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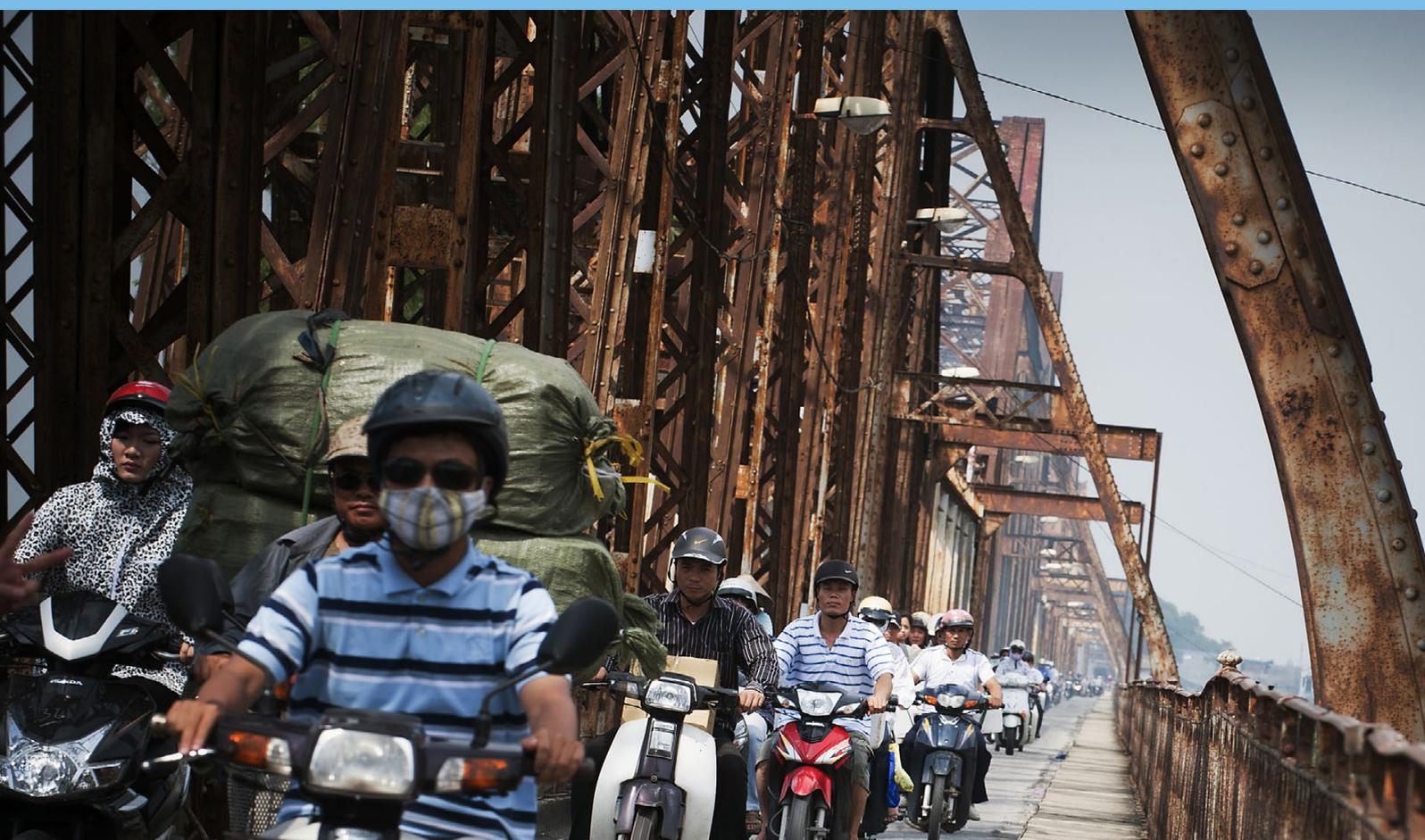
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Middle-income transitions and inequality: is there a link?

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Acronyms and abbreviations

ADLI	Agricultural Development-Led Industrialization	OFSP	Other Food Security Programme
EFME	Ethiopian Federal Ministry of Education	p.a.e	Per Adult Equivalent
EPRC	Economic Policy Research Consortium	PEAP	Poverty Eradication Action Plan
EPRDF	Ethiopian People's Revolutionary Democratic Front	PPP	Purchasing Power Parity
FDI	Foreign Direct Investment	PSNP	Productive Safety Net Programme
GDP	Gross Domestic Product	SAGE	Social Assistance Grants for Empowerment
GEQIP	General Education Quality Improvement Project	TVET	Technical and Vocational Education and Training
GNI	Gross National Income	UBOS	Uganda Bureau of Statistics
GTP	Growth and Transformation Plan	UK	United Kingdom
HIC	High-Income Country	UMIC	Upper-Middle-Income Country
HIPC	Heavily Indebted Poor Country	UN	United Nations
IMF	International Monetary Fund	UNDP	UN Development Programme
LIC	Low-Income Country	UNESCO	UN Educational, Scientific and Cultural Organization
LMIC	Lower-Middle-Income Country	UPE	Universal Primary Education
MFA	Ministry of Foreign Affairs	USE	Universal Secondary Education
MoFPED	Ministry of Finance, Planning and Economic Development	US	United States
MIC	Middle-Income Country	USAID	US Agency for International Development
NAADS	National Agricultural Advisory Services	WDI	World Development Indicators
NGIC	Non-Income Growth Incidence Curve		
NUSAF	Northern Uganda Social Action Fund		
OECD	Organisation for Economic Co-operation and Development		

Abstract

Despite a great deal of progress, our world is very unequal. And according to some indicators, it is becoming increasingly so. Recent research shows that 62 billionaires own the same wealth as the bottom half of the population (Oxfam, 2016). Over the past three decades, 8 out of 10 people have been living in countries where the incomes of the bottom 40% grew less than the average (Hoy and Samman, 2015); economic inequality in developed countries is rising (Piketty, 2014); and mean consumption of the poorest globally has remained largely unchanged (Ravallion, 2015). In this context, the relationship between growth, inequality and poverty reduction, long the subject of scholarly interest, is commanding renewed attention.

A particular focus of attention is on how inequality evolves in relation to growth. This study investigates inequality in low-income countries (LICs) and those escaping the LIC category, and seeks to identify policies that may reduce it. Our mixed-methods approach combines and synthesises findings from cross-country descriptive analysis, the in-depth quantitative analysis of distributional patterns of income growth and education for five countries, and analysis of policy drivers facilitating inclusive growth in two countries.

Our overall argument is as follows. Conventional analyses of the relationship between growth and inequality take the Kuznet's curve as a point of departure. Over the long term in several now-developed countries, this was characterised by an 'inverted U' (Kuznets, 1955). The empirical support for such a secular relationship between growth and inequality has, however, been generally weak (e.g. Deininger and Squire, 1998; Gruen and Klasen, 2003); instead, it was generally found that country-specific conditions and policies affect levels and trends in inequality, and its relationship to growth. Subsequently, analysts have argued that rising inequality may nevertheless be part of the growth process, particularly for poorer countries – with various attempts to theorise as to why this might be so. Our analysis supports a recent body of work focusing on the primacy of policy processes in shaping the nature of growth and its impact on inequality. We do so by showing that the data underlying such models are contested and open to other interpretations, that the pro-growth experiences of poor countries are diverse and that specific policies can shape outcomes in specific contexts.

Section 1 of this paper provides descriptive analysis of existing cross-country data to produce new insights regarding the relationship between growth and inequality across low- and middle-income countries. The analysis points to inconsistencies between the data from national accounts and those from household surveys, and argues that the popular stylised fact that relative inequality is higher and rising among countries that have grown

rapidly (and in particular those that have moved into the middle-income country (MIC) category) has little empirical foundation. In fact, the view that inequality worsens as countries grow is substantiated only if we adopt a (more extreme) measure of absolute inequality that focuses on the *absolute gaps* between richer and poorer people in society rather than on relative income growth. We find too that even the transition of countries from low- to middle-income status is not robust, and depends on data and measurement choices, with significant inconsistencies in the data. Addressing these inconsistencies should be high priority as they affect our basic understanding of the development process.

Section 2 provides in-depth analysis of the recent distributional pattern of growth in five countries that are growing rapidly and/or recently made their transition from low- to middle-income status: Uganda, Ghana, Ethiopia, Vietnam and Bangladesh. The section examines income and non-income growth incidence curves from the pro-poor growth toolbox (Grosse et al., 2008; Klasen, 2008) to distinguish different types of pro-poor growth experiences – 'weak-absolute' (any growth of the incomes of poor people), relative (incomes of poor people grow more than mean income) and 'strong-absolute' (absolute gaps between rich and poor people close). It finds that nearly all income growth spells across the five countries have been pro-poor in the weak-absolute sense (15 of 16); that around one-third have been relatively pro-poor (6 of 16); and that none has reduced strong-absolute gaps between rich and poor. When examining the distribution of education, the pattern is more equitable – in most cases the education of the poorest people has increased, in most cases more than the average. And in half of the cases (5 out of 10), the education absolute gap between the rich and the poor has narrowed. Finally, the least educated have benefited in nearly all cases and at a higher than average rate (11 out of 12 spells); and in three-quarters of the spells (10 out of 13), growth in education has reduced gaps. This analysis gives a very finely disaggregated picture of how different groups in society are faring and where policy should focus.

Section 3 focuses on the recent experiences of Ethiopia and Uganda and on the factors underpinning poverty and inequality outcomes in the two countries. While poverty reduction in the two countries has been comparable, inequality outcomes have diverged: growth in Ethiopia has been more inclusive and equitable. We argue that part of the explanation lies in policies on agriculture and human development, and how these have affected different parts of the income distribution.

Finally, in Section 4, we aim to identify implications of this analysis for developing countries and development agencies, as well as areas where further work is needed.

1. Trends in inequality as countries grow



Trains in Kolkata, India. Photo: © Kibae Park for the UN.

1.1 Overview

In this section, we address the relationships between growth, inequality and poverty reduction in a sample of 124 developing countries since 2000. To make this exploration comprehensive we exploit two available sources of data – derived from national accounts and household surveys, respectively – and both country- and population-weighted averages. Our key findings are as follows:

- Measurement issues call into question many apparent transitions from low- to middle-income status: on average, the mean per capita household consumption incomes of LICs that have become MICs and those that have stayed LICs do not differ substantially.
- Our analysis rejects the popular stylised fact that inequality worsens as countries transform from LICs into MICs.
- The growth–inequality relationship differs depending on whether the analysis uses data from national accounts or those from household surveys, whether it relies on population-weighted averages or simple averages across countries and whether a small number of clear outliers are included.
- The relationship between growth, inequality and changes in poverty is equally ambiguous. Assessments of the growth–poverty relationship depend entirely on the data source used to measure growth, and falls in inequality need not necessarily translate into large poverty reductions.
- The popular view that inequality worsens as developing countries grow is in fact supported only if we adopt a (more extreme) measure of absolute – rather than relative – inequality. However, in this case, nearly all growth episodes in poor or rich countries serve to increase the absolute distance between the poor and the rich, so this finding is not unique to developing countries or those moving from low- to middle-income status.
- We propose that international agencies (including the World Bank) address these measurement puzzles and also specifically consider abandoning their reliance on

the Atlas Method to determine the income status of developing countries, which is at the heart of some of the inconsistencies discussed above.

1.2 Background

The relationship between income growth and inequality has long been the subject of scholarly and policy attention and this has been increasing in recent years. The rationale for addressing inequality for reasons beyond moral considerations has become clearer. Higher inequality is associated with higher levels of poverty as well as lower levels of average well-being (Gruen and Klasen, 2008). Moreover, higher levels of inequality have been shown to reduce the degree to which growth leads to poverty reduction in developing countries (Ravallion, 2009; Ravallion, 2007; Bourguignon, 2002). Indeed, research over the last decade has also suggested that higher levels of inequality reduce growth for the entire economy (Ostry et al., 2014; Atkinson, 2015; Bourguignon, 2015; Birdsall, 2007; Cornia et al., 2004). Furthermore, inequality has also been associated with higher rates of conflict within countries (Stewart, 2008; Robinson, 2001). For these reasons, the recently adopted Sustainable Development Goals have included inequality reduction as one of the 17 goals.

When considering drivers of inequality, a well-known assertion about the relationship between growth and inequality is the Kuznet's hypothesis, which argues that over the long term inequality increases at early stages of development and falls when countries reach much higher incomes (Kuznets, 1955). This was characterised by an 'inverted U' curve and only based upon historical data from the United States, the United Kingdom and two German states (ibid). As more data has become available numerous studies have searched for cross-country patterns of levels of inequality being lower in countries at early and later stages of development and higher in countries in between (some studies include: Ahluwalia, 1976; Bourguignon and Morrison, 1990; Anand and Kanbur, 1993; Randolph and Lott, 1993; Bourguignon, 1994; Ogwang, 1994; Fields and Jakobson, 1994; Ram, 1995; Jha, 1996; Barro, 2000; Chang and Ram, 2000; Lin et al., 2006; and Huang and Lin, 2007). Barro (2000) is an example of an influential recent piece of work that claims to have found evidence of the Kuznet's curve. However this study and others with the same conclusion have been criticised for not controlling for fixed effects between countries (Gallup, 2012). More carefully considered studies (e.g., Anand and Kanbur, 1993; Fields and Jakobson, 1994; Deininger and Squire, 1998; and Gruen and Klasen, 2003), do not find support for the 'inverted U' curve across countries.

In line with the Kuznet hypothesis, a popular claim exists that, in recent years, as LICs have experienced rapid economic growth and graduated to middle-income status, inequality has tended to increase. This narrative has been reinforced in recent publications by the UN Development Programme (UNDP) (2013) and the World Bank (e.g. Besley and Cord, 2007). For example, according to UNDP (2013: 67), 'Developing countries that moved to higher income classifications, irrespective of initial income level, experienced larger increases in inequality than countries that stayed in the same income group.'

Here, we question the foundations of this purported stylised fact. Indeed, we argue that evidence showing that, on average, growth tends to lead to increases in inequality is driven purely by a small number of outlier countries and is plagued with measurement challenges. **Some of these challenges are so severe that it is not even clear how robust the transitions of some LICs to middle-income status really are.** Closer examination points to a great deal of variation in how inequality changes when countries grow. Across LICs and MICs, there is no clear pattern for the 2000s. This finding holds using the two main measures of growth: national accounts income per capita and household survey means. Therefore, it would seem that increases in inequality are not an unavoidable consequence of growth as countries transition from low- to middle-income status. Rather, the heterogeneity of country experiences would suggest that growth can be distributed more or less equitably at any stage of development; this also suggests there is greater room for policy to affect the linkages between growth, poverty and inequality, an issue we revisit below.

This section is divided into two main parts. The first discusses the measurement challenges that arise in undertaking this analysis and the methodological approach we adopt. The second presents trends in inequality and growth for LICs and MICs using both national accounts and household survey data. Finally, we relate the findings to poverty reduction.

1.3 Measurement challenges

The analysis poses two main measurement challenges. The first relates to national accounts data – namely, issues with the World Bank approach to classifying countries by income per person measured in gross national income (GNI) per capita (in current \$ using the so-called Atlas Method – which aims to reduce the impact of exchange rate fluctuations when comparing national incomes across countries).¹

This country classification based on the Atlas Method has assumed increasing policy relevance in recent years. It not only determines the lending terms of World Bank

1 In calculating GNI per capita in US dollars for certain operational and analytical purposes, the World Bank uses the Atlas conversion factor instead of simple exchange rates. The Atlas conversion factor for any year is the average of a country's market exchange rate for that year and its exchange rates for the two preceding years, adjusted for the difference between the rate of inflation in the country and international inflation. International inflation is based on the inflation rates in the euro area, Japan, the UK and the US since 2001.

projects but is also used for aid allocation by other donors and is an important criterion for countries graduating from the status of least-developed country. Several poor country governments have adopted attainment of middle-income status as a central policy goal (Alonso et al., 2014).

