.0143	0.0183	0.0173	0.0187	0.0186	0.0170
Income															
No indigenous language	0.5419	0.5351	0.5434	0.5021	0.4955	0.4970	0.4636	0.4684	0.4761	0.4601	0.4667	0.4436	0.4526	0.4771	0.4578
Indigenous language	0.5460	0.5011	0.5966	0.5709	0.5619	0.5273	0.4944	0.5363	0.4927	0.4751	0.4837	0.4886	0.4730	0.4775	0.4819
GGini	0.0261	0.0295	0.0259	0.0264	0.0275	0.0301	0.0309	0.0269	0.0236	0.0244	0.0323	0.0265	0.0300	0.0331	0.0313
Gender															
Years of Education															
Male	0.3129	0.3046	0.3100	0.3035	0.3039	0.3008	0.2931	0.2929	0.2794	0.2687	0.2604	0.2641	0.2661	0.2617	0.2615
Female	0.3284	0.3282	0.3247	0.3228	0.3227	0.3214	0.3161	0.3143	0.2996	0.2847	0.2804	0.2854	0.2812	0.2769	0.2785
GGini	0.0058	0.0082	0.0065	0.0059	0.0054	0.0063	0.0049	0.0057	0.0047	0.0036	0.0020	0.0031	0.0006	0.0005	0.0003
Income															
Male	0.5410	0.5362	0.5544	0.5063	0.5027	0.5047	0.4693	0.4743	0.4798	0.4656	0.4743	0.4479	0.4616	0.4854	0.4628
Female	0.5488	0.5392	0.5438	0.5111	0.5022	0.5008	0.4713	0.4768	0.4800	0.4617	0.4709	0.4516	0.4552	0.4795	0.4646
GGini	0.0044	0.0076	0.0165	0.0094	0.0106	0.0127	0.0121	0.0122	0.0158	0.0180	0.0158	0.0080	0.0142	0.0112	0.0116

Table 5 – continued from previous page

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015.I	2015.II	2016.I	2016.II
Area															
Years of Education															
Urban	0.2674	0.2644	0.2660	0.2646	0.2632	0.2604	0.2470	0.2477	0.2493	0.2459	0.2342	0.2422	0.2390	0.2340	0.2358
Rural	0.3772	0.3746	0.3721	0.3673	0.3704	0.3688	0.3817	0.3759	0.3413	0.3188	0.3237	0.3164	0.3187	0.3201	0.3183
GGini	0.1058	0.1021	0.1026	0.0980	0.0986	0.0983	0.0999	0.0984	0.0803	0.0655	0.0694	0.0697	0.0715	0.0692	0.0689
Income															
Urban	0.5209	0.5065	0.5196	0.4776	0.4807	0.4844	0.4396	0.4442	0.4649	0.4558	0.4520	0.4279	0.4429	0.4624	0.4443
Rural	0.4957	0.5217	0.5122	0.4800	0.4550	0.4381	0.4570	0.4580	0.4361	0.4327	0.4752	0.4428	0.4396	0.4486	0.4480
GGini	0.1538	0.1411	0.1570	0.1478	0.1421	0.1457	0.1319	0.1370	0.1228	0.0997	0.1001	0.1104	0.1050	0.1263	0.1107
Poverty															
Years of Education															
Non-poor	0.2796	0.2771	0.2828	0.2778	0.2850	0.2838	0.2747	0.2762	0.2700	0.2634	0.2538	0.2598	0.2595	0.2521	0.2541
Poor	0.3516	0.3505	0.3517	0.3529	0.3469	0.3482	0.3643	0.3591	0.3232	0.3033	0.3061	0.3049	0.3015	0.2991	0.3041
GGini	0.0940	0.0920	0.0839	0.0830	0.0752	0.0706	0.0681	0.0646	0.0552	0.0432	0.0471	0.0460	0.0444	0.0505	0.0466
Income															
Non-poor	0.4439	0.4522	0.4650	0.4219	0.4163	0.4235	0.3939	0.3999	0.4185	0.4070	0.4119	0.3857	0.4013	0.4137	0.4023
Poor	0.2579	0.2338	0.2428	0.2356	0.2319	0.2179	0.2178	0.2255	0.1977	0.1973	0.2158	0.2138	0.1985	0.2317	0.2132
GGini	0.2807	0.2492	0.2478	0.2294	0.2329	0.2157	0.1884	0.1848	0.1629	0.1450	0.1530	0.1550	0.1439	0.1706	0.1538

Source: Authors' elaboration based on data from Ecuador ESs, various years.

3.2 Effects of the commodities boom

The evidence presented so far shows that Ecuador has reduced its VI and HI in the last decades. In some cases, as in gender and area, existing cleavages have been reduced significantly. However, the data presented in the last section also show the first signs of a reversal, both in terms of VI and HI.

In this section we look at Ecuador's experience with the commodities boom and argue that the recent reduction in inequality, while remarkable, was dependent on the windfalls obtained from the oil boom. To see the context in which the reduction in VI and HI took place, Table 6 summarizes the main macroeconomic, social, and public sector indicators of Ecuador for the period 2005–2015.

Since 2005, GDP growth in Ecuador has been very strong, with the exception of 2009 and 2015. As can be seen from the real price of oil and the terms of trade, these are precisely the years in which external conditions became unfavorable for Ecuador. Indeed, for the period 2005–2015, the correlation between the real price of oil growth and GDP growth has been 0.74. During this period, as already discussed, poverty and inequality fell significantly.