The second challenge has to do with the potential limitations of household survey data. This relates to trying to measure standards of living using a top-down approach through national accounts data and a bottom-up approach through household surveys. In theory, there should be a very close correlation between these two approaches, implying that aggregate changes in the economy are reflected at the household level.

Issues with national accounts data and World Bank income classifications

The World Bank approach to classifying countries as either low or middle income based on GNI per capita thresholds² can point to misleading findings about how inequality changes with growth for at least three reasons.

First, income per person measured in GNI per capita using the Atlas Method tends not to correspond closely with mean consumption per person based on household surveys. This is particularly problematic because inequality indicators are based on household surveys. As such, there would appear to be merit in examining how changes in inequality relate to growth measured using both household surveys and national accounts data.

We illustrate this point by highlighting that, when most countries cross the middle-income threshold using the Atlas Method, this does not correspond to clear improvements in mean household consumption using survey means (Figure 1). Moreover, when excluding the three outliers with relatively very high survey mean incomes (Honduras, Moldova and Vietnam), we see little difference between survey means in countries that stayed LICs and those that became LMICs (Table 1).³

Note that at least two separate items might drive this difference. One is that the Atlas Method uses market exchange rates whereas survey means are expressed in market PPP (using 2005 PPP). The other is that there could be a discrepancy between mean consumption per capita as measured in surveys and per capita income taken from the national accounts.⁴ Below, we separate these two issues. Figure 2 (panel a) shows the relationship between per capita incomes, measured using the Atlas Method and using PPP. As we can see, there is some discrepancy, and

not all countries that graduated to middle-income status using the Atlas Method would have done so if PPP had been used (and vice versa). Since there are many reasons to believe PPP is a better reflection of relative living standards between countries than the market exchange rates which underlie the Atlas method (e.g. it is unaffected by currency fluctuations and the systematic undervaluation of non-tradable goods and services), it appears problematic that such an important and policy-relevant transition is not robust to using improved exchange rates.

At the same time, the two are quite highly correlated and the countries graduating to middle-income status generally are richer also in PPP terms than those that have remained LICs. Figure 2 (panel b) examines the relationship between PPP per capita incomes from the national accounts and PPP incomes from the surveys. Clearly, the discrepancy is much larger, suggesting the mismatch between survey means and national accounts is the main driver of the problem we describe.

While the bigger problems relates to the survey-national accounts discrepancy, other problems emerge when relying on the Atlas Method to determine the income status of countries. A second issue with the Atlas Method is that income per capita thresholds are updated solely depending on how inflation has changed in the US, the UK, the Eurozone and Japan (Figure 3 overleaf). While the overall rate of increase has been around 2% a year, there are two distinct periods of time. From 1998 to 2003, the thresholds stayed roughly constant in nominal terms, whereas from 2003 onwards the thresholds increased by around 3% a year.

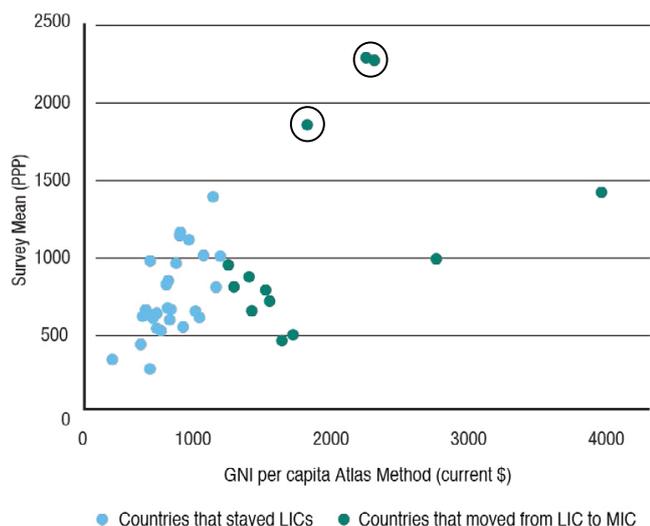
Finally, although the thresholds have grown slowly, the average annual growth rate in income (current \$, Atlas method) over the period in LICs and MICs has been extremely high, at around 8% per capita. In fact, more than a third of countries averaged an annual per capita growth rate of over 10% for a decade and only 3 of the 124 countries in the sample had negative per capita growth rates, on average. These unprecedented growth rates owe partly to the depreciation of the US dollar over this time period *vis-à-vis* many developing country currencies, and are not reflected to the same extent in other measures of income per person growth based on national accounts data. As such, it would appear that the recent flurry of countries crossing World Bank thresholds is likely to be driven partly by measurement issues. In fact, **it could be argued that the transition to middle-income status by some**

2 All GNI data are Atlas Method in current US dollars unless otherwise stated.

3 A similar trend exists when comparing GNI per capita 2005 purchasing power parity (PPP) with survey means, which are also measured in 2005 PPP. Once the same three outlying countries are excluded, there is very little difference between survey means in countries that stayed LICs and those that became lower-middle-income countries (LMICs). PPP measures the differences in price levels of identical goods in different locations and therefore enables comparisons of buying power in different countries.

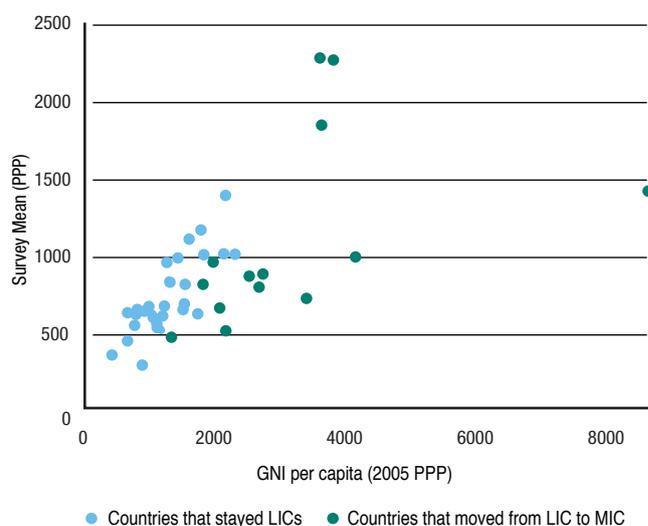
4 A third possibility is that national accounts measures include items that do not necessarily contribute to household welfare. One example is natural resource earnings where the returns are reinvested or sent outside the country where they are earned (or that may accrue only to the rich and therefore may not be measured well in household surveys). Our preliminary attempts to test this hypothesis by examining whether the shares of natural resources and of mining in the economy were reflected in the national accounts survey gap did not suggest any clear relationship.

Figure 1: Relationship between mean incomes derived from national accounts and from household surveys, most recent year available



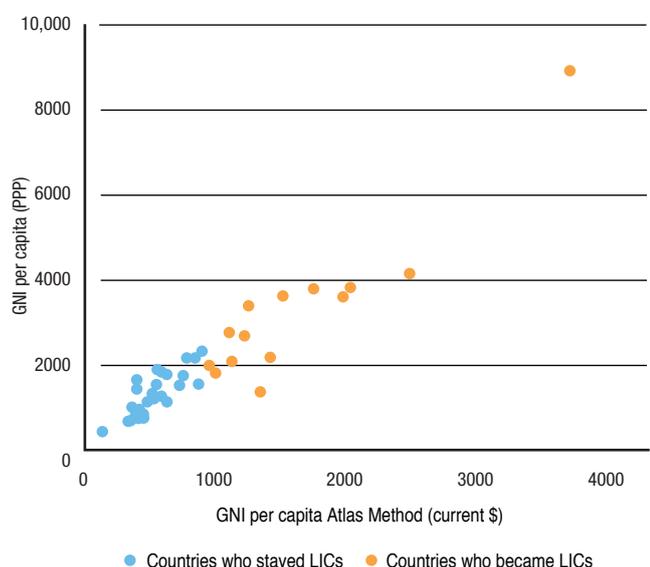
Source: Author computations of data from World Bank (2015a) and PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>)

Figure 2b: Relationship between national accounts incomes using Atlas Method and PPP and household surveys, most recent year available – GNI in PPP vs. survey mean incomes



Source: Author computations of data from World Bank (2015a) and PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>)

Figure 2a: Relationship between national accounts incomes using Atlas Method and PPP and household surveys, most recent year available – GNI Atlas Method vs. PPP



Source: Author computations of data from World Bank (2015a) and PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>)

countries is really a result of the market exchange rates used in the World Bank Atlas Method. The comparison of survey means and national account means additionally suggests there is no fundamental difference between those countries that graduated to lower-middle-income status and those that stayed LICs.

There is a last issue associated with the use of national accounts data more generally (unrelated to the Atlas vs. PPP issue). As has been prominently discussed in the academic and policy literature (e.g. Devarajan, 2013; Jerven, 2013), recent rebasings of national accounts data have made a huge difference to measured gross domestic product (GDP) per capita. Overnight, Ghana increased its GDP per capita by 60% and Nigeria became Africa’s largest economy; similar jumps will take place as more countries adopt more recent System of National Accounts standards and rebase their national accounts. Many transitions from lower- to middle-income status can happen simply because of that.

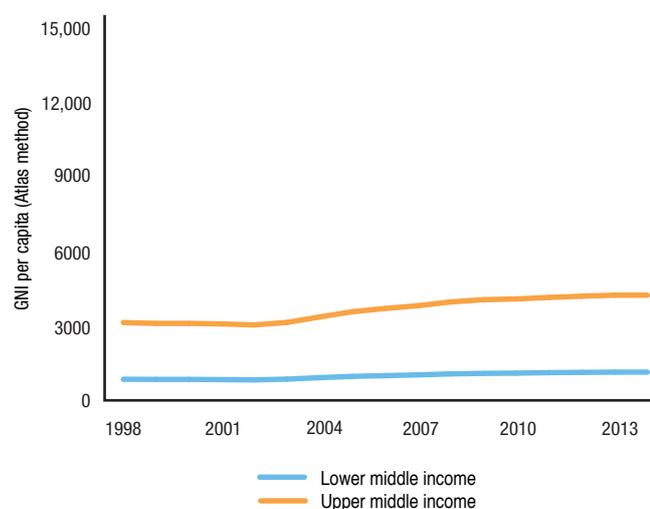
Altogether, this suggests the transition from lower- to middle-income status, which has been accorded a great deal of importance in policy circles, is not really based on

Table 1: Survey means of LICs that stayed LICs and those that became LMICs, latest year available

	LICs that stayed LICs	LICS that became LMICs
Survey mean (with outliers), PPP\$	849	1501
Survey mean (without outliers), PPP\$	849	968

Source: Author computations of data from PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>)

Figure 3: Changes in World Bank income group thresholds over time, 1998-2013



Source: Author computation of data from World Bank (2015a) using income group thresholds provided at <http://bit.ly/1PPFaOr>.

robust data. It may be because of rising and overvalued exchange rates (hardly a sign of sustainable economic progress), changes in national accounts procedures and the vagaries of rich country exchange rates. Consequently, it would be greatly preferable if all countries, with the assistance of the World Bank, the International Monetary Fund (IMF) and the UN Statistical Division, could adopt the same national accounts standard together and base assessments of income status on PPP exchange rates.

Potential limitations of household survey data

As discussed above, however, the discrepancy between survey means and national accounts remains another serious issue. Ravallion (2001) shows there is inconsistent variation across regions with regard to the discrepancy between household survey data and national accounts, which makes reconciling the two in a standardised way quite problematic. There is widespread discussion over the reasons that household survey means do not correspond with national accounts data. This may owe partly to measurement error – for example, as countries become richer and urbanise, conventional household surveys may become less accurate in measuring consumption (Gibson et al., 2015). It may be partly because those at the top end of the distribution either underreport their income or do not participate at all (Chandy, 2015). And it may also reflect

exclusions at the very bottom of the income distribution (see Carr-Hill, 2013).

If this is true, then current measures of growth are likely to be biased (depending on the growth excluded groups are experiencing) and measures of inequality are likely to be underestimated (Deaton, 2005). Lakner and Milanovic (2013) and Anand and Segal (2015) have tried to overcome the challenge posed by missing or incorrect data at the top of the distribution by attributing the difference between total consumption in household surveys and national accounts data to the top 1%. This is based on the premise that those at the very top of the distribution tend to have a large share of total consumption and, although their consumption is excluded from household surveys, it is captured in national accounts data. Whether this is a reasonable approach is very difficult to ascertain, and the debate remains unresolved. Regardless of these potential limitations, all measures of inequality and extreme poverty are necessarily based on household surveys.

Thus, before turning to our analysis of how inequality changes as countries move from lower- to middle-income status, we have to admit that this research question is based on questionable data. As we suggest above, the transition in status is partly data-driven, and inequality data may also be biased. We must keep this in mind as we proceed with our analysis.

1.4 Methodology

With these methodological challenges in mind, we analyse recent trends in inequality and growth. Data were sourced for all countries from PovcalNet,⁵ the World Bank's database for internationally comparable household surveys, using PPP exchange rates (the 2005 round). As the focus is on recent trends, we included only surveys since 1998 and, to be able to compare changes over time, we examined only countries that had two or more surveys.⁶ This allowed analysis of 124 countries in total, of which 103 were LICs or MICs around 2000. In addition, we included only the earliest and most recent surveys. The average earliest survey year was 2000 and the average most recent survey year was 2010.

Countries are categorised by the World Bank as low- (LIC), lower-middle- (LMIC), upper-middle- (UMIC) and high-income (HIC) each year based on GNI per capita Atlas Method (current US dollar) thresholds. Using data from the World Development Indicators (WDI), we categorise each of the countries in our sample according to the World Bank threshold for the earliest year in which a survey was available and for the most recent year in which a survey was available on a country-by-country basis. For example, to classify China as an LMIC in 1999 and

5 This is based upon the October 2014 update of PovcalNET data.

6 Maldives, São Tomé and Príncipe and Timor-Leste were dropped because of a lack of data availability in the relevant years. Adjustments were made for Estonia and Jamaica to the nearest year when data were missing.

Table 2: Average across countries of changes in GNI per capita and inequality by income group, 2000s

Income classification		No.	GNI per capita (Atlas Method)			GNI per capita (2005 PPP)			Palma		
c2000	c2010		c2000	c2010	% change	c2000	c2010	% change	c2000	c2010	% change
LIC	LIC	27	316	569	80	850	1,330	56	2	1.89	-6
	to LMIC	14	534	1,665	212	1,659	3,292	98	2.13	2.21	4
LMIC	LMIC	20	1,366	2,618	92	3,102	5,010	62	2.86	2.22	-22
	to UMIC	19	1,893	5,655	199	4,829	9,715	101	2.27	1.95	-14
UMIC	UMIC	15	4,211	8,527	102	8,923	15,024	68	3.4	3.48	2
	to HIC	5	5,473	14,385	163	10,313	20,053	94	1.44	1.3	-10
HIC	HIC	21	25,593	41,444	62	26,182	34,914	33	1.23	1.24	1

Note: Three countries jumped more than one threshold and they are not included in this table (Azerbaijan from LIC to UMIC and Latvia and Lithuania from LMIC to HIC). c means circa.