As can be seen in Table 6, the recovery following the first drop in oil prices in 2009 was sharp, as the shock turned out to be only temporary. Following the decline, the real price of oil reached a peak in 2011, while the terms of trade reached a peak in 2013. In spite of this, the initial shock already changed the macroeconomic structure of Ecuador. The trade balance, which had been positive since 2005, became negative in 2009, and remained negative until 2015. The clearest effects took place in the public sector. The primary surplus became negative in 2009 and shifted from a peak of 4.83% of GDP in 2006 to -4.25% in 2014 and -3.76 in 2015. The financing needs shifted from -2.91% in 2006 to 5.29% in 2014 and 5.05% in 2015. Public internal and external debt, which had reached a minimum in 2009, have doubled since then, and continue to increase in 2016.

These macroeconomic changes have important consequences for the mechanisms that help reduce inequality, as we explain in detail below. The social policies panel in Table 6 provides a first look at these. Public social spending as a percentage of GDP has increased monotonically over the period 2005–2013, more than doubling between these years. After that, however, it started to decline falling more than one percentage point. Spending in the cash transfers program also increased starting in 2008 reaching a peak of 10.86% in 2013, but it declined significantly thereafter.¹³ Indeed, in 2015, the cash transfer program represented a smaller fraction of GDP than it did in 2008. While the decline in spending on the cash transfers program follows in large part the better targeting implemented starting in 2013, the fact that this was not done before shows the largess with which the government spent the available resources. Finally, going back to the economic and social results panel, we can see that poverty, extreme poverty, and inequality, all increased between 2014 and 2015.

¹³ There are no official data on spending in the cash transfers program before 2008.

Table 6: Macroeconomic Indicators, 2005–2015

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GDP (1000s USD)	41,507.09	46,802.04	51,007.78	61,762.64	62,519.69	69,555.37	79,276.66	87,924.54	95,129.66	102,292.26	100,176.81
Economic and social results											
GDP growth (%)	5.29	4.40	2.19	6.36	0.57	3.53	7.87	5.64	4.95	3.99	0.16
Real price of oil	50.05	60.00	68.80	91.78	58.31	78.57	102.77	101.82	97.80	84.77	42.13
Terms of trade	85.39	91.71	94.12	102.85	91.67	100.00	109.61	110.93	112.07	111.64	84.13
Trade Balance (% of GDP)	1.28	3.10	2.77	1.75	-0.37	-2.84	-1.05	-0.50	-1.13	-0.71	-2.13
Share of primary products in exports	0.78	0.77	0.74	0.76	0.76	0.77	0.78	0.77	0.81	0.84	0.79
Poverty (% of population)	42.20	37.60	36.70	35.10	36.00	32.80	28.60	27.30	25.60	22.50	23.30
Extreme poverty (% of population)	21.60	16.90	16.50	15.70	15.40	13.10	11.60	11.20	8.60	7.70	8.50
Income-based Gini Coefficient	0.54	0.54	0.55	0.51	0.50	0.50	0.47	0.47	0.48	0.46	0.47
Public sector											
Primary surplus NFPS (% of GDP)	2.58	4.83	4.43	1.70	-3.01	-0.76	0.51	-0.20	-3.55	-4.51	-3.91
External debt NFPS (% of GDP)	26.14	21.83	20.85	16.34	11.82	12.47	12.68	12.36	13.57	17.15	20.28
Internal debt Central Gov (% of GDP)	9.91	7.85	6.35	5.90	4.55	6.71	5.68	8.85	10.47	12.44	12.66
Financing (% of GDP)	-0.64	-2.91	-2.74	-0.56	3.57	1.36	0.13	0.94	4.57	5.59	5.35
Tax income (% of GDP)	10.17	10.43	10.77	10.97	11.52	11.21	11.36	12.14	12.61	13.35	14.67
Expenditure on wages and salaries (% of GDP)	7.00	6.76	7.24	7.88	9.48	9.76	9.16	9.49	9.35	9.96	10.41
Social policies											
Social spending (% of GDP)	4.17	4.22	5.29	6.30	7.78	7.97	8.00	8.25	9.69	9.14	8.47
Cash transfers (% of GDP)	-	-	-	7.24	8.59	9.64	9.18	8.67	10.86	8.05	6.52

Source: Authors' elaboration based on data from Banco Central del Ecuador (2016a), Banco Central del Ecuador (2016b), and ECLAC (2016).

Considering this context, we now turn to an analysis of the causes of the reduction in inequality. There are several possible mechanisms, which we discuss in turn.

Following Gasparini et al. (2016), the first reason for the reduction in inequality is the recovery following a crisis. As these authors mention, the crises at the end of the 1990s in Latin America led to increases in inequality, which were reverted during the recovery. But, once the recovery took hold, the equalizing effect ended. This might seem consistent with the Ecuadorian experience and the crisis of 1999, and indeed we do have evidence of an increase in VI and HI during the crisis (see Table 3) and a decline thereafter (see Figure 1). However, if this is the case, the dynamic ended during the first half of the 2000s. The strongest reduction in VI and HI occurred from 2007 until 2014 (see Figure 1 and Table 5), and thus the argument explains only part of the Ecuadorian experience.

An additional argument is that the reduction in inequality comes from changes in the labor market. First, the (previous) expansion of education should reduce the earnings gap between skilled and unskilled workers due to the increased supply of the former (Lustig and Lopez-Calva, 2010; Lustig et al., 2013; Ponce and Vos, 2014). Second, government may use public employment as a means of redistributing income when other tax-based redistribution mechanisms are more difficult to implement (Alesina et al., 2000). Third, associated with the commodities boom and the availability of resources, employment and minimum salaries may rise.

Table 7 provides evidence on these mechanisms. It portrays the rise in the minimal nominal wage, and it also provides data on two dimensions of employment, public vs. private, and skilled vs. unskilled.

There has been a strong rise in the minimum wage, far above the increment in the CPI.¹⁴ Between 2005 and 2015 the minimum wage increased by 136%, while the CPI rose by 51%, implying an increment in the real minimum salary of 57%. Likewise, there has been a significant reduction in unemployment, although in line with the discussion on VI and HI, it started to increase in 2015.

Between 2005 and 2015 the share of public employment increased by 2.34 percentage points, which might seem small, but represents an increment of 29%. Salaries in the public and private sectors seem to have increased in the same proportion.

Finally, regarding skilled vs. unskilled employees, there does not seem to have been a change in the share of employees along this dimension, which appears to contradict the notion that a commodities boom should favor unskilled labor. However, consistent with the argument of Lustig and Lopez-Calva (2010), Lustig et al. (2013), and Ponce and Vos (2014), the ratio of skilled to unskilled average and median wages has fallen over the period, although with significant fluctuations.

Table 7 thus shows that the mechanisms mentioned above have actually taken place in Ecuador during recent years. Faced with a reduction in resources and an economic slowdown, these mechanisms for inequality reduction, are not likely to continue in the future (Lustig et al., 2013; Ponce and Vos, 2014).

¹⁴ The values for the minimum wage incorporate two additional salaries that employees in Ecuador are entitled to.

Table 7: Labor market mechanisms of inequality reduction, 2005-2016

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015.I	2015.II	2016.I	2016.II
Minimum nominal salary	174.90	186.60	198.26	233.13	254.21	279.85	307.83	340.47	370.82	396.51	412.90	412.90	412.90	426.92	426.92
PCI (2014=100)	69.06	71.04	73.40	79.88	83.32	86.09	90.75	94.53	97.08	100.64	104.05	102.28	103.74	104.65	105.38
National unemployment (%)	-	-	5.00	5.95	6.47	5.02	4.21	4.12	4.15	3.80	4.77	3.84	4.47	5.71	5.32
Employment															
Shares															
Public	0.08	0.08	0.08	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.10	0.10	0.11	0.10
Private	0.92	0.92	0.92	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.89	0.90	0.90	0.89	0.90
Average labor income															
Public	242.32	280.33	305.65	315.35	327.76	359.86	385.01	402.84	436.21	477.35	482.09	442.16	475.71	497.71	476.76
Private	123.69	137.14	148.03	152.48	148.05	166.66	178.03	201.31	217.50	222.66	235.66	204.01	223.07	222.83	221.11
RAD	1.96	2.04	2.06	2.07	2.21	2.16	2.16	2.00	2.01	2.14	2.05	2.17	2.13	2.23	2.16
Median labor income															
Public	179.00	187.20	228.75	241.75	247.67	260.00	300.00	320.80	344.00	358.60	374.29	355.67	360.25	375.00	365.00
Private	74.25	83.33	84.29	98.83	97.50	108.89	125.00	140.00	145.00	155.00	160.00	150.00	159.25	150.00	153.33
RAD	2.41	2.25	2.71	2.45	2.54	2.39	2.40	2.29	2.37	2.31	2.34	2.37	2.26	2.50	2.38
Skill Level															
Shares															
Skilled	0.16	0.17	0.17	0.17	0.16	0.18	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Unskilled	0.84	0.83	0.83	0.83	0.84	0.82	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Average labor income															
Skilled	260.97	272.48	313.19	300.92	288.93	332.36	315.22	349.75	409.06	417.39	438.17	376.23	424.31	439.96	414.22
Unskilled	91.91	104.30	109.63	115.85	113.99	124.52	141.96	156.07	163.12	175.45	181.13	164.60	174.24	165.72	170.13
RAD	2.84	2.61	2.86	2.60	2.53	2.67	2.22	2.24	2.51	2.38	2.42	2.29	2.44	2.65	2.43
Median labor income															
Skilled	173.75	185.00	196.67	204.00	198.50	222.00	235.00	250.00	288.00	282.50	306.67	276.75	298.00	303.33	298.00
Unskilled	60.00	68.60	69.00	78.67	80.00	88.00	101.60	113.50	116.67	130.00	133.00	126.00	132.50	122.67	125.25
RAD	2.90	2.70	2.85	2.59	2.48	2.52	2.31	2.20	2.47	2.17	2.31	2.20	2.25	2.47	2.38

Source: Authors' elaboration based on data from ES surveys, various years.

A final mechanism for reducing inequality is to increase government transfers to the poor (Lustig and Lopez-Calva, 2010; Lustig et al., 2013; Ponce and Vos, 2014), as well as social security and retirement pensions. In Ecuador, a cash transfer program began in 1998, and it was continuously expanded until 2013.¹⁵ Until 2005, the grant was around USD15 per month.¹⁶ Starting in 2007, the government has raised its value three different times: to USD30 in 2007, USD35 in 2009, and USD50 in 2013. In line with these increments, the number of beneficiaries also increased dramatically over time. According to estimations based on the LSMS-2014, in 1998, there were close to 190,000 beneficiaries, but in 2013, the number reached over 1.57 million. Since this peak, the government has reduced the number of beneficiaries, as discussed previously.

To see the effects of the cash transfer program, in Table 8 we show the results of a decomposition of income inequality by source for the period 2005–2016, based on the methodology proposed by Lerman and Yitzhaki (1985).¹⁷ We separate sources of income into labor, capital, remittances, cash transfers, and other sources of income.¹⁸ Furthermore, we provide estimations of each component's marginal effect on inequality.