Source: Author computations of data from World Bank (2015a) and PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

Indonesia as an LIC in 2000, we compare GNI per capita with the World Bank thresholds in 1999 for China and in 2000 for Indonesia. It is necessary to compare countries across slightly different years around 2000 and around 2010 because of the infrequency of household surveys – but all changes in growth, poverty and inequality indicators are annualised. We then classify countries based on whether they stayed within their existing category from the earliest survey or transitioned to a higher category in the latest survey. For example, whereas Uganda was an LIC in the earliest and the latest survey, Vietnam transitioned from being an LIC to being an LMIC. By classifying countries based on which thresholds they crossed or if they stayed in their original category, it is possible to determine trends in inequality and growth for each subset of countries.

Given the aforementioned issues with national accounts data, we also classify countries based on survey mean data, for which there are no standard thresholds in the literature. In our analysis, we categorise countries based on whether their survey means were below \$2 a day, between \$2 and \$4 a day, between \$4 and \$10 a day and above \$10 a day. The same classification process was undertaken as with the World Bank thresholds.

To compute population-weighted averages – that is, averages for each group of countries that reflect the relative populations of each country – population data was sourced from WDI and relative population size within each category was determined for the earliest and latest years for which surveys were available.

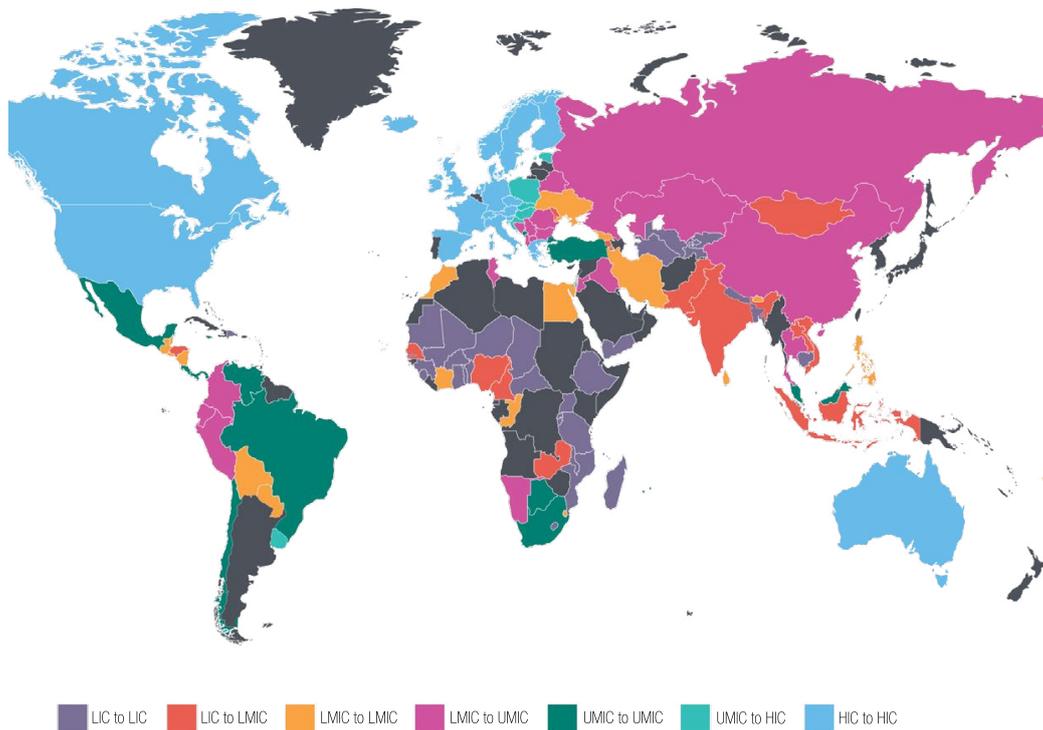
1.5 How inequality changes when countries have crossed GNI per capita thresholds

On average, the subset of countries that moved from low- to lower-middle-income status over the 2000s had the fastest growth in GNI per capita Atlas Method (212% over the 2000s using the Atlas Method and 98% using PPP) and experienced the largest increase in inequality (4% measured by the Palma Ratio),⁷ whereas most other subsets of countries actually experienced a decrease in inequality (Table 2). These countries also now have higher inequality than those that stayed LICs, and a ratio similar to that in other UMICs. This would, at first glance, be consistent with the claim that countries moving to LMIC status pay a price in terms of higher inequality.

The countries that are still LICs today are almost exclusively in Sub-Saharan Africa (Figure 4 overleaf). Almost half of today's LMICs were LICs in 2000 and most are located in East and South Asia. Many countries in this category, such as India, Indonesia, Nigeria and Pakistan, are home to large numbers of both the world's population and the world's poor. The other half of today's LMICs, which were LMICs around 2000, are largely in regions that have experienced low rates of growth over the period, such as Latin America and the Caribbean as well as the Middle East and North Africa. Countries in East and Central Asia, which includes China, comprise the vast majority of the category of countries that have moved from LMIC to UMIC since 2000. The remaining countries in the dataset are mainly in Latin American and Caribbean,

7 The Palma Ratio is the ratio of the income share of the top 10% over the bottom 40%. An increase means that either the bottom 40% has reduced its share, the top 10% has increased its share or both. In contrast, changes in the Gini coefficient, another popular measure of inequality, can be driven by any part of the income distribution, making it less straightforward to interpret changes. The Palma Ratio and Gini coefficient are very strongly correlated (Cobham and Sumner, 2013), so it is unnecessary to use both measures in this analysis, given that they would illustrate the same trend.

Figure 4: Map of the world by income group transitions over the 2000s



Source: Author elaboration using data from World Bank (2015a).

Eastern Europe and the Organisation for Economic Co-operation and Development (OECD).

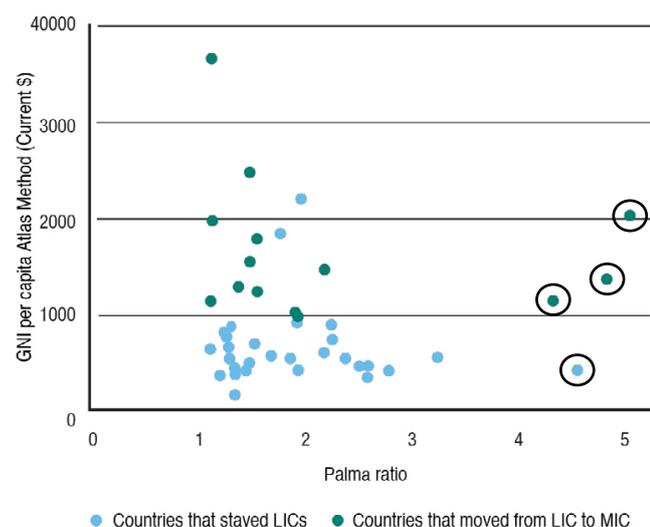
Population-weighted estimates reinforce the narrative that higher growth rates in poorer countries are associated with increased inequality (Table 3). But, in contrast with Table 2, now those countries that moved from low- to lower-middle-income status still have lower inequality than those that stayed LICs, despite rising inequality in the former and falling inequality in the latter. Thus, using population-weighted data already calls into question the idea LICs that have become LMICs have high levels of inequality. Factoring in population size also reduces the difference between growth in LICs that have become LMICs and those that have stayed LICs (the growth rates, over the period, are 120% and 90%, respectively), but the opposite holds for countries that were initially LMICs. For countries that were initially LICs, a similar trend in changes in inequality exists whether using a simple or a population-weighted average. In contrast, changes in inequality alter dramatically depending on the type of average used for countries that have stayed LMICs compared with those that have become UMICs, largely owing to circumstances in China.

There is a great deal of variation between countries, and some outliers dramatically alter the averages for the country categories (Figure 5). The three green outliers in order from right to left are Honduras, Zambia and Lesotho. The one blue outlier is the Central African

Republic. If these outliers were excluded, the stylised fact discussed above – that inequality in LMICs is higher than it is in LICs where data are country-weighted – appears to be entirely unfounded. In fact, there is a swing in the opposite direction. Excluding outliers, in the latest survey the average Palma for countries that have stayed LICs was 1.79 compared with 1.54 for countries that were LICs in 2000 and became LMICs. As such, it appears that, beyond a few outliers, there is effectively little difference in the average level of inequality between countries that have moved from low- to lower-middle-income status and those that have stayed LICs.

We then look at the relationship between *changes* in mean per capita GNI and *changes* in inequality to examine whether the two are related (Figure 6). The scatterplot suggests that, among LICs that have stayed LICs and those that have become LMICs, higher income growth *is* associated with slightly rising inequality but the relationship is weak. At the same time, it is important to stress that considerable case study evidence as well as the recent experiences of Latin America suggest this relationship is decidedly non-deterministic – that is, policy matters. In a recent re-evaluation of the literature on the Kuznet’s curve, Ravi Kanbur (2012:8) made this same point: ‘(Over) the past quarter century ... the tendency for increasing inequality in growing economies has been present, unless actively counteracted by policy.’ **Together, these findings indicate that income levels are not associated**

Figure 5: Mean GNI per capita and inequality in countries with different growth experiences, most recent year



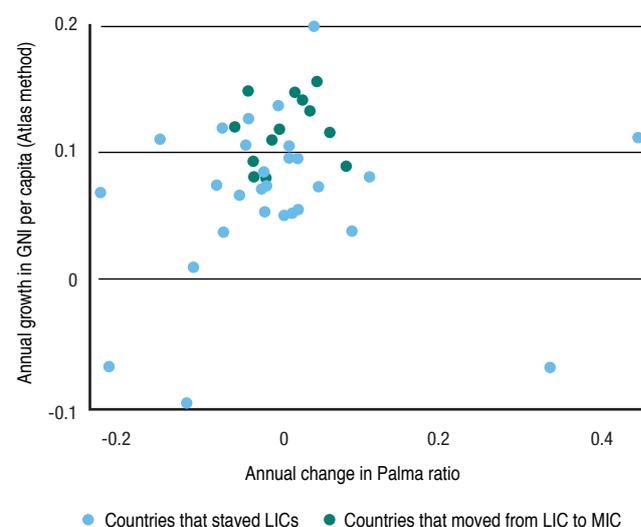
Source: Author computations of data from World Bank (2015a) and PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

with levels of inequality and that, while income growth tends to be associated with increases in inequality, the relationship is weak.

1.6 How inequality changes when countries have crossed survey mean thresholds

To explore if this finding holds beyond World Bank income classifications, we look at how inequality varies based on household survey data thresholds. **There appears to be no evidence in support of the popular stylised fact that inequality worsens as countries grow.** Actually, the opposite

Figure 6: Change in per capita GNI per capita and inequality in countries with different growth experiences, 2000s



Source: Author computations of data from World Bank (2015a) and PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

seems to hold true for very poor countries. Countries for which mean consumption stayed below \$2 a day experienced low growth and an increase in inequality. Inequality declined in most other country categories (Table 4 overleaf).

This analysis calls into question not only the stylised fact discussed above but also whether countries should be categorised on national accounts data and then have this compared with survey-based inequality measures – given that a significantly different narrative emerges when looking at the average growth and change in inequality depending on whether data is sourced from national accounts or household surveys.

Table 3: Population-weighted averages of changes in GNI per capita and inequality by income group, 2000s

Income classification		No.	GNI per capita			Palma		
c2000	Final		c2000	Final	% change	Initial	Final	% change
LIC	LIC	27	308	584	90	1.74	1.65	-5
	to LMIC	14	665	1,459	119	1.41	1.50	6
LMIC	LMIC	20	1,275	2,504	96	2.16	1.80	-17
	to UMIC	19	1,121	4,904	337	1.90	2.06	8
UMIC	UMIC	15	4,319	9,978	131	4.10	3.54	-14
	to HIC	5	4,910	13,301	171	1.26	1.25	-1
HIC	HIC	21	28,444	43,275	52	1.52	1.57	3

Source: Author computations of data from World Bank (2015a) and PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

Note: c means circa

Table 4: Average across countries of changes in survey mean income and inequality, 2000s

Income classification		No.	Survey mean			GNI per capita (2005 PPP)			Palma		
c2000	Final		c2000	Final	% change	c2000	Final	% change	Initial	Final	% change
<\$2	<\$2	20	506	573	13	885	1,302	47	2.19	2.25	3
	to \$2-4	9	587	925	58	1,164	2,080	79	1.98	1.77	-11
\$2-4	\$2-4	16	1,055	1,167	11	2,051	3,832	87	1.92	1.78	-7
	to \$4-10	6	1,128	2,153	91	3,017	6,663	121	1.97	1.58	-20
\$4-10	\$4-10	23	2,325	2,703	16	4,927	8,261	68	3.06	2.53	-17
	to >\$10	20	2,822	4,830	71	6,842	14,235	108	2.63	2.38	-10
>\$10	>\$10	28	11,124	12,760	15	21,839	29,932	37	1.46	1.54	5

Note: Two countries moved more than one threshold and they are not included in this table (Vietnam from below \$2 to between \$4-10 and Serbia from above \$10 a day to between \$4-10 a day). c means circa.

Source: Author computations of data from PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

Impact of population-weighted estimates

Factoring in population size seems to support the stylised fact that inequality worsens with growth (Table 5). Using a population-weighted average, countries whose survey means moved from below \$2 a day to between \$2 and \$4 a day and those that moved from \$2-4 a day to between \$4 and \$10 a day experienced a significant increase in inequality. However, this trend is driven almost entirely by two of the most populous countries in the world, Indonesia and China. Both of these countries have experienced fast rates of growth and significant increases in inequality. As such, the results based on population-weighted averages should not be considered indicative of a broader trend, especially given that the calculations based on simple averages tells a very different story.

Variation between countries

As with data based on national accounts, countries' inequality and growth trajectories vary markedly (Figure 7). A small number of outliers dramatically influences average change. The three blue outliers in order from right to left are Zambia, Central African Republic and Lesotho. Interestingly, in the case of household survey means as opposed to national accounts, the outliers alter the average so as to imply the opposite conclusion. That is, countries that stay in the lowest category have higher inequality than those that move up a threshold. However, if we exclude the outliers, once again there is little difference in inequality between countries that have stayed below the threshold and those that have moved above it. In fact, two (Zambia and Lesotho) of these blue outliers are actually LMICs

Table 5: Population-weighted average of changes in survey mean income and inequality, 2000s

Income classification		No.	Survey mean			Palma		
c2000	Final		c2000	Final	% change	Initial	Final	% change
<\$2	<\$2	20	592	674	14	1.48	1.54	4
	to \$2-4	9	579	954	65	1.37	1.60	17
\$2-4	\$2-4	16	1,011	1,098	9	1.66	1.51	-9
	to \$4-10	6	802	1,932	141	1.78	2.06	16
\$4-10	\$4-10	23	2,263	2,568	13	2.53	2.10	-17
	to >\$10	20	2,699	4,578	70	3.24	2.92	-10
>\$10	>\$10	28	14,547	15,322	5	1.60	1.60	0

Note: Two countries jumped more than one threshold and they are not included in this table (Serbia fell from the above \$10 a day category to between \$4 and \$10 a day and Vietnam jumped from below \$2 a day to between \$4 and \$10 a day). c means circa.