The first aspect to note is that the shares of the different sources of income have changed during the period. Labor income share has fallen since 2005 by 2–3 percentage points, and the results for 2016 show a further decline. Likewise, the share of capital income has fallen, although not as much. Consistent with the economic recession in the developed countries, the share of remittances has also declined since 2008. Cash transfers have become more important over time, representing more than 3% of income at the peak in 2013. Moreover, the changes are in line with the increments in the value of the grant in 2007, 2009, and 2013. Consistent with the decline in beneficiaries, the share of cash transfers has fallen since 2013. Finally, the share of other sources of income has increased by around four percentage points over the period, consistent with the expansion of social security benefits and retirement pensions.

In general, remittances and cash transfers have an equalizing effect, while labor, capital and other sources of income contribute to increases in inequality. The marginal effect of labor income lies between 0.01 and 0.02 for most of the period and is significant in most years. This range implies that a 1% increase in labor income is associated with a 1 to 2% *increase* in the Gini coefficient. The effect of capital income is similar in magnitude, although with more precise coefficients. Remittances have a much smaller effect. An increase of 1% in this component leads to a fall in the Gini coefficient of 0.1 to 0.3%. Cash transfers, on the other hand, have a much stronger effect, reducing the Gini coefficient by 2.5 to 4.5% for an increase in 1%.

¹⁵ The program is currently called “human development bond” (BDH for its Spanish acronym).

¹⁶ During the first years of the program the grant was targeted to mothers, seniors, and disabled individuals. President Correa's government unified the grant for all beneficiaries in 2007.

¹⁷ We use the stata code developed by Lopez-Feldman (2006).

¹⁸ These sources include social security benefits, retirement pensions, as well as donations and gifts. The first two components constitute the majority.

Table 8: Contributions of income sources to inequality, 2015-2016

Year	Labor		Capital		Remittances		Cash Transfers		Others	
	Share	Marginal effect	Share	Marginal effect	Share	Marginal effect	Share	Marginal effect	Share	Marginal effect
2005	0.871	-0.0186 (0.0030)	0.036	0.0199 (0.0022)	0.030	0.0076 (0.0021)	0.008	-0.0131 (0.0002)	0.041	0.0057 (0.0006)
2006	0.810	-0.0622 (0.0223)	0.095	0.0672 (0.0255)	0.028	0.0019 (0.0015)	0.008	-0.0118 (0.0008)	0.044	0.0052 (0.0022)
2007	0.850	-0.0013 (0.0022)	0.031	0.0153 (0.0012)	0.032	0.0074 (0.0015)	0.018	-0.0277 (0.0004)	0.052	0.0082 (0.0014)
2008	0.864	0.0104 (0.0027)	0.028	0.0144 (0.0012)	0.021	-0.0012 (0.0005)	0.019	-0.0300 (0.0004)	0.048	0.0048 (0.0009)
2009	0.843	0.0139 (0.0029)	0.028	0.0160 (0.0018)	0.020	0.0030 (0.0015)	0.029	-0.0434 (0.0005)	0.059	0.0113 (0.0014)
2010	0.845	0.0146 (0.0029)	0.030	0.0181 (0.0026)	0.016	-0.0016 (0.0005)	0.027	-0.0409 (0.0005)	0.060	0.0088 (0.0014)
2011	0.849	0.0135 (0.0029)	0.021	0.0099 (0.0006)	0.015	-0.0016 (0.0005)	0.024	-0.0393 (0.0004)	0.064	0.0143 (0.0028)
2012	0.848	0.0215 (0.0025)	0.025	0.0133 (0.0019)	0.010	-0.0031 (0.0003)	0.027	-0.0434 (0.0004)	0.062	0.0088 (0.0012)
2013	0.851	0.0250 (0.0018)	0.021	0.0134 (0.0010)	0.012	-0.0016 (0.0003)	0.032	-0.0483 (0.0005)	0.059	0.0070 (0.0008)
2014	0.842	0.0095 (0.0019)	0.026	0.0139 (0.0014)	0.010	0.0001 (0.0004)	0.018	-0.0281 (0.0003)	0.080	0.0022 (0.0013)
2015	0.842	0.0191 (0.0013)	0.023	0.0103 (0.0007)	0.008	-0.0017 (0.0003)	0.016	-0.0256 (0.0003)	0.081	-0.0033 (0.0010)
2015.I	0.827	0.0053 (0.0025)	0.032	0.0181 (0.0019)	0.009	-0.0005 (0.0004)	0.016	-0.0270 (0.0004)	0.091	0.0034 (0.0015)
2015.II	0.838	0.0159 (0.0028)	0.025	0.0126 (0.0009)	0.008	-0.0017 (0.0002)	0.016	-0.0264 (0.0003)	0.082	-0.0059 (0.0008)
2016.I	0.818	0.0042 (0.0022)	0.029	0.0154 (0.0015)	0.007	-0.0024 (0.0003)	0.014	-0.0236 (0.0003)	0.096	0.0016 (0.0013)
2016.II	0.819	0.0034 (0.0021)	0.025	0.0108 (0.0008)	0.009	-0.0007 (0.0003)	0.013	-0.0224 (0.0003)	0.099	0.0042 (0.0013)

Source: Authors' elaboration based on data from ESs, various years.

Two main conclusions can be extracted from the income decomposition. First, part of the reduction in inequality comes from the shift in shares from labor income to other sources of income and cash transfers. To understand the mechanism, consider labor and other sources of income. While income from other sources tends to *increase* inequality, the magnitude of the effect is much smaller than the effect of labor income. As a consequence, a shift in the shares away from labor income translates into a *lower* level of inequality. Cash transfers have a strong equalizing effect, and thus an increase in their share leads to lower inequality.

Second, because cash transfers and other sources of income come mainly from government resources, there seem to be two possible outcomes given the current fall in oil revenue. Either people will become more dependent on these resources or they will face a decline in their income as the government is no longer able to provide them. The limited evidence seems to show both effects. On the one hand, the reduction in the number of beneficiaries of the cash transfers program since 2013 has lowered its share in income as well as its marginal effect. On the other hand, other sources of income represent an ever increasing share of income. These results are important because they show that a large part of the reduction in income inequality came through expanded government benefits, which are partly financed by oil revenues. The economic slowdown following the fall in oil prices has led the government to contract its cash transfers program, but not its social security and pensions programs. As the economy contracts further, however, there will be more pressure on these benefits and a reform will become inevitable.

To provide additional evidence on the trend reversal and lack of sustainability, we conclude this section with an analysis of the evolution of poverty over the period 2005–2016. The reduction in inequality should help reduce poverty (Bourguignon, 2004) and as presented in Table 6 the reduction in inequality in Ecuador has indeed gone hand in hand with a reduction in poverty and extreme poverty.

We use the poverty decomposition proposed by Son (2003), who decomposes the change in poverty in three components and explicitly considers between-group variations. The components are: growth, inequality, and group composition, i.e. the share of each of the groups.¹⁹

Table 9 shows the results for each of the dimensions that we have analyzed throughout the paper: language, gender, and area. As can be seen, during the period 2005–2014 poverty always declined, with the exception of 2009 and 2015. Growth during this period tends to be pro-poor in the sense that it contributes to reducing poverty. Only during the slowdown of 2008–2009 did it contribute to increasing poverty. The effect of inequality is perfectly in line with intuition. In years in which inequality increased, it contributed to a rise in poverty, and in years in which it declined, it contributed to reducing poverty.

¹⁹ Son (2003) proposes a further decomposition of growth, but it is not necessary for our purposes.

Table 9: Contributions of growth, inequality, and group share changes to poverty, 2005-2016

Contribution	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015.I-2016.I	2015.II-2016.II
Language												
Growth	-3.27	-2.36	3.24	2.32	-3.33	-0.50	-1.10	-2.44	-0.31	-0.45	-2.52	0.49
Inequality	-1.09	1.52	-4.85	-1.23	0.49	-3.28	0.51	-0.41	-2.05	1.05	3.69	0.76
Share	-0.08	0.06	0.00	0.03	0.06	0.20	-0.31	-0.05	0.04	0.19	0.16	0.00
Change	-4.44	-0.78	-1.61	1.12	-2.78	-3.59	-0.91	-2.89	-2.32	0.79	1.33	1.25
Gender												
Growth	-3.41	-2.09	3.04	2.27	-3.19	-0.32	-1.44	-2.44	-0.27	-0.52	-2.73	0.45
Inequality	-1.00	1.31	-4.68	-1.10	0.37	-3.26	0.55	-0.46	-2.06	1.31	4.05	0.80
Share	0.00	0.00	0.01	-0.01	0.00	0.01	0.00	-0.01	0.01	0.00	0.00	0.00
Change	-4.41	-0.78	-1.63	1.17	-2.83	-3.57	-0.89	-2.91	-2.32	0.80	1.32	1.25
Area												
Growth	-4.25	-1.00	2.33	1.57	-3.01	-1.38	-1.31	-2.75	-1.28	-0.54	-1.55	0.73
Inequality	-0.18	0.26	-4.02	-0.63	0.24	-2.26	0.32	0.33	-0.96	1.39	2.91	0.59
Share	-0.03	0.03	0.02	0.07	0.02	0.10	0.01	-0.40	-0.06	-0.08	-0.06	-0.07
Change	-4.46	-0.71	-1.67	1.01	-2.75	-3.53	-0.98	-2.82	-2.31	0.76	1.30	1.25

Source: Authors' elaboration based on data from ESs, various years.

The general perspective provided by Table 9 is that economic slowdowns tend to increase poverty. This is shown for the temporary shock in 2008–2009. More importantly, the drop in oil prices since 2014 has changed the dynamics of poverty. In the last three comparison periods (December 2014–2015, March 2015–2016, and June 2015–2016) poverty has increased, and the contribution of inequality has *increased* poverty. Growth also contributed to increasing poverty in the last period of comparison.

The poverty dynamics shown above, and especially the recent rise thereof provide further evidence of the unsustainable path of inequality reduction. After an economic boom, increases in poverty are associated with increases in inequality. Thus, as poverty rises, inequality will continue to increase.

4 Discussion

The previous section provided evidence that the strong reduction in inequality in Ecuador in recent years is not sustainable. Here, we present a discussion and a possible explanation for this result, consistent with much of the literature on the resource curse, and the historical Latin American experience.

As discussed by Gasparini et al. (2016), the Ecuadorian experience of inequality reduction is not isolated. The decline in inequality was a regional phenomenon, as is the recent reversal, although with some differences. Consistent with previous studies, the reduction in growth will most likely lead to an increase in inequality and poverty once again (Altimir, 1995; Psacharopoulos et al., 1995; Ravallion and Chen., 1997; Lustig and Lopez-Calva, 2010). On the one hand, the closing gap between skilled and non-skilled workers' salaries followed at least in part the strong demand for commodities, whose production is intensive in low-skilled workers. The fall in the prices of commodities means a lower demand for this type of workers, which in turn implies a decline in their relative wages. On the other hand, slow economic growth means lower taxes, which limit social spending (including education) and also transfer, social security, and pension programs. Indeed, Aldunate and Martner (2006) argue that social spending in Latin America has a large pro-cyclical bias and thus the change in the business cycle has important negative consequences in this regard.