Source: Author computations of data from PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

and are responsible for making it appear as if growth in LMICs is associated with higher inequality. This reiterates yet again the value of going beyond crude averages and the conclusion that **no general trend exists with regard to how moving to middle-income status relates to inequality.**

1.7 Relating the findings to poverty reduction

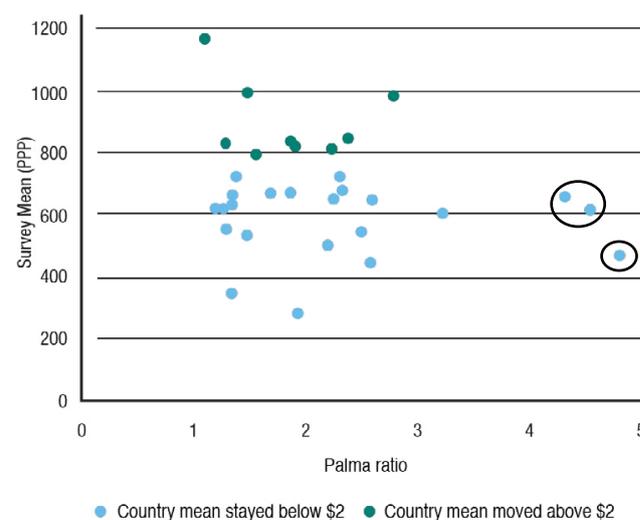
It follows from this analysis that the relationship between growth and poverty reduction varies considerably based on whether national accounts or survey mean data are used. For both sources of data, levels of poverty tend to be somewhat correlated with levels of income or consumption across all countries, but not for the poorest countries. Levels of poverty in these countries are strongly correlated with survey means, but this relationship does not exist when looking at GNI per capita Atlas Method. A similar pattern holds with regard to changes in poverty and growth: there is a much stronger relationship between growth in survey means and changes in poverty than for growth in GNI per capita Atlas Method. This is actually not so surprising, since calculations of poverty are based on the surveys, and rising mean incomes will nearly always lead to a very similar fall in poverty (e.g. Bourguignon, 2002; Dollar and Kraay, 2002). Therefore, **making assessments of the likely implications of growth for poverty would appear to be entirely dependent on the source of data used to measure growth.** This again reinforces our earlier point on the mismatch between survey and national accounts data when it comes to measuring growth.

Another important implication is that there is no clear relationship between changes in inequality and changes in poverty. In other words, when countries experience a reduction in inequality, this does not automatically correlate to a reduction in poverty. Hoy and Samman (2015) highlight the impact of varying degrees of pro-poor growth on poverty reduction. They show that, in many cases, developing countries have experienced growth that has disproportionately benefited those in the bottom 40% of the distribution.⁸ However, there are significant exceptions to this, largely in East Asia, where countries such as Indonesia and China have experienced very unequal growth. The findings in this paper reaffirm this conclusion. In general, we have illustrated that these countries are the exception not the norm. More often than not, growth in average household consumption should reduce poverty and its effect on relative inequality need not be negative.

1.8 A final twist: relative versus absolute inequalities

This section has revealed that countries that shifted from low- to middle-income status in the 2000s did not differ significantly in mean per capita household incomes

Figure 7: Mean income from surveys and inequality across countries with different growth experiences, 2000s



Source: Author computations of data from PovcalNet (<http://livesearch.worldbank.org/PovcalNet/>).

compared with those that remained LICs. It has also shown that (relative) inequality in countries that became MICs may not have increased. How might we reconcile this argument with the popular view that inequality in rapidly growing countries is worsening?

One way to bridge this gap is to differentiate between relative inequality, which has been the subject of this section, and absolute inequality (Hoy, 2015). Some key papers (e.g. Atkinson and Brandolini, 2010; Bosmans et al., 2011) highlight that the disproportionate focus on relative inequality has overshadowed potentially more appropriate measures of inequality, such as absolute inequality. Absolute inequality directly refers to the absolute gap between the rich and poor (Ravallion, 2007) and thus warrants greater attention, especially considering that changes in absolute inequality over time measures who accumulates the additional income generated from growth, and may more accurately reflect how people perceive inequality (Hoy, 2015).

If we revisit the growth and inequality nexus considering absolute rather than relative measures, a different pattern emerges (Table 6a, 6b overleaf). Indeed, absolute inequality measured by the Absolute Palma (Hoy, 2015), has worsened in every income category (as defined by mean GNI per capita or mean income derived from surveys). While this rising absolute inequality may be one reason for the popularly felt unease about inequality, it also shows that this problem is not closely related to the income status or the move of countries from one income status to

⁸ Nonetheless, it is important to note that Ravallion (2014) shows that the mean consumption floor of the poorest people in society has remained more or less unchanged (at around \$.67 per day in 2005 PPP) since the early 1980s.

Table 6a: Changes in mean income from national accounts and in absolute inequality, 2000s

Income classification		No.	GNI per capita (Atlas Method)			Absolute Palma (2005 PPP)		
c2000	Final		c2000	Final	% change	Initial	Final	% change
LIC	LIC	27	316	569	80	111	140	26
	to LMIC	14	534	1,665	212	162	209	29
LMIC	LMIC	20	1,366	2,618	92	419	424	1
	to UMIC	19	1,893	5,655	199	446	600	35
UMIC	UMIC	15	4,211	8,527	102	801	1,187	48
	to HIC	5	5,473	14,385	163	631	912	45
HIC	HIC	21	25,593	41,444	62	1,730	1,910	10

Source: Author computations of data from PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>). c means circa.

another. Absolute inequality has risen in all countries, and it will do so in most growing countries. So this finding is not particular to countries transiting from low- to lower-middle-income status.

1.9 Conclusion

In this section, we have challenged several stylised facts surrounding the growth experience of LICs over the past decade, and links between growth and inequality. By interrogating data from national accounts and household surveys, we show there is little evidence of a middle-income trap linked to rising inequality or that countries that have moved from the low- to the lower-middle-income category experience higher (relative) inequality than those that have

not. Instead, the data suggests great variability in country experience and that aggregated results can be distorted by very few outlying observations. Our juxtaposition of data from different sources suggests that the move from low- to lower-middle-income status may be more arbitrary than previously thought, in that countries that have ‘graduated’ and those that have not have roughly the same average incomes when measured using household surveys. We show that this is partially attributable to the problematic Atlas Method of obtaining cross-nationally comparable income data. Finally, we show that nearly all categories of countries have experienced rises in inequality according to a more extreme absolute measure – that is, that absolute gaps between rich and poor have not closed, but rather, widened.

Table 6b: Changes in mean income from household surveys and in absolute inequality, 2000s

Income classification		No.	Survey Mean (2005 PPP)			Absolute Palma (2005 PPP)		
c2000	Final		c2000	c2010	% change	Initial	Final	% change
<\$2	<\$2	20	506	573	13	110	124	13
	to \$2-4	9	587	925	58	119	167	40
\$2-4	\$2-4	16	1,055	1,167	11	211	215	2
	to \$4-10	6	1,128	2,153	91	219	356	63
\$4-10	\$4-10	23	2,325	2,703	16	545	587	8
	to >\$10	20	2,822	4,830	71	595	955	61
>\$10	>\$10	28	11,124	12,760	15	1,479	1,707	15

Source: Author computations of data from PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>). c means circa.

2. An analysis of the distributional pattern of growth in selected countries

2.1 Overview

In this section, we focus on data from household surveys in order to provide a very finely disaggregated picture of how different groups in society are faring in relation to economic growth and where policy should focus. In particular, we analyse distributional patterns of growth in five countries that are approaching or have recently graduated from low-to middle-income status: Uganda, Ghana, Ethiopia, Vietnam and Bangladesh. These countries were selected from the 22 Ministry of Foreign Affairs (MFA) ‘priority countries’,⁹ based on data availability, geographic diversity and distinct growth experiences since 2000.¹⁰

In the past decade, all these countries have experienced remarkable economic growth accompanied by considerable progress in many dimensions of human development, such as education and health. This section aims to investigate whether and how the population as a whole has benefited, or rather, whether some segments of the population have been left out, widening the gap between wealthier and most deprived groups.

By applying the pro-poor growth toolbox (e.g. Grosse et al., 2008; Klasen 2008) to several waves of survey data for each of these countries, we seek to quantify the extent to which economic growth and progress in the education sector have been pro-poor. As these scholars argue, for a certain indicator in the income or non-income space, growth can be defined as ‘pro-poor’ if (1) the indicator’s growth rates of the poor are positive (‘weak-absolute’ definition); (2) the indicator’s growth rates of the poor

are higher than the growth rates in means (‘relative’ definition); and (3) the absolute increases for the poorest percentiles are larger than the absolute increase in means (‘strong-absolute’ definition).

Each of these three definitions informs us of the extent to which the poor have benefited from growth. Under the first, least restrictive, criterion, the focus is on the poorest percentiles only. Under the second criterion, we take into account the distributional pattern of growth and thereby address the question of relative inequality. The last criterion addresses the question of absolute inequality. But, as already shown above when discussing trends in absolute inequality, strong-absolute pro-poor growth is rarely achieved if applied to the case of income growth (White and Anderson, 2001; Klasen, 2008). It is, however, particularly informative when analysing progress in non-income dimensions, such as education or health. These dimensions are usually characterised by the existence of a predefined upper or lower bound (e.g. 100% immunisation among a particular age group, 0% dropout rates in primary school) where therefore strong absolute pro-poor growth is more feasible. Also, in these dimensions improvements are usually discussed in terms of absolute increments, not growth rates (Klasen, 2008).

The definition of ‘the poor’ that we use throughout this section comprises the poorest 25% of the population. The following subsections present our findings for each of the countries under investigation. Section 2.7 summarises the key findings and outlines the main concluding remarks.

9 Danish priority countries for development cooperation in 2015 were: Burkina Faso, Ethiopia, Ghana, Kenya, Mali, Mozambique, Niger, Somalia, South Sudan, Tanzania, Uganda, Zimbabwe, Afghanistan, Bangladesh, Myanmar, Palestine, Indonesia, Nepal, Pakistan, Vietnam (ending in 2015) and Bolivia. Note Bhutan, Bolivia and Tanzania were not included in the analysis for the following reasons: the MFA country programme in Bhutan is ending in 2015, the Bolivia country programme is unique given it is the only MFA country in Latin America and the Tanzania country programme has recently commissioned extensive work on inequality and poverty that is very similar to this project.

10 Given a lack of internationally comparable poverty and inequality data, six countries were excluded from the analysis: Afghanistan, Myanmar, Palestine, Somalia, South Sudan and Zimbabwe. Additionally, Pakistan was excluded because of ongoing debate regarding the reliability of World Bank and national government survey data (see Khan et al., 2015), and data for Mozambique were not provided in a sufficiently ‘clean’ format. In Niger and Kenya, consumption growth was on average negative throughout the period; these countries were excluded in favour of a focus on countries that had experienced positive growth. Namibia was removed because its Gini coefficient exceeded 60 – making it one of the most unequal countries in the world.

2.2 Uganda

Based on household survey data that span the 1999-2012 period, the distributional pattern of economic growth in Uganda has been unequal. The Ugandan economy, in which mean income grew by an estimated 5% per year during this period,¹¹ has seen a considerable increase in the Gini Index of about 7 percentage points and a substantial widening of the income gap between the richest 10% and the poorest 40%. In 2011/12, the top 10% of the population held twice as large an income share as the poorest 40%, compared with 1.35 times as much in 1999/00 (Table A1).¹² These findings are echoed in other studies (e.g. Deininger and Okidi, 2001; Ssewanyana, 2010; Ssewanyana and Kasirye, 2012), which further point to significant rural-urban and regional inequalities in rates of poverty reduction. High growth ensured that poverty headcounts nevertheless went down from 33.8% in 1999 to 19.5% in 2012 (Beegle et al., 2015).

Per capita expenditures of the poorest 25% of the income distribution have grown – in relative and in absolute terms – much more slowly than for the remaining parts of the distribution, especially during the early 2000s, when relative growth rates were strictly increasing over income percentiles (Figure A1). Only in the second period considered, from 2005 to 2011, was the trend slightly more equalising – but it was still very much in favour of the richest 10 percentiles (Figure A2).

On the other hand, the substantial improvements the country has realised in the education sector have predominantly benefited the poorest and the less educated percentiles, according to both the relative and the strong-absolute definition. Indeed, our results suggest that, while average years of schooling for adults aged 15-30 years increased by about two years between 1999 and 2011, this figure moves up to almost three years for the poorest 25% of the income distribution, and almost four years for the least educated ventile (Table A1, panels B and C).

2.3 Ghana

After a decade of stagnation in which scanty growth spurts were heavily concentrated in the top 30% of the income distribution (Figure B1), from the late 1990s onwards growth of the Ghanaian economy started to accelerate in a remarkable way. Between 1998 and 2005, mean per capita expenditure grew by about 9% per year and growth continued (albeit at lower rates) in the late 2000s.

While per capita expenditures of the poor have increased, these gains have been relatively lower than those enjoyed by the upper portion of the distribution, especially in the early 2000s (Figure B2). Nevertheless, in the subsequent period (from 2005 to 2012), growth became pro-poor in the

relative sense, with per capita expenditures of the bottom 25% growing faster than mean expenditure, and with the richest 10% slowing their path of growth (Figure B3).

In terms of education, our results suggest the country – which features relatively high initial levels, compared with other Sub-Saharan African countries – has made some improvements in further raising education levels in terms of years of schooling. These improvements, driven by the period from 1991 to 2005 (Table B1, panel b), have also been largely experienced by the least educated percentiles (Figures B7 and B13), in both the relative and the strong-absolute sense, implying that increased social services provision has had a fairly universal reach.

2.4 Ethiopia

From the late 1990s until 2011, mean per capita expenditures in Ethiopia grew by 4.3% per year, and income inequality has been decreasing, albeit only recently. Despite an initial period of stagnation on the Gini index, the country has recently made some improvements in terms of reducing income disparities between the richest and the poorest shares of the population: Ethiopia's Gini has decreased by about 3 percentage points and, contrary to trends in the other Sub-Saharan African countries analysed here, the Palma Ratio has declined (Table C1). This implies that per capita expenditures of the bottom 40% of the income distribution have grown relatively faster than those of the richest 10% (Figure C2).

The growth incidence curves clearly show that economic growth has been largely pro-poor in the relative sense, with per capita expenditures in the bottom 25% growing – on average, and in each of the sub-periods considered – faster than mean per capita expenditures, and faster than richer parts of the income distribution.

Education levels remained quite low in the early 2000s, but, owing to substantial improvements in the 2004-2010 period, average years of schooling of adults aged 15-30 years grew by about a year between 1999 and 2010 (Table C1, panel B). In the first period considered (1999-2004), improvements in education levels were limited to the most educated percentiles (see Figure C4), but more recently a pro-poor pattern of growth in relative terms has emerged in education. This is probably because of massive investments by the Ethiopian government in social infrastructure and especially in education (UNDP, 2014).

2.5 Vietnam

Between 2002 and 2012, Vietnam recorded impressive rates of economic growth, which, despite the 2007 financial crisis, remained at very high levels (7.6% growth in means per year). This allowed the country to

11 Annualised growth rates of mean incomes per adult equivalent in 2005 US\$ PPP terms.

12 The estimates for Uganda presented in this section are based on consumption expenditures per adult equivalent (p.a.e.), which can divert from estimates based on per capita expenditure. In particular, since poor households tend to have more children, we would expect to find less income inequality if income is considered in p.a.e rather than per capita terms.

transition to middle-income status in 2009. As shown in several UN reports (e.g. UNDP 2011 and the September 2011 Millennium Summit), these massive economic developments were accompanied by progress in poverty reduction: the poverty headcount fell by more than 20 percentage points in the 2000s. Yet poverty reduction seems to have been uneven across regions and among different population groups (UNDP, 2011).

Indeed, in the early 2000s, growth was not pro-poor in the relative sense (Figure D1), and it has mostly favoured the 40th to 80th percentiles. However, more recently (2006-2012), the trend has become pro-poor in relative terms, and the 10th to 60th income percentiles have experienced much higher growth rates than the rest of the population. Overall, income inequality decreased slightly over the period under investigation and the gap in income shares between the poorest 40% and the richest 10% has not declined substantially (Table D1, panel A).

Average education levels have increased by about two years, and the gains of these developments have been mainly enjoyed – in relative terms – by the poorest and most education-deprived 25 percentiles (Table D1, panels B and C). However, gains in education have not always been pro-poor under the strong-absolute definition. In particular, gains in years of education could not narrow the education gap between the poor and rich.

2.6 Bangladesh

Between 2000 and 2010, Bangladesh experienced growth in mean per capita expenditure of 4.2% per year. Even though income growth was pro-poor in the weak absolute and relative sense – with per capita expenditures among the bottom 25% growing on average 4.4% annually – absolute income gaps and aggregate measures of income inequality did not narrow substantially (Figure E1 and Table E1).

Turning to non-income dimensions, levels of adult literacy (age 15 years and above) have considerably improved across the income distribution over time, but are still fairly low at 56% of the adult population in 2010 (Figure E3). We find that average number of years of schooling has increased by 1.4 years over time (Figure E2 and Table E1, panel C). Growth in years of schooling has been pro-poor in the relative and absolute sense when looking across income percentiles, which implies a narrowing of the education gap between the poor and rich (Figure E4).

From the viewpoint of education percentiles, growth in years of schooling was not positive for the least educated percentiles and was thus not pro-poor towards the most education deprived (Figure E5). Primary gross enrolment stood at 104% in 2010, and around 100% in 2005 (WDI

2015). The primary completion rate among school-age children was 57% in 2008 and had increased to 75% in 2011 (WDI 2015). This pattern is consistent with an expansion of education primarily at the primary and lower-secondary levels.

2.7 Summary

Our analysis has shown that, since the late 1990s, growth in per capita income has been strong in all five countries we examine – with changes in average per capita expenditure ranging from an estimated annual 4.2% in Bangladesh to 7.6% in Vietnam, over the period of 10 years or more.

At the same time, income inequality, as measured by the Gini index, remained stable or slightly decreased in Bangladesh, Ethiopia and Vietnam and increased markedly in Uganda and Ghana, by seven and five Gini points, respectively.

As implied by the positive growth rates in the lowest percentiles of the income distribution (Tables A1, B1, C1 and D1, panels B), the poor have benefited to some extent from economic growth, which means growth was pro-poor according to the least restrictive, weak-absolute, definition. However, in most cases analysed, income growth has not been pro-poor in either the relative (i.e. the income of the poor growing faster than that of the non-poor) or the strong-absolute (i.e. the absolute income increases of the poor being larger than those of the non-poor) definitions. However, in the late 2000s, for four out of the five countries considered in this study (Ghana, Ethiopia, Vietnam, Bangladesh), some improvements – visible in the relatively faster growth rates in the expenditures of the poorest – have started to appear.

Outcomes have generally been pro-poor in important non-income dimensions – that is, in education. As our results for the conditional and unconditional NGIC suggest, Uganda and Ghana are the best performers among the group of countries considered: improvements in education have been recorded mainly among the bottom percentiles of the income and education distributions, in both the relative and the absolute senses.

The pattern of educational gains over the income distribution has been slightly less pro-poor in Vietnam, a country with relatively high initial levels of education (Table D1, panel C). However, as implied in our results in Table D1, panel B, considerable progress has been made in relative terms in providing the education-poor with schooling. Similarly, in the Ethiopian case, our results suggest that at the end of the 2000s the education levels of the initially less educated percentiles were growing much faster than the average rate of growth in years of schooling.

3. Explaining distributional patterns of growth: the cases of Ethiopia and Uganda



Farmers growing tomatoes in Ethiopia. Photo: © Stephan Bachenheimer for the World Bank.

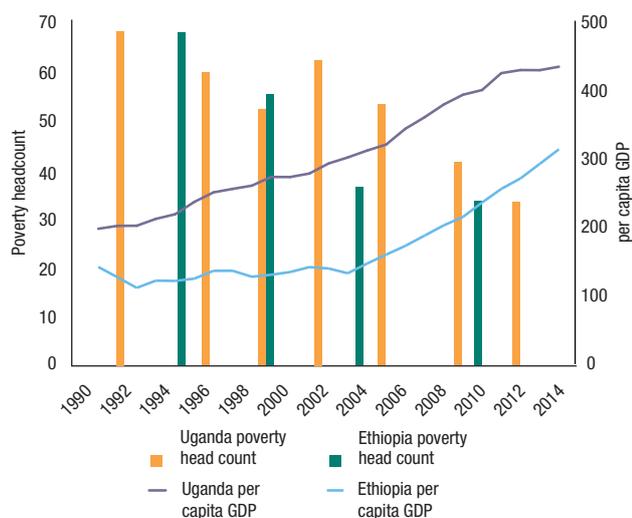
3.1 Overview

Section 1 showed that, while on average LIC growth has been associated with a rise in inequality, the relationship has been weak and non-deterministic. Section 2 provided a detailed overview of shifts in the distribution of income and education in five countries over the past decade or so, in relation to growth. It showed considerable variation between countries and in different parts of this time period. We infer from this that policy matters in conditioning the relationship between growth and inequality. In this section, we aim to understand better some policy drivers of the

shifts observed in two of these countries, Ethiopia and Uganda, and to understand better the different inequality trends that are observed.

These two countries share some initial similarities, being poor, East African, land-locked countries with a history of conflict and a recent experience of rapid economic growth. But the growth experiences of Ethiopia and Uganda have diverged with the latter enjoying higher growth through the 1990s and early 2000s. In both countries, the poverty headcount was around 68% in the early to mid-1990s and the ratio fell by 35 percentage points (as shown in Figure

Figure 8: Per capita GDP and poverty headcount in Ethiopia and Uganda, 1990-2012



Source: World Bank, 2015a.

8).¹³ But as the analysis in the previous section showed, the Palma Ratio in Ethiopia fell by about 15% while that in Uganda may have risen by nearly one-third.¹⁴ In this section, we explore circumstances and influential policies in each country seemingly related to these contrasting patterns.

3.2 Ethiopia¹⁵

Introduction

With a history mired in internal and regional conflict and major humanitarian crises such as the 1984 famine, Ethiopia's story of progress is relatively recent. It has exhibited one of the largest absolute declines in extreme poverty in Sub-Saharan Africa, from 63% in 1995 to 37% in 2011 (World Bank, 2015a). Access to primary education has more than tripled, from 26% gross enrolment in 1994/95 to 95% in 2012/13 (see NPC and UNDP, 2015). Secondary enrolment reached 34% in 2013; it is notable that Ethiopia is approaching the Sub-Saharan African average, given its very low starting point. The country has also experienced one of the most marked declines in the intensity of multidimensional poverty among countries for which longitudinal data are available, although again from an extremely high initial level (Alkire and Roche, 2013). Also striking, while income inequality has increased in many countries over the past decade, Ethiopia has

maintained one of the lowest levels of inequality among LICs and LMICs: it is ranked 12 among 84 countries with available data and third in Sub-Saharan Africa, according to World Bank estimates. Meanwhile, Ethiopia's economy has grown at an average of 11% over the past 10 years – not only the fastest rate in Sub-Saharan Africa but also among the highest worldwide.¹⁶

When Mengistu and the Derg overthrew the feudal system of Emperor Haile Selassie in 1974, they put in place a repressive socialist-military dictatorship with little regard for human rights. Its economic policies involved the confiscation and redistribution of land and the restriction of migration (Devereux et al., 2005). This led to a relatively equal distribution of assets, including access to land; other assets, such as education and capital, did not play an important role in this extremely poor country. When Meles Zenawi ended the socialist regime in 1991 and oriented Ethiopian policies around market mechanisms and democracy, inequality levels climbed dramatically, but they have since slowly decreased again.

Ethiopia's challenges have by no means been overcome. The depth and breadth of chronic poverty that remains will still be very challenging to tackle. While more children are attending school, the quality of education they receive has not improved, nor have gains in attendance fully extended to higher levels of education. Moreover, there are concerns around governance, such as restraints on civic participation, limitations on the activities of civil society and restricted political competition, including electoral inconsistencies and restrictions on political opposition (Freedom House, 2014; Human Rights Watch, 2015; UNDP, 2014). While this case study does not go into depth on these governance issues, this is not to suggest they are not important factors underpinning and potentially limiting progress.

Nonetheless, the exceptional progress Ethiopia has made in the past 10-15 years offers some important lessons for countries looking to scale up the ambition of their development agendas as well as for development partners.

What has been achieved?

Monetary poverty and inequality

Poverty reduction has been dramatic in Ethiopia. GNI per capita (current US dollars, Atlas Method) climbed from \$120 in 2002 to \$470 in 2013, nearly quadrupling in 11 years (World Bank, 2015a). Notably, income inequality has remained low: in fact, the Gini index *declined* during this

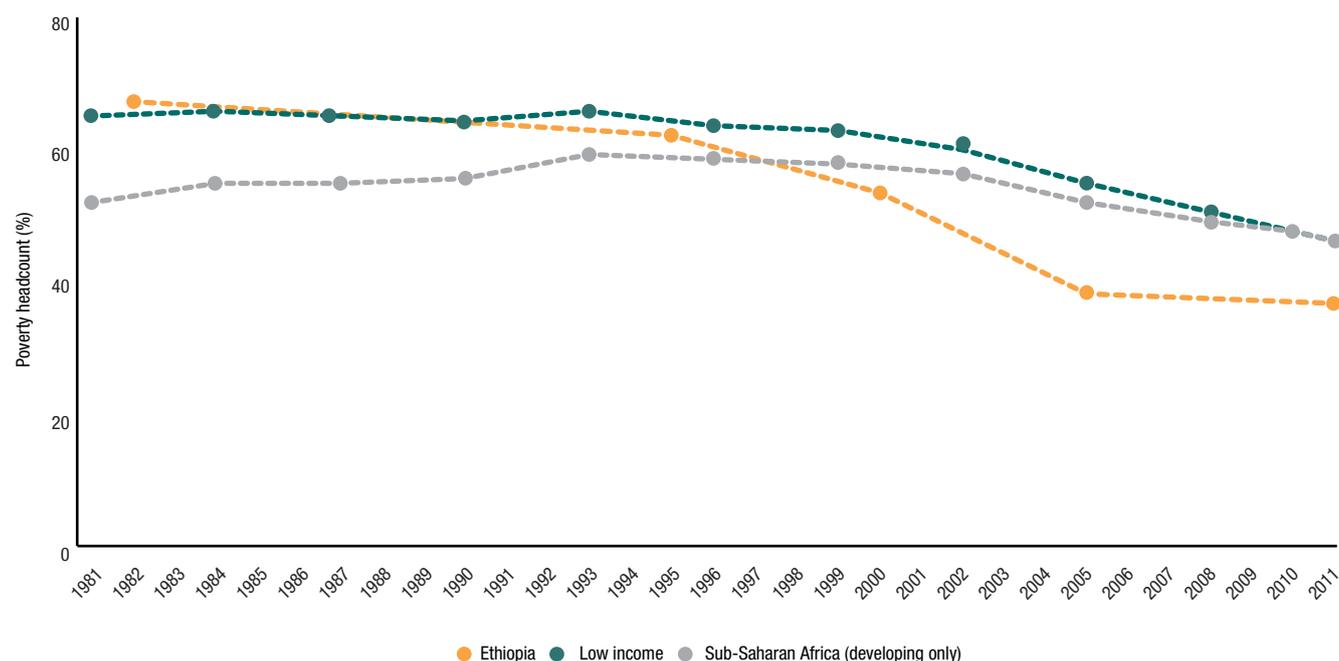
13 In Uganda, the poverty headcount fell from 68.1% in 1992 to 33.2% in 2012. In Ethiopia, it fell from 67.9% in 1995 to 33.5% in 2010.

14 According to the WDI (2014), income inequality was higher in Ethiopia than in Uganda in the early 1990s. While it decreased by about 25% in Ethiopia in the 2000s, in Uganda it remained roughly constant according to the Gini coefficient – but at a substantially higher level than in Ethiopia. This is not entirely consistent with the findings of the previous section, which is partly because of the use of different income concepts as well as surveys. This is an area for further investigation.

15 Source is Lenhardt et al. (2015) unless otherwise noted.

16 The only countries to have grown at a higher rate, averaged over the past 10 years, are Qatar, Macao, Azerbaijan and Iraq.

Figure 9: Poverty headcount ratio at \$1.25/day (PPP) in Ethiopia, 1981-2011



Source: World Bank (2014a).

period of significant poverty reduction and high growth.¹⁷ This suggests material gains have been made even at the lower end of the income distribution. The analysis of micro data in Section 2 confirms that the poorest percentiles experienced consumption growth throughout the 1999-2011 period and that this growth was relatively pro-poor – but not so much as to close absolute income gaps between rich and poor.

In 1982, when Ethiopia’s poverty headcount ratio was first calculated, the country stood out as one of the poorest in the world, with 69% of the population living below \$1.25/day – well above the Sub-Saharan African average of 53% in 1981 (among the limited surveys available). In 1995, when Ethiopia’s poverty was next surveyed, very little progress had been made – with only a 6 percentage point decline over those 14 years, to 63%. Between 1995 and 2011, poverty reduction in Ethiopia outpaced both the LIC and Sub-Saharan African averages (Figure 9). A reduction in spatial inequality is visible in a convergence of poverty rates across Ethiopia’s regions; in 2011, in all regions, the poverty rate ranged between 30% and 36% (World Bank, 2014a). Poverty in rural areas fell nearly 20 points, from around 50% in 1995 to 30% in 2011. Urban poverty reduction has lagged: the urban headcount rose from 33% in 1995 to 37% in 1999, before declining to 26% in 2011.

Progress in education

Primary enrolment has improved rapidly over the past 20 years, and progress has been evenly distributed spatially and by gender. The numbers of pupils in secondary education have also risen markedly, although enrolment rates have fallen below government targets, partly because of a lack of rural secondary schools and a high dropout rate at primary completion stages. Enrolment in tertiary education has also increased rapidly, with a high proportion of students taking vocational and technical courses.

Throughout the 1990s and early 2000s, net primary enrolment increased by 3.1% on average each year, faster than in any country in Africa – this, despite population growth of 3% per year over the 1990-2010 period (World Bank, 2014b). More recently, the rate of improvement has predictably slowed, as efforts to increase access have spread to more difficult, remote locations and harder-to-reach families. Nonetheless, over the 2004-2011 period, the least educated acquired education at a rate that was faster than the average, if not enough to close the gap with the most educated (see Section 2).

The most recent Ethiopian Federal Ministry of Education (EFME) statistics show net enrolment in primary education reached 86% in 2012/13 (EFME, 2013). Ethiopia also displays one of the highest rates of improvement in gender disparity in primary enrolment globally: the ratio of girls to boys enrolled improved

17 Inequality has increased since 2005, when the Gini was estimated at 0.30. Interviewees cited rises in urban inequality, as does the recent World Bank Poverty Assessment of Ethiopia (World Bank, 2014a).

from 0.66 in 1991 to 0.94 in 2012/13 (ibid.). Secondary education has been slower to develop: in 2012/13, the gross enrolment ratio for secondary education (Grades 9 and 10) was still just 38%. In absolute terms, however, this represents an increase in enrolment from less than half a million in 1996/97 to almost 22 million in 2012/13, and girls outnumber boys owing to higher primary school completion rates (ibid.).