The dynamic of inequality is, to a large extent, a reflection of the lack of sustainability of the policies followed during the last decade. Despite the optimism of some authors regarding a change in macroeconomic policies (see e.g. Sáenz, 2014), the fall in the price of commodities has uncovered the structural weaknesses of Latin American economies, and Ecuador in particular. The lack of sustainable social policies along with the bad administration of fiscal resources means that much if not all of the progress made may be lost in the next few years. In this context, authors such as Lustig et al. (2013) and Ponce and Vos (2014) emphasize the need for a change in the economic structure so that it becomes less dependent on commodities – particularly oil – an improvement in the quality of education, and a broad-based tax reform. The recent experience shows that these mechanisms are much harder to implement.

But the real challenge lies elsewhere. As argued by Acemoglu et al. (2003), macroeconomic imbalances – and their consequences – are symptoms of a deeper cause:

institutional weaknesses, and particularly weak political institutions that distribute power unequally. In the context of inequality reduction, it seems that the lack of sustainability comes from the pro-cyclical policies followed by the governments in charge of administering the revenues from the commodities boom. Reducing inequality in social and economic dimensions does require *sustained* redistributive policies, which in turn require strong democratic institutions (Robinson, 2006; Lustig and Lopez-Calva, 2010).

Reducing inequality thus requires political equality, understood as equality in the distribution of political power, political rights, influence, and access to the political system (Robinson, 2006). The reason is that political institutions affect economic institutions and, most importantly, the political distribution of power affects the distribution of economic power in a virtuous or vicious circle (Acemoglu et al., 2005). What needs to change then is not the elite in power but the *incentives* of the elite that comes to power.

Failure to understand this fundamental point risks a fall into what is called the iron law of oligarchy, which Acemoglu and Robinson (2006) describe as follows:

The iron law of oligarchy emerges when the current elite are replaced by newcomers, sometimes with a popular mandate, and yet once these newcomers are in power they have no incentive to change the oligarchic structure, and instead use the entrenchment provided by the existing political institutions for their own benefit (Acemoglu and Robinson, 2006, p. 329).

When this occurs, weak political and economic institutions tend to persist and, as a consequence, social and economic outcomes such as inequality and poverty are difficult to change. Indeed, this perspective explains the pattern of persistent inequality in Ecuador shown above. While the country was able to reduce inequality in the past, the reversal that followed occurred precisely because of a lack of strong institutions.

Throughout its history, Ecuador has been characterized by institutional weaknesses as exemplified most recently by having had eight presidents in the period 1997–2007. Looking back over a longer time frame, Ecuador is notorious for its lack of institutional stability. During its republican period Ecuador has had 20 constitutions, each one lasting on average nine years, and its laws are routinely disrespected. Furthermore, as discussed in (Andrango et al., 2016), Ecuador is characterized by continuous political conflict and a disdain for institutions by strong political leaders.

After the 1997–2007 period of political and economic volatility – and thanks in large part to the high price of oil – since 2007 Ecuador has enjoyed a period of political stability and strong economic growth, accompanied by important social achievements. However, the country has become less democratic. Andrango et al. (2016) provide evidence on the reduction of executive constraints and the lack of freedom of the press. Table 10 shows disaggregated scores from Freedom House (2016) for the period 2005–2015. Higher scores imply more political rights and civil liberties.

Table 10: Evolution of Political rights and civil liberties in Ecuador, 2005-2015

Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1. Electoral process	8	9	9	9	9	9	8	7	7	7	7
2. Political pluralism and	15	15	14	14	14	14	13	11	11	11	11
3. Functioning of government	4	4	4	6	6	5	6	6	6	6	6
4. Freedom of expression and belief	15	15	15	14	14	14	13	13	13	12	12
5. Associational and organization	11	11	11	10	9	9	7	7	7	7	7
6. Rule of law	5	5	6	6	6	6	6	6	6	6	6
7. Personal autonomy and individual	10	10	10	10	10	10	10	10	10	10	10
Political Rights Score (1+2+3)	27	28	27	29	29	28	27	24	24	24	24
Civil Liberties Score (4+5+6+7)	41	41	42	40	39	39	36	36	36	35	35
Total score	68	69	69	69	68	67	63	60	60	59	59

Source: Authors' elaborations based on data from Freedom House (2016).

As can be seen, there is a clear trend for lower scores, consistent with the actual Ecuadorian experience. The electoral process is dominated by the executive, and political pluralism and participation, as well as freedom of expression and organization rights have been severely limited. As a consequence, power has been centralized in the state and civil society has lost voice and representation. A new governing elite has replaced the old ones, but in the process it has become like them, precisely along the logic of the iron law of oligarchy. The incentives of the elite have not changed, and the current elite has not made progress in changing the incentives for the future governments. Indeed, as argued by Conaghan (2016):

Using the 2008 Constitution as a starting point and with help from the judicial branch, Correa has overseen an exhaustive legal restructuring. Whether in his hands or those of a successor, the illiberal features now thereby entrenched will allow for nondemocratic governance to continue (Conaghan, 2016, p. 117).

The abundance of resources due to the oil boom together with a new constitution and extremely high popularity constituted a once in a generation opportunity to change these incentives. However, the lack of a democratic perspective prevented the country from profiting from this.

5 Conclusions

After a rise in inequality during the 1990s, Ecuador has experienced an important reduction in vertical and horizontal inequality during the last 15 years, and particularly during the last decade. This reduction in inequality coincided with an oil boom – two elements that do not necessarily go together. As argued by Ross (2007), and Ross et al. (2012), faced with a natural resource boom, politicians have an incentive to direct the revenues towards their own benefit. The reduction in inequality is an encouraging sign that politicians have at least in part resisted the temptation of concentrating the windfalls from oil. Maybe, at least in the short-run, the still fresh experience of the 1999 crisis and the significant political instability of the 1997–2006 period imposed an implicit check on politicians, who became more conscious of the need to respond to the electorate.