Primary education in Ethiopia is, by law, free and compulsory, whereas the pre-primary and secondary levels are not. Much of the secondary enrolment bottleneck owes to the urban concentration of secondary schools; only 32% of rural households are within a 10 km radius of a secondary school (Jennings, 2011). Encouragingly, the latest five-year government education policy is planning to extend over 3,800 mainly rural primary schools, to provide them with a lower secondary education (EFME, 2013). In keeping with the greater numbers leaving Grades 11 and 12, technical and vocational education and training (TVET) and university education systems in Ethiopia have expanded rapidly. In 2012/13, more than 700,000 students were enrolled in university undergraduate programmes, although enrolment was highest among men (70%), and there were more than 300,000 TVET students in the country, with enrolment largely equal between men and women (EFME, 2013).

There is wide consensus that improved access is not reflected in attainment (see EFME 2008, 2013). In fact, many argue that rising enrolment rates have led to a decline in quality. A large national programme, the General Education Quality Improvement Project (GEQIP), is dedicated to improving teaching and learning conditions in schools (World Bank, 2014c).¹⁸ The National Learning Assessments (funded by GEQIP) show declining education outcomes over the past decade, and the repetition rate in primary education has more than doubled from a recent low of 4% in 2003/04 (EFME, 2008) to above 8% in recent years (EFME, 2013). Some of this increase reflects a school-level reversal, in many parts of the country, of an earlier automatic promotion policy in the first four grades of primary. The apparent decline in quality may also be explained by rapid increases in enrolment, meaning a large increase in students from the poorest backgrounds, who face greater challenges.

What factors explain poverty and inequality reduction?

High and sustained economic growth, particularly in agriculture

Ethiopia's near unprecedented growth rate of 11% over the past 10 years can be attributed to a number of factors, including the country's social and political stabilisation in the mid-1990s, a favourable investment climate relative to

many neighbouring countries and conducive government policies that have facilitated growth while also encouraging diversification (AfDB, 2010).

A focus on agriculture-led development has been integral to Ethiopia's recent development strategy, notably the Agricultural Development-Led Industrialization (ADLI) programme, initiated in 2005 together with the IMF and the World Bank. Some 75% of the Ethiopian population is still employed in agriculture, with no noticeable increase in non-farm and off-farm employment in rural areas (de Vries et al., 2013), and agriculture still accounts for over 40% of value added as a share of GDP (World Development Indicators 2015). Livelihoods among poorer rural Ethiopians, the majority, therefore remain largely tied to self-employment in agriculture. Despite the ending of socialism in 1991, the state still owns land and distributes it to farmers through a leasehold system. With nearly 85% of the population still living in rural areas, this land distribution mechanism has played a crucial role in keeping inequality levels low. Because increases in agricultural output occurred mainly by increasing the amount of land cultivated, the ADLI programme was implemented to increase the use of agro-chemical inputs and improve infrastructure linkages between sectors.

When Ethiopia split from Eritrea in 1991/92, the cost of exporting cash crops increased dramatically, given the country's landlocked status (most exports are now shipped off via Djibouti's harbour). This is also a contributor to the country's low levels of inequality (but also high levels of poverty). As a consequence, the majority of agricultural production serves only Ethiopia's own national market.

The level of Ethiopian investment in agriculture has been notable. Government spending on agriculture in Africa as a whole has declined since 1990, from 5.9% of GDP to 2.7% in 2013. In 2003, African governments signed the Maputo Declaration, agreeing to allocate at least 10% of national budgetary resources to agriculture and rural development policy implementation within five years. Only 14 countries have met or exceeded this commitment. Ethiopia is among the seven countries that have exceeded the target in most years (Benin and Yu, 2012), having consistently allocated over 15% of total national expenditure to agriculture. While donors have contributed some finance to agricultural development, the Ethiopian government has maintained a large share of the investment.

Government policy has targeted agricultural productivity while also facilitating the flow of benefits from agricultural growth towards poor people. A key pillar has been the construction of rural roads that allow farmers to access markets. The country's road density increased from 29 km to 44.5 km per 1,000 km² between 2000/01 and 2009/10 and the average time it takes to reach an all-weather road reduced from about 7 hours in

¹⁸ GEQIP is supported by the World Bank, Education for All, the UK Department for International Development, the Netherlands Ministry of Foreign Affairs and a number of other bilateral donors.

2000/01 to 3.7 hours over the same time period (IFAD, 2015). Ethiopia is a top recipient of aid for infrastructure, but the government has also invested heavily from its own resources, spending a quarter of each year's infrastructure budget on roads (FDRE, 2015).

The government has also directed investments to its **agricultural extension/advisory programme**. Between 2004/05 and 2009/10, 61,785 extension workers were trained and 9,265 farmer training centres were established, one in every village (GRIPS Development Forum, 2011). Again, although donors provided some finance for agricultural extension, the Ethiopian government has also heavily invested its own resources. As a result, the government has been able to maintain a great deal of independence over its agricultural extension programmes, whereas most other African countries have seen their extension programmes retreat under the terms of market liberalisation (Berhanu and Poulton, 2014).

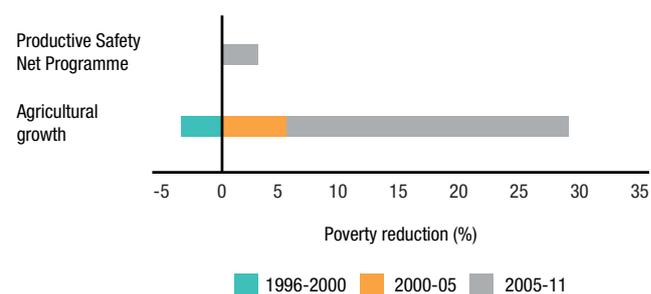
A recent World Bank study finds that the agriculture sector has contributed more than any other sector to poverty reduction since 1996 (World Bank, 2015b). The study estimates that agricultural growth led to reductions in poverty of 4.0% per year on average between 2005 and 2011 (Figure 10).

Social protection

Ethiopia's Productive Safety Net Programme (PSNP) is the largest social protection programme in Africa and a key driver of poverty reduction. The PSNP was introduced in 2005 as a response to the inefficient use of food aid. Such aid was then being used to resolve periodic crises resulting in food shortages, and to address chronic food deficits in the country's poorest areas. The programme targets the most vulnerable areas and households in order to increase poor rural families' long-term resilience – both to prevent asset depletion among chronically food-insecure households but also to build community assets. The programme provides unconditional, predictable transfers (in cash or food) in periods of food deficit and requires able-bodied adults to participate in communal productive activities, for example rehabilitating land and water resources and developing community infrastructure such as roads, schools and clinics.

In 2010, roughly 1.5 million households participated in the PSNP (approximately 10% of the country's population). The programme is mainly donor-funded and its budget represents 1.2% of Ethiopia's GDP (Lieuw-Kie Song, 2011). The public works component has also reduced unemployment by creating numerous job opportunities (which pay selected beneficiaries \$0.75 a day), with an estimated 1.2 million workers employed annually (ibid.). One estimate by the World Bank (2014a) suggested that PSNP transfers had reduced poverty by 7% since 2005. By increasing agricultural input use, the PSNP has also improved agricultural productivity in rural areas and so contributed to reducing poverty and inequality.

Figure 10: Contributions to poverty reduction among different sectors in Ethiopia, 1996-2000 to 2005-2011



Source: World Bank (2015b).

Graduation from the programme is the long-term goal, and this is measured by food security and household asset indices (set at the community level). According to these criteria, around 500,000 people have graduated from the PSNP since 2005. However, improvements in food security have tended to lag behind improvements in asset holdings (Hoddinott, 2014), and, despite the integration of gender-specific vulnerabilities in the programme's design, there are concerns over whether women's participation has been meaningful (Jones et al., 2010).

Other social protection programmes, collectively called the Other Food Security Programme (OFSP), are designed to encourage households to increase income generated from agricultural activities and to build up assets. Beneficiaries of the OFSP can receive at least one of several productivity-enhancing transfers or services. While the PSNP is large and covers about 7 million chronically food-insecure households, the OFSP is limited in coverage.

Scale of ambition and investment in education

The 'universalisation of primary education' has been hard-wired into every national development plan since 1995. The close linking of education planning to successive development strategies for nearly two decades has been both deliberate and consistently implemented. Unlike in many other countries, the expansion of education infrastructure and teacher training and deployment has not been a siloed initiative, in competition with other resource and planning priorities. Instead, it has always been seen as a vital, time-bound and protected component of the headline strategy of agriculture-led development.

The scale of national ambition and implementation, particularly for universal basic education, is hard to overstate. Working from an extremely low base towards the goal of achieving 100% net primary enrolment meant that new or expanded schools had to be built in virtually every village cluster (*kebele*). A massive school-building programme across the country has both enabled increasing enrolment, providing the facilities to educate and sometimes house students, and fostered demand for education.

From the start of the first Education Sector Development Plan in 1997 to 2012/13, there has been a 190% increase in primary schools in operation.¹⁹ Many of these are in rural, remote regions, and over 80% of all primary enrolment is now in rural areas. Just over 19,000 primary schools were built in two decades from 1992 to 2012, and the number of secondary schools, although slower to expand, grew more than five times over that same period (EFME, 2000, 2013).

This massive effort has been nested within a long-term commitment to spend 60% of the national budget (including aid, which has been very high for basic services over the past decade) on investments and just 40% on recurrent costs – proportions that are likely to require rebalancing gradually in future.²⁰ Moreover, 70% of the capital spend has been deliberately concentrated in just five sectors (education, health, water supply, transport infrastructure and agricultural inputs and services), of which education has systematically been among the three largest. These commitments have been supported through the unprecedented growth of the last decade or so and a tax effort rising to around 13% of GDP (in 2013).

What is behind the multidimensional nature of Ethiopia's progress?

An ambitious multidimensional approach centred on poverty reduction

Discussions with senior Ethiopian policy-makers suggest multi-sectoral development planning has been a core strategy since at least 1995, when Prime Minister Meles Zenawi took office. A key factor contributing to Ethiopia's progress on multiple dimensions of well-being has been the unifying principle of poverty reduction at the core of government planning. The government made a strong statement on poverty reduction in the 2002 Sustainable Development and Poverty Reduction Programme, and it resonates through all subsequent government strategies:

For some countries, economic growth is the primary policy goal, and poverty reduction is to be achieved through measures complementary to growth. This is not the approach of the Ethiopian government. Poverty reduction is the core objective of the Ethiopian government. Economic growth is the principal, but not the only, means to this objective.

Ethiopia's development planning has consistently recognised the need for a multidimensional approach to policy formulation and implementation, and poverty

reduction has been at the core of government policy. Many countries claim such synergies in their planning processes, but few implement them successfully.

Decentralisation and service delivery

This period of progress in well-being coincides with Ethiopia's transition to a more decentralised governance system. As the country emerged from civil conflict in the 1990s and power was consolidated by the opposition forces to the former Derg dictatorship, the 1995 Constitution introduced a unique ethnic federalist system with devolved political, fiscal and administrative powers to nine regions (based on ethnic nationalities), and the Ethiopian People's Revolutionary Democratic Front (EPRDF) took control of central government (Dickovick and Riedl, 2010). The ethnic tensions that have fuelled conflict throughout Ethiopia's history largely motivated the design of this unique system, and the devolution of power was established as a political compromise among divided groups.

One empirical study measured regional disparities in education service delivery before and after decentralisation, finding the largest improvements in education in some of Ethiopia's poorest regions. For example, the aggregate budget for education in the Southern Nations, Nationalities and Peoples region increased 44% in remote districts (*woredas*) and only 9% in *woredas* less than 50 km from a zonal capital (Garcia and Rajkumar, 2008). The narrowing of gaps in education outcomes was also observed after decentralisation in gross enrolment rates, Grade 8 examination pass rates and pupil–teacher ratios.

Decentralisation is governed by clear, explicit processes, including a devolved budget formula that includes built-in correctives for regions that are measurably disadvantaged in terms of service coverage. This allows an element of local flexibility while reinforcing the strong emphasis on achieving and maintaining equity across regions. While decentralisation has sought to bring decision-making power on social and economic affairs to local areas, there are concerns that the system does not devolve enough power, particularly fiscal powers, to the *woreda* level, and the EPRDF maintains considerable political authority. Overall, however, with its decentralisation 'experiment', Ethiopia has fared quite well compared with other countries (USAID, 2010a). Many cited the policy performance matrix, which forms part of the Growth and Transformation Plan (GTP) strategy, as an effective feedback mechanism for all levels of government to ensure policy outcomes contribute to the national poverty reduction agenda.

19 Calculations based on several Education Statistics Annual Abstracts.

20 Interview, Federal Ministry of Finance and Economic Development.

Harnessing education to improve agricultural productivity and reduce poverty

Successive phases of the government's GTP, centred on 'agriculture-led industrialisation', intended to boost land productivity through an integrated, multi-pronged approach. This involved a massive injection of the traditional mechanisms of agricultural extension and input and rural infrastructure development, but also, and crucially, universal education. There are a number of channels through which additional education can credibly improve farm productivity and thus lead to higher rural incomes and poverty reduction. Education of the farming family head or 'manager' enables and allows for better choices of output and input mix, the confidence to opt for a higher-value crop mix and the adoption of improved soil and water conservation practices. Education of other ex-student workers on the farm assists managers in their choices and can also enable these workers to source non-farm income to pay for farm improvements and act as a risk buffer. In a study of 95 developing countries from 1961 to 2002, Reimers and Klasen (2013) find that each additional year of schooling increases farm output by approximately 3% per year, on average. In a study of 14 Ethiopian villages producing cereals using traditional methods, Weir (1999) finds significant positive returns to additional years of schooling on crop output, and that the social benefits of schooling – raising the average additional attainment in the village rather than the individual household – have an even greater effect on farm productivity, primarily through the spread of better knowledge.

What are the challenges?

Ethiopia's progress over the past two decades has been remarkable, but important challenges remain.

Limited improvements in well-being for the poorest

Between 1996 and 2005, growth in consumption among the bottom 10% of the income distribution was higher than for the rest of the income distribution, meaning the chronically poor benefited proportionally more than the average. However, this trend reversed between 2005 and 2011, and the poorest saw consumption losses of 0.5% per year (World Bank, 2015b). The latest World Bank (2015b) Poverty Assessment found that some households today are substantially poorer than any household in 2005. A lack of physical assets, limited access to education and remoteness have prevented chronically poor households from engaging in activities that could lead to improved material wellbeing, leaving them 'permanently behind' (Dercon et al., 2011). Further evaluation of the effects of policies is needed to identify persisting barriers for the poorest households.

Incomplete transformative change

Ethiopia has made progress in employment quantity and quality, but unemployment in urban areas and low-quality employment in rural areas are limiting the extent to which

this progress has contributed to material well-being for the poor. These patterns are related to limited structural change in the economy resulting from low levels of manufacturing growth along with inefficiencies and limited competition. These challenges are extremely difficult to tackle and require a threefold strategy that combines further support to agricultural productivity, expansion of labour-intensive manufacturing industries and the creation of additional sources of skilled labour (e.g. higher-value manufacturing niches). This would allow rural workers to move to the expanding manufacturing sector, maintain competitive labour costs and at the same time create new job opportunities for both low- and higher-skilled workers in urban areas.