The progress made regarding poverty and inequality during the last 15 years is undeniable, as all the evidence presented here confirms. Moreover, education, consumption, and income gaps between advantaged and disadvantaged groups have all improved during this period. It is also undeniable, however, that there are early signs of a reversal, with poverty and inequality increasing.

As we mentioned in the introduction, at least two questions become relevant in this context. First, what were the causes of the reduction in inequality? The simultaneity between the rise to power of a leftist government and the peak of the oil boom makes it difficult to provide a definitive answer. Yet, there is evidence that government policies including expansion of the cash transfer program, public employment, higher minimum salaries, and social security benefits and pensions have contributed to the reduction in inequality. These policies, however, are all dependent on the availability of resources

associated with the oil boom. More direct effects of the boom constitute the large increase in income across the board and the decline in unemployment. Hence, while policies did matter, it seems highly unlikely that they could have been implemented in the absence of the windfalls from the commodities boom.

Second, there is the question to which we have attempted to provide an answer: are the results sustainable? The fall in the price of oil since October 2014 has led to a clear deterioration of Ecuador's macroeconomic indicators, especially the fiscal ones. As a consequence, the well-being of Ecuador's households, and particularly of the more vulnerable groups, is declining. The full effect of the economic slowdown, however, has been limited so far in large part thanks to the rise in internal and external public debt. But this cannot be sustained indefinitely and the likelihood of a long-lived recession between 2016 and 2020 will lead to further increases in poverty and inequality. Thus, the available evidence along with the economic prospects for the near future supports the argument that the reduction in inequality was indeed unsustainable. It seems that the pattern of inequality presented above for the 1970s and the 1980s is likely to repeat itself.

In the end, it clearly makes more sense to have slow but sustainable progress than spectacular results that are reversed soon after (Collier, 2007). This sort of progress requires a strong democratic sense to promote political equality and to alter the elites' incentives.

References

- Acemoglu, D., S. Johnson, J. A. Robinson, and Y. Thaicharoen (2003): "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth," *Journal of Monetary Economics*, 50, 49–123.
- Acemoglu, D., S. Johnson, and J. A. Robinson (2005): "Institutions as a Fundamental Cause of Long-Run Growth," in *Handbook of Economic Growth*, ed. by S. D. Philippe Aghion, Elsevier: Amsterdam.
- Acemoglu, D. and J. A. Robinson (2006): "De Facto Political Power and Institutional Persistence," *American Economic Review*, 96, 325–330.
- Aldunate, E. and R. Martner (2006): "Fiscal Policy and Social Protection," *CEPAL Review*, 90.
- Alesina, A., W. E. Arnaud Devleeschauwer, S. Kurlat, and R. Wacziarg (2003): "Fractionalization," *Journal of Economic Growth*, 8, 155–194.
- Alesina, A., R. Baqir, and W. Easterly (2000): "Redistributive Public Employment," *Journal of Urban Economics*, 48, 219–241.
- Altimir, O. (1995): *Changes in Inequality and Poverty in Latin America*, CEPAL: Santiago.
- Andrango, J. E., D. F. Grijalva, and P. P. Romero (2016): "Liberalism in Ecuador: In Search of a Constitution," *USFQ Department of Economics Working Paper*, USFQ: Quito.

- Banco Central del Ecuador (2016a): “Boletín anuario,” available at <https://www.bce.fin.ec/index.php/component/k2/item/327-ver-bolet%C3%ADn-anuario-por-a%C3%B1os>.
- (2016b): “Información Estadística Mensual,” available at <https://www.bce.fin.ec/index.php/component/k2/item/776>.
- Barro, R. J. and J.-W. Lee (2015): *Education Matters*, Oxford University Press: Oxford.
- Birdsall, N., N. Lustig, and D. McLeod (2011): “Declining Inequality in Latin America: Some Economics, Some Politics,” *Center for Global Development Working Paper*.
- Bourguignon, F. (2004): “The Poverty-Growth-Inequality Triangle,” *World Bank Working Paper*.
- Caumartin, C., G. G. Molina, and R. Thorp (2008): “Inequality, Ethnicity and Political Violence in Latin America: The Cases of Bolivia, Guatemala and Peru,” in *Horizontal Inequalities and Conflict: Understanding Group Violence in Multiethnic Societies*, ed. by F. Stewart, Palgrave Macmillan: New York.
- Collier, P. (2007): *The Bottom Billion*, Oxford University Press: Oxford.
- Conaghan, C. (2016): “Delegative Democracy Revisited: Ecuador Under Correa,” *Journal of Democracy*, 27, 109–118.
- Cornia, G. A. (2014): “Inequality Trends and Their Determinants: Latin America over the Period 1990-2010,” in *Falling Inequality in Latin America. Policy Changes and Lessons*, ed. by G. A. Cornia, Oxford University Press: Oxford.
- Deininger, K. and L. Squire (1996): “A New Data Set Measuring Income Inequality,” *The World Bank Economic Review*, 10, 565–591.
- Donoso, J. C., D. Montalvo, D. Orces, and E. J. Zechmeister (2015): *Cultura política de la democracia en Ecuador y en las Américas, 2014: Gobernabilidad democrática a través de 10 años del Barómetro de las Américas*, Vanderbilt University: Nashville, TN.
- ECLAC (2015): “Social Panorama of Latin America,” available at http://repositorio.cepal.org/bitstream/handle/11362/39964/S1600226_en.pdf?sequence=1.
- (2016): “CEPALSTAT Databases and Statistical Publications,” available at http://estadisticas.cepal.org/cepalstat/WEB_CEPALSTAT/Portada.asp?idioma=i.
- Fearon, J. D. (2003): “Ethnic and Cultural Diversity by Country,” *Journal of Economic Growth*, 8, 195–222.
- Freedom House (2016): “Freedom in the World Comparative and Historical Data,” Tech. rep., Freedom House: Washington, DC.