Poor quality of education and sustainability of educational expansion

In 2010, fewer than half of the minority of students who proceeded beyond Grade 5 completed primary education (Joshi and Verspoor, 2012). Of those who went on to take the Grade 10 national learning achievement exams, 77% failed to achieve the prescribed minimum benchmark of 50% in each test. In Grade 12, the corresponding proportion was between 38% and 64% (depending on the subject) (USAID, 2014). There are also large gender disparities: boys tend to outperform girls in testing by some margin (Joshi and Verspoor, 2012). Furthermore, the financial burden of attaining (near) universal secondary education by 2025, the current strategic objective, is huge. Ethiopia already devotes 25% of all government expenditure to education, yet fewer than 40% of secondary-age students are currently enrolled.

The current Ethiopian cost structure does not favour the expansion of secondary education. The ratio of per student secondary–primary costs is double that of countries that have succeeded in expanding and universalising secondary enrolment, and is even higher than that of other countries that have yet to make this transition (Joshi and Verspoor, 2012). Ethiopia's ratio of tertiary–secondary costs is even further out of line, measuring several times greater than the ratio for more successful countries.

Lessons learnt

Ethiopia's stability and consequent ability to make long-term plans and investments in education, agriculture and infrastructure over the past 20 years have allowed the country to make great leaps in development. Granted, some critics consider this very stability a by-product of repressive practices, or at least of the restricted contestability of national and local politics. Nonetheless, Ethiopia's experience over the past two decades contains significant lessons that can be applicable in different country contexts.

The integration of sectoral policies can be facilitated through a clearly stated **overriding goal of broad-based poverty reduction**. In Ethiopia, failure to raise basic living standards and reduce vulnerability across all major parts

of the country, long divided ethnically, linguistically and climatically, might well have intolerably strained cohesion between regions in the newly federated state. Therefore, progress needed to be broad-based and equitable. Successive national development plans have targeted rapid mass improvement in rural income and related social indicators, supported by huge investments in education, health, rural roads, input supply and agricultural extension. Such interventions, and the large-scale infrastructure projects that followed, were framed as means to the end of broad-based poverty reduction through rural income growth. Distributional concerns were, and remain, centre stage, allowing Ethiopia to become a regional exemplar of relatively stable and low levels of inequality, despite over a decade of extremely fast income growth.

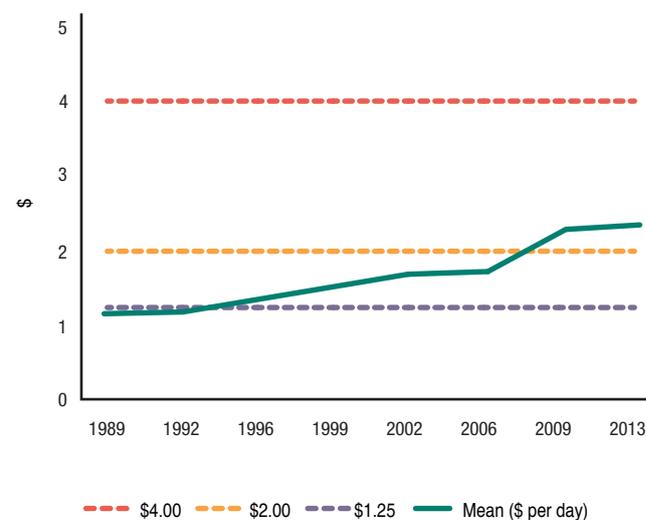
A consistently implemented series of economic development plans is needed to support this goal, with priority for **public investment in pro-poor sectors**. The national economic strategy has consistently relied on relatively high levels of public investment, with a small number of ‘priority sectors’ (including health, education, rural roads, agricultural support and electrification) given absolute priority, receiving allocations of up to 70% of this substantial public investment budget. This very high investment share may have to be progressively reduced as recurrent cost requirements to support prior investments inevitably rise. However, this deliberate concentration on pro-poor investments and **massive intensification of rural infrastructure** has been a powerful and consistent plank of Ethiopia’s economic strategy.

Continuous debate and **coordination between sectoral policies and levels of government** are required to address multidimensional challenges. The national GTP includes a policy performance matrix with key deliverables by all relevant central and regional authorities, with explicit benchmarks. Ministers with widely different portfolios (such as agriculture, higher education, finance and planning), when interviewed, referred in consistent language to benchmarks in each other’s areas and explain how these efforts fitted together. Similar feedback loops occur across different levels of government through the systems established to monitor activities within the decentralised system.

3.3 Uganda

Uganda’s experiences illustrate the challenges many African countries face. While the country has drastically reduced poverty, inequality appears to have risen. This is the result of some policies that have supported relatively pro-poor growth, such as the liberalisation of coffee prices and elimination of user fees in education and health, and others that have fallen short, such as relatively low investments in agriculture.

Figure 11: Mean consumption in Uganda (\$ per day)



Source: Author’s calculations based on PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

What has been achieved?

Monetary poverty and inequality

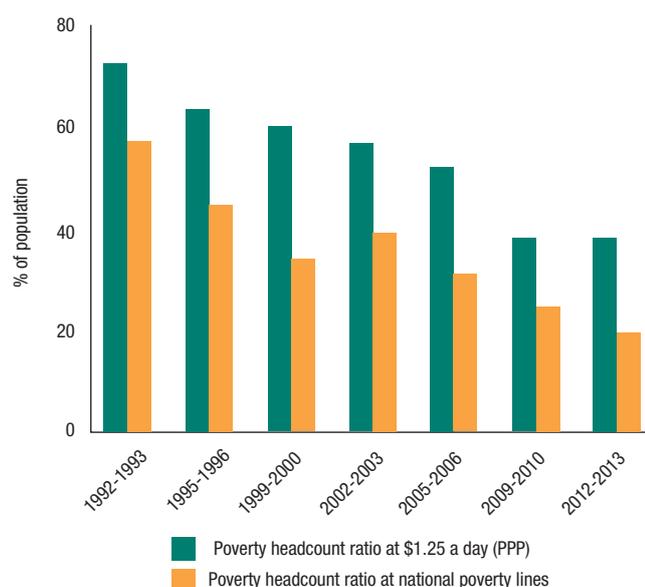
Economic growth in Uganda has been rapid since the early 1990s. GNI per capita has more than doubled, from about \$320 in 1990 to \$680 (current US dollars, Atlas Method) in 2013. This strong growth in mean income has been reflected in rapid poverty reduction. In 1996, average household consumption in Uganda surpassed the extreme poverty threshold and in 2009 it surpassed the \$2 poverty threshold, reaching \$2.33 a day (2005 PPP) in 2012 (Figure 11). The poverty headcount has fallen according to both the national and international poverty lines (Figure 12, overleaf) and across all regions in the past decade; it fell by 18 percentage points in the Central region; 19 percentage points in the Northern region; 22 percentage points in the Eastern region; and 24 percentage points in the Western region (MoFPED, 2014). Particularly salient is the case of the Northern region, which remains the poorest part of the country but has significantly narrowed the gap since peace was restored in 2006 (ibid.).²¹

Inequality, however, has not fallen. Despite some discrepancies in the different data used to compute inequality, the overall trend is similar and discrepancies in the earlier period may be explained by some differences in measurement (Box 1, overleaf).

Overall, throughout the 1999–2012 period, income growth in Uganda was not pro-poor in the relative or the strong-absolute definitions. Consumption has nonetheless grown for all segments of the population, and this has

21 The poverty headcount fell from 74% in 1992 to 44% in 2012. The poverty headcount in this last year was 5% in the Central region, 25% in the Eastern region and 9% in the Western region.

Figure 12: Poverty trends in Uganda



Source: World Bank, 2015a.

Notes: Unlike poverty rates reported by the Uganda Bureau of Statistics (UBOS), those based on the \$1.25 per day line do not adjust for household demographic composition and therefore are consistently higher than national estimates. The rebound in 2002 could be caused by the inclusion of large parts of four districts (Kitgum, Gulu, Kasese and Bundibugyo), which were excluded in 1997 because of the insecurity in the north and west.

driven fast poverty reduction in the country. In addition, pro-poor outcomes have been achieved in non-income dimensions, particularly education.

Progress in education

Universal primary and secondary education (UPE and USE) were introduced in 1996 (and given a boost in 2003)²² and 2007, respectively. This led to an increase in access to services, especially for disadvantaged groups – that is, poorer children (UNESCO, 2013) and children with disabilities (Bategeka and Okurut, 2010), which is reflected in the NGICs (see Section 2). According to World Bank (2002), the wealth bias that had characterised primary school attendance ‘was all but eliminated by 1999’ and the gender gap in enrolment was eliminated by 2000.

The public response to UPE was overwhelming and, alongside population growth, created an ‘access shock’. Gross enrolment in primary school increased from 3.1

million in 1996 to 7.6 million in 2003, up by 145% (Bategeka and Okurut 2006). This was also a much higher jump than in other East African countries with similar initial levels of enrolment that also introduced UPE (Avenstrup et al., 2004). Quality, however, became a growing concern: national tests of third graders revealed that the share receiving a satisfactory score fell from 48% in 1996 to 31% in 1999 on mathematics and from 92% to 56% on English.

What factors explain poverty reduction amid stagnant or worsening inequality?

Macroeconomic stability – a precondition for growth

The continual, rapid growth Uganda experienced from the early 1990s until 2012 has brought about some economic transformation, with value-added in the services sector rising and replacing agriculture as the largest contributor to GDP.²³ This has been driven primarily by developments in banking, telecommunications and transport services (Bategeka, 2013, in Byiers et al., 2015), which in turn resulted from a shift from import-substituting foreign direct investment (FDI) in the 1990s, to FDI investment in services in the 2000s (Byiers et al., 2015). The employment structure of the population has also changed over the past 25 years, albeit less dramatically. Employment in the services sector rose from 13% in 1992/93 to 22% in 2009/10, whereas that in agriculture declined from 83% to 70% (Fox and Pimhidzai, 2011). But, while agriculture remains an important employment sector, a much smaller number of households rely *solely* on agriculture as their source of income (MoFPED, 2014) and a more diversified household livelihood portfolio has emerged (Fox and Pimhidzai, 2011; Kappel et al., 2005; MoFPED, 2014). That said, rates of job creation have barely kept pace with high population growth – the labour force almost doubled between 1990 and 2012 – such that high rates of informal employment and growing youth underemployment are important concerns (Byiers et al., 2015).

Much of this growth resulted from the return to economic and political stability in the early 1990s. Uganda was among the first Sub-Saharan African countries to embark on liberalisation and pro-market policies. In the first half of the 1990s, government policies focused primarily on **economic growth and macroeconomic stabilisation** and less on welfare distribution (Okidi et al., 2005). After an economically and politically turbulent period in the 1970s and 1980s, **economic rebound as well as more controlled inflation** drove poverty reduction

22 At first, primary education was provided for up to four children per family, two of whom had to be girls (if families had girls) and with special children given priority. In 2003, the government expanded the policy to include all children, and it made school uniforms optional to try to address further access barriers.

23 Value-added by agriculture fell from 56% to less than a quarter of GDP between 1990 and 2011. At the same time, the services sector share in GDP rose from 32% in 1990 to 47% in 2011.

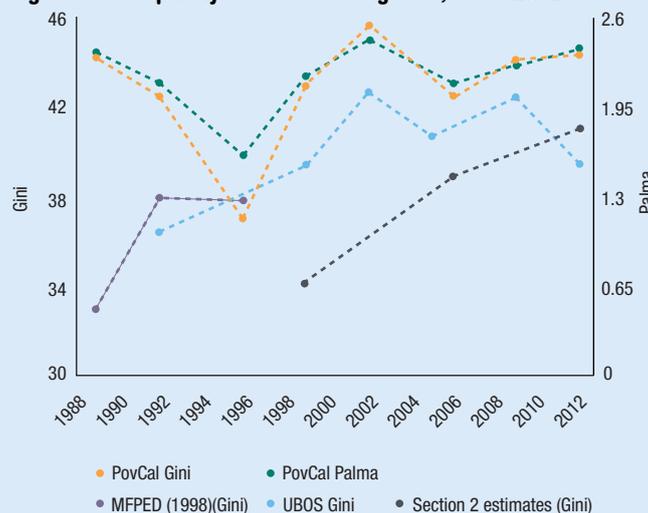
Box 1: Disparate trends in inequality among data sources in the 1990s

The World Bank's PovcalNet database provides poverty and inequality measures for Uganda in consumption expenditure *per person* in international PPP dollars. According to this measure, the Gini has remained at a similar level as in 1989, at around 44, despite fluctuations. The Palma Ratio from this international source follows the same trend: Uganda is classified in the same quartile of countries in 1989 and 2009 (Cobham and Sumner, 2013).^{*} National data estimates from the Ministry of Finance, Planning and Economic Development (MoFPED) and UBOS use consumption expenditure in the national currency per adult equivalent (p.a.e.) – that is, taking into account household composition and assigning a lower weight to children in particular. These estimates show a sharp increase in the Gini up to 2002 and then fluctuations, with a return to a similar level in 2012. The different trend in the 1990s is likely explained by two factors – the use of adult equivalent measures in the national measures, given the country's large share of youth – coupled with a fall in population growth in Uganda that is likely to have been smaller among richer households, widening the p.a.e. difference. In the 2000s, our own estimates (Section 2) show less inequality than both international measures and official data and a marked increase in the Gini between 1999 and 2012 of 7 percentage points.^{**}

* Palma of 2.37 in 1989 and 2.33 in 2009.

** Two likely sources of difference are the different treatment of outlier values and differences in computation relating to (1) the use of sampling weights and ranking of individuals versus households and (2) the use of p.a.e. versus per capita measures.

Figure 13: Inequality measures in Uganda, 1988-2012



Source: UBOS household survey reports (various years), MoFPED (1998), analysis from Section 2 and authors' calculations based on PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

in the 1990s.²⁴ Between 1986 and 1989, the country experienced annual inflation levels averaging at around 150% (Wanyera and Davis, 2012); inflation spiked between 1991 and 1992 owing to recurring budget deficits and excessive borrowing from the Central Bank. Ultimately, soaring prices led the government to adopt tight fiscal controls (Wanyera and Davis, 2012; Whitworth and Williamson, 2010). The 'shock therapy' met its aims, and the last quarter of 1991/92 marked the beginning of macroeconomic stability and accelerated growth. Inflation

dropped from 107% on average in the pre-reform period (1986/87-1991/92), to 7% in the immediate years after the reforms (1992/93-1996/97) and 5% afterwards (1997/98-2007/08) (Byaruhanga et al., 2010).

The liberalisation of key markets, in particular the coffee market, accompanied by exceptionally good coffee prices in the first half of the 1990s, contributed significantly to the increase in incomes and livelihood diversification for rural households. The 1991/92 abolition of coffee export tax, one of the most important trade liberalisation policies,

24 Adverse macroeconomic conditions, for example a subsequent decline in coffee prices, inflation and the global financial crisis, had a negative impact on poverty and inequality trends in later periods.

together with broader coffee marketing liberalisation,²⁵ resulted in a sharp increase in coffee producer prices: the share of farm-gate prices in border prices rose from 30% to more than 80% (Collier and Reinikka, 2001, in Okidi et al., 2005). This not only had visible impacts on rural households' incomes but also attracted large numbers of farmers into coffee production (Bussolo et al., 2008). Indeed, coffee producers, food crop farmers and the self-employed were among the primary beneficiaries of trade liberalisation since they experienced increased prices and/or demand for their good or services (Morrissey et al., 2003). Poverty reduction in Uganda in this decade was largest among export crop producers (Christiaensen et al., 2002). This was also reflected geographically: the Central, Eastern and Western regions all benefited from trade liberalisation as they produced high-value coffee, tea and food crops (Morrissey et al., 2003), and coffee-growing districts contributed more to poverty reduction than non-coffee-growing districts did (Kappel et al., 2005). The Northern region missed out on much of the positive impact because of persistent conflict combined with an emphasis on the primary production of less profitable crops, notably cotton (Morrissey et al., 2003).