- Gachet, I., D. Maldonado, N. Oliva, and J. Ramirez (2011): "Hechos Estilizados de la Economía Ecuatoriana: El Ciclo Económico 1965-2008," *Revista Fiscalidad*, 6.
- Gasparini, L., G. Cruces, and L. Tornarolli (2016): "Chronicle of a Deceleration Foretold: Income Inequality in Latin America in the 2010s," *CEDLAS Working Papers*.
- Gasparini, L. and N. Lustig (2011): "The Rise and Fall of Income Inequality in Latin America," *CEDLAS Working Papers*.
- Gisselquist, R. M. (2015): "Project Overview Note," *Group-based Inequalities: Patterns and Trends within and across Countries*.
- Goderis, B. and S. W. Malone (2011): "Natural Resource Booms and Inequality: Theory and Evidence," *The Scandinavian Journal of Economics*, 113, 388–417.
- International Monetary Fund (2016): "Ecuador. Purchase Under the Rapid Financing Instrument – Press Release; Staff Report; and Statement by the Executive Director for Ecuador," Tech. Rep. IMF Country Report No. 16/288.
- Lerman, R. I. and S. Yitzhaki (1985): "Income Inequality Effects by Income Source: A New Approach and Applications to the United States," *The Review of Economics and Statistics*, 67, 151–156.
- Lopez-Feldman, A. (2006): "Decomposing Inequality and Obtaining Marginal Effects," *Stata Journal*, 6, 106–111.
- Lustig, N. and L. F. Lopez-Calva (2010): "Explaining the Decline in Inequality in Latin America: Technological Change, Educational Upgrading, and Democracy," in *Declining Inequality in Latin America A Decade of Progress?*, ed. by L. F. López-Calva and N. C. Lustig, Brookings Institution Press and United Nations Development Programme: Washington, DC, chap. 1.
- Lustig, N., L. F. Lopez-Calva, and E. Ortiz-Juarez (2013): "Declining Inequality in Latin America in the 2000s: The Cases of Argentina, Brazil, and Mexico," *World Development*, 44, 129–141.
- Pallares, A. (2002): *From Peasant Struggles to Indian Resistance: The Ecuadorian Andes in the Late Twentieth Century*, University of Oklahoma Press: Oklahoma.
- Ponce, J. and R. Vos (2014): "Redistribution without Structural Change in Ecuador: Rising and Falling Income Inequality in the 1990s and 2000s," in *Falling Inequality in Latin America*, ed. by G. A. Cornia, Oxford University Press: Oxford.
- Psacharopoulos, G., S. Morley, A. Fiszbein, H. Lee, and W. C. Wood (1995): "Poverty and Income Inequality in Latin America during the 1980s," *Review of Income and Wealth*, 41, 245–264.
- 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, 357–82.

- Robinson, J. A. (2006): "Equity, Institutions and the Development Process," *Nordic Journal of Political Economy*, 32, 17–50.
- Ross, M. L. (2007): "How Mineral-Rich States Can Reduce Inequality," in *Escaping the Resource Curse*, ed. by M. Humphreys, J. D. Sachs, and J. E. Stiglitz, Columbia University Press: New York.
- Ross, M. L., P. Lujala, and S. A. Rustad (2012): "Horizontal Inequality, Decentralizing the Distribution of Natural Resource Revenues, and Peace," in *High-Value Natural Resources and Post-Conflict Peacebuilding*, ed. by P. Lujala and S. A. Rustad, Earthscan: London.
- Sáenz, M. (2014): "The Case of Ecuador," in *Poverty and Inequality in Ecuador, Brazil and Mexico after the 2008 Global Crisis. The Case of Ecuador*, ed. by L. Czarnecki, E. Balleza, and M. Sáenz, Kozminski Studies in Management and Economics, Peter Lang: Frankfurt.
- SIISE (2016a): "Distribución del Ingreso: Coeficiente de Gini," available at <http://www.siise.gob.ec/siiseweb/siiseweb.html?sistema=1#>.
- (2016b): "Ficha Metodológica - Encuesta Urbana de Empleo, Desempleo y Subempleo," available at http://www.siise.gob.ec/siiseweb/PageWebs/Fuentes/ficfue_eued.htm.
- Son, H. H. (2003): "A New Poverty Decomposition," *World Bank Working Paper*.
- Stewart, F. (2000): "The Root Causes of Humanitarian Emergencies," in *War, Hunger, and Displacement. The Origins of Humanitarian Emergencies*, ed. by W. Nafziger, F. Stewart, and R. Vayrynen, Oxford University Press: Oxford.
- (2008): "Horizontal Inequalities and Conflict: An Introduction and some Hypotheses," in *Horizontal Inequalities and Conflict: Understanding Group Violence in Multiethnic Societies*, ed. by F. Stewart, Palgrave Macmillian: New York.
- (2016): "Changing Perspectives on Inequality and Development," *Studies in Comparative International Development*, 1–21.
- Tsounta, E. and A. I. Osueke (2014): "What is Behind Latin America's Declining Income Inequality?" *IMF Working Paper*.
- University of Texas Inequality Project – EHII (n.d): "Estimated Household Income Inequality Data Set (EHII)," available at <http://utip.lbj.utexas.edu/data.html>, accessed July 7, 2016.
- World Bank (2016): "World Bank Database," available at <http://data.worldbank.org/indicator/NY.GNP.PCAP.KD?locations=EC>, accessed July 7, 2016.