Uganda has benefited from **large aid inflows**. The country was the 'poster boy' for the international debt relief campaign (Whitworth and Williamson, 2010). It received Multilateral Debt Fund grants between 1995 and 1998 and then support from the Heavily Indebted Poor Country (HIPC) initiative in 1998 and in 2000. This enabled it to channel a large amount of resources to the social sectors, fostering improvements in human capital and productivity. For example, between 1997 and 2005, spending on health and education grew from 18% to 35% of the budget (Hickey, 2013). Only from 2005 has the share domestic spending in the budget outstripped the contribution of aid (ibid.).

The tax to GDP ratio is still low but has risen from about 4.5% in 1987 to about 12.5% in the past few years. **Tax policy** has not been markedly pro-poor. On the one hand, VAT, introduced in 1996, is the main revenue source, but this is an indirect tax that falls on consumption. Attempts to protect the poor have been made through exempting or zero rating foods under VAT, but key items such as kerosene and sugar are not exempt. On the other hand, the progressivity of income tax is rather mixed,²⁶ whereas other taxes – notably business tax and local taxes – are more clearly regressive (Gauthier and Reinikka, 2001; Ishengoma and Kappel, 2011; Ssewanyana and Okidi, 2008).

Employment and sectoral policy – lagging agricultural productivity

Given the concentration of the poor in rural areas and the large share of agricultural employment in Sub-Saharan Africa, **agricultural policies** are important to support poverty reduction. However, despite the success of a few cash crops such as coffee, cocoa and sugar, increasing agricultural productivity remains a challenge in Uganda.

Agriculture remains the largest employer, with around 72% of the economically active population according to the latest household survey (2012/13). Nonetheless, the sector accounts for only a quarter of GDP, reflecting continued low productivity (Byiers et al., 2015). Lagging productivity has constrained inequality reductions by limiting the rise in earnings of the people and regions where agriculture is the predominant activity. Coffee remains dominant despite agricultural diversification and a substantial decrease in the share of coffee exports, from 70% of the agriculture sector's foreign exchange earnings between 1990 and 2000 to 40% between 2001 and 2011 (BoU and MAAIF, 2012).

Despite the 2000 Plan for the Modernisation of Agriculture and National Agricultural Advisory Services (NAADS) programme in the mid-2000s, Uganda has not met the Maputo Declaration commitment to allocate 10% of its budget to agricultural and rural development. The share of spending in agriculture, fisheries and forestry in total expenditures fell from 5.7% in 2001/02 to 3.8% in 2008/09 (World Bank, 2010), although allocations have increased to 4.5% in 2011/12 in accordance with Uganda's first National Development Plan (NDP) (Tibaidhukira, 2011).

Moreover, while trade liberalisation and agricultural diversification policies benefited cash crop producers, policy has not reached the poorest of the poor and the more disadvantaged subsistence farmers (e.g. CPAN, 2013). Smallholder farmers often view NAADS in a negative light, believing it has only benefited a small number of individuals and that the targeting is unfair (MOFPED, 2014).

Patterns of economic activity are closely linked to regional inequalities in Uganda. Some earlier attempts to develop **infrastructure and information and communications technology in remote areas** have benefited the agriculture sector. For instance, the rural electrification programme has reached over 1,280 rural communities (villages and trading centres) since the 2000s, supporting non-farm enterprise development (MoFPED, 2014). Investments in mobile phone network coverage, which rose from 46% of the population in 2003 to 70% in 2005 (ITU, 2007, cited in Muto and Yamano, 2009), helped connect towns and give access to banking, which in turn

25 The Coffee Marketing Board's export monopoly ended in 1991 and the Uganda Coffee Development Authority was created with the objective of monitoring and advising on coffee production and export policies. The private sector became the main trader of coffee in the mid-1990s, supported by policy reforms such as lifting of the coffee export tax, introduction of import tariffs, abolition of mandatory floor export prices and relaxation of the legal requirement that all coffee should be transported by train (Whitworth and Williamson, 2010).

26 At the lower end, the rate is slightly progressive, because of the low tax base and because it is unlikely to be levied on households in the informal sector (Ssewanyana and Okidi, 2008). But it may be regressive at the top end because the flat rate (of 30%) starts at a relatively low threshold of USh 410,000 (\$182) per month (Seatini, 2010).

increased trade and market participation.²⁷ For example, Muto and Yamano (2009) find that, as mobile networks became available, the proportion of households selling bananas (a profitable cash crop) rose from 43% in 2003 to 68% in 2005, owing to reduced marketing costs. In addition, some progress has been made in improving the national road network, but more investment is required, particularly in the rehabilitation and maintenance of feeder roads, and lack of specialist infrastructure, such as abattoirs and cold storage facilities, is undermining the development of several value chains (MoFPED, 2014). The 2011/12 budget, again in line with NDP priorities, may be addressing this gap – with energy and roads together receiving about one-quarter of allocations (Hickey, 2013).

A key development intervention by the government to address regional disparities was the 2007 Peace, Recovery and Development Plan for Northern Uganda, which has produced some positive results in infrastructure development (Oling et al., 2015). Uganda's NDP in 2010 proposed some 'affirmative action' for lagging regions, including a restated commitment to the Post-Conflict Recovery and Development Programme for the North (Hickey, 2013) as well as infrastructure and connectivity investments.²⁸ These investments notwithstanding, development in Uganda has continuously been skewed towards the Central and Western regions as well as urban areas (Oling et al., 2015; Ssewanyana and Kasirye, 2014; World Bank, 2012).

Finally, inequality reduction, especially in agriculture, has been limited by the **concentration of assets, land in particular**. Secure land tenure is a precondition for agricultural growth; without clear land rights, farmers are less likely to invest in the land they cultivate and may face difficulty in accessing credit using land as collateral. It is estimated that in Uganda, lack of full ownership rights under customary tenure systems reduces agricultural productivity by at least 25% (Deininger and Ali, 2008, in MoFPED 2014). Control of productive land is highly concentrated and unequally distributed across regions

(USAID, 2010b).²⁹ *Mailo* land (a customary form of freehold land) set by British colonialists in Buganda kingdom resulted in inequalities that remain today, particularly in the Central and Western regions, where land inequality is the highest (Reinikka and Collier, 2001). In 1998, a land reform act that enabled land rentals made an important contribution to improved productivity and pro-poor growth by helping provide land access to those in need, especially landless households.³⁰ Participation in land markets has indeed increased considerably over time, with some evidence that wealth constraints have become less important (Deininger and Mpuga, 2003). As a result, inequality in land ownership has fallen – the Gini coefficient for owned land fell from 0.57, a figure that puts Uganda in the middle league of countries internationally, to about 0.50 for operated land (Reinikka and Collier, 2001).³¹ Still, access to land constrains agricultural productivity and is perceived to be a marker of poverty.³² In the Eastern region, which reported the slowest poverty reduction, weather conditions, a high dependency ratio and growing population pressures have contributed to land fragmentation and soil degradation, with negative impacts on agricultural productivity (MoFPED, 2014).

Social spending – limited scope for inequality reduction

Pro-poor spending through service provision (mainly health and education) was the backbone of poverty reduction policy from 1997 up to 2010 with the Poverty Eradication Action Plan (PEAP).³³ Spending in PEAP areas increased from 1.8% of GDP in 1997/98 to over 5% of GDP from 2001/02 onwards (Whitworth and Williamson, 2010). One important outcome was the elimination of user fees in education starting in 1996, and in health in 2001 (Hickey 2013).

Importantly, while education is an effective vehicle for poverty reduction, it can also generate some gaps between those with more and less education. Growth in living standards and poverty reduction during the 1990s was fastest for more educated households (Applenton,

27 Although the main users of mobile banking are still the richest, more educated and formally employed according to the 2013 FinScope survey (EPRC, 2013).

28 Three targeted programmes have been highlighted as contributing to poverty reduction in rural areas: the palm oil project in Kalangala (government and International Fund for Agricultural Development), the Peace, Recovery and Development Programme in the Northern region and the rural financial services programme (MoFPED, 2014).

29 There are other deeply rooted biases in land ownership rights, particularly gender ones: male-headed households hold 80-90% of the ownership rights of the land (Nayenga, 2008, in USAID, 2010b).

30 It also recognises the four historic forms of land tenure (customary, leasehold, freehold, *mailo*); grants all lawful and *bona fide* occupiers' (legally defined) property rights; decentralises land administration; and establishes land tribunals.

31 In comparison, land Gini coefficients are in the 0.8 to 0.9 range in Latin America and in the 0.4 to 0.5 range in Asian countries. Other estimates of land inequality in Uganda in the early 1990s are .57 in 1991 (Frankema 2006), .59 that same year (World Bank 2006) and .59 for the 1990s (Deininger and Squire 1998).

32 In the 2014 mini Participatory Poverty Assessment (PPA), lack of land for work became the most important indicator of poverty perceptions (MoFPED 2014).

33 The PEAPs were then supplanted by the 2010 NDP reflecting a greater emphasis on economic transformation rather than poverty reduction per se (Hickey 2013).

2001). This was linked to participation in non-agricultural activities. While primary education does not seem to have an important effect in participating in wage employment, it increases the chance of participating in non-farm self-employment, as opposed to agriculture production, by 11 percentage points (from 22% to 33%), thus potentially explaining some of the move out of agriculture seen in the mid to late 2000s especially (ibid.). Other studies link education with a higher probability of starting a non-farm trade enterprise in Uganda (Deininger and Okidi, 2001) and with over 100% higher earnings in household enterprises (Filmer and Fox, 2014). Poverty reduction in rural areas is closely associated with the diversification of household livelihood portfolios away from agricultural activities towards non-farm household enterprises (Byiers et al. 2015; Fox and Pimhidzai, 2011; MoFPED 2014).

The creation of the Ministry of Gender, Labour and Social Development in 1998 marked the beginning of the implementation of a few formal and government-led **social protection programmes**, but safety nets, cash grants and insurance systems for old age, sickness and disability remain limited in scope and coverage. The main social assistance programme is the Social Assistance Grants for Empowerment (SAGE), which targets mainly the elderly but also adults with disabilities and orphans (OPM et al., 2013). While covering 2,930,960 older people, the programme is still relative small – it is estimated to reach only 3.3% of the eligible 65+ population (ILO, 2014). The same applies to other programmes; for example, the National Programme for Orphans and Vulnerable Children covers only about 23% of the target population (Onapa, 2010).

Apart from those few exceptions, social protection has largely focused on those able to work, the emphasis being the removal of barriers to engaging in productive employment (Byiers et al., 2015). Thus, programmes for entrepreneurship development, credit facilitation and skills development have been widely used since the late 1990s (e.g. the Youth Livelihood programme, Entandikwa and Bona Bagagawale and several TVET programmes). Only in areas where economic activities and opportunities have been limited, mainly in the conflict-affected Northern region, have active labour market policies in the form of public work programmes been used to generate direct employment opportunities. A prime example is the Northern Uganda Social Action Fund (NUSAF), created in 2003 (although preceded by the Northern Uganda Reconstruction Programme since 1992) and supported by international donors (World Bank). NUSAF has supported communities to undertake higher-value enterprises such as

goat-rearing, poultry-farming, piggeries and institutional projects like the construction of classroom blocks and health centres (MoFPED, 2014), thereby increasing beneficiary incomes.³⁴

Politics of policy

For decades now, Uganda has followed a relatively consistent development strategy, which has stressed the importance of macroeconomic stability, market liberalisation and the role of the private sector. This is the result of an earlier political process and the need to secure finance for social policies, particularly in the light of structural adjustment. Tax revenue averaged only 5.8% of GDP between 1985 and 1990, a low number even by Sub-Saharan African standards, and foreign aid became an important support to government expenditure (Whitworth and Williamson, 2010). Budget support aid contributed to 31% of the real increase in public expenditure between 1997/98 and 2003/04 (OECD, 2006, in Whitworth and Williamson, 2010), and it is estimated that, at its peak in 2004/05, aid funded 41% of the government's budget (Brownbridge, 2010).³⁵

The importance of donors in funding the government's development plans has also given them a large say in Uganda's policy directions, in spite of some fluctuations through the years (e.g. suffering considerably in the run-up to the 2006 government elections owing to concerns over political stability and corruption, as well as the 2014 signing of a law penalising homosexuality). The emphasis on macroeconomic stability and market liberalisation in the early 1990s clearly responded to the prevailing Washington Consensus. The liberal approach taken towards social protection, focusing on barriers to employment and support for productive activities, is another example of the influence of donors on the country's policy.

Moreover, for many high-level national policy-makers and donors alike, **the idea of the 'trickle-down' of growth** remains strong (Byers et al., 2015), marginalising concerns over inequality reduction. Some argue that this has been a leading reason for the poorest of the poor not yet being included in Uganda's economic growth and social protection policies (CPAN, 2013; Lwanga-Ntale, 2013; Ssewanyana, 2009). More recently, and perhaps prompted by a less favourable economic situation – such as high youth unemployment rates and sluggish growth in the past couple of years – some tensions have arisen between the main international financing institutions and some progressive sectors within the government that aim to

34 According to NUSAF II data, the income of targeted households more than doubled the stipulated target of rising incomes by 30%, increasing to about US\$ 255,000 (from a starting point of US\$ 93,401), despite the fact that NUSAF provides only around one month of employment and therefore only around a third of the value of other social transfers, such as SAGE (Wylde et al., 2012). This comparison depends on differences in wage rates and the duration of employment.

35 Debt relief from the HIPC initiative (channelled through the Poverty Action Fund) was another main source of funding for public services from 1998.

redefine the government's role in the economy, with a primary aim to support employment creation (Byers et al., 2015). The most recent government vision document, the National Development Plan (2010), signals increased concern for areas with important poverty reduction and structural transformation impacts – employment, state facilitation of private sector-led development, agricultural productivity, regional integration – but also important gaps (Hickey, 2013). In particular, 'It is very difficult to identify clear examples of how the overall vision of transformation has been thought through in distributive terms, whether over the short- or long-term, and with particular reference to the critical areas of agriculture, employment, social protection, and spatial inequality' (Hickey, 2013).

Despite the rise of a 'technocratic' politics,³⁶ **there is still a strong overlap between the economic and political elite** in the country, and rent-seeking behaviour is widespread (Booth et al., 2014), which may be impeding the development of small and medium enterprises as well as redistribution. For instance, despite extensive tax reforms in the early 1990s, tax exemptions for large firms – ripe in Uganda since independence – were left largely untouched (Cawley and Zake, 2010).³⁷ So, while the government's stand is broadly pro-business, policy-making is erratic and over-dependent on personal interventions by the president (Booth et al., 2014). Finally, many social policies have been questioned for being politically motivated rather than driven by 'technocratic' considerations. For instance, the introduction of UPE was a key election issue in the presidential elections of 1996, responding to a top-level dynamic political initiative, which left little time for detailed planning (Avenstrup et al., 2004). Bona Bagagawale (Prosperity for All), the main rural credit programme, and its predecessor, Entandikwa, were also launched as electoral strategies, in 2006 and 1996, respectively, and were perceived to be highly politicised (CPAN, 2013).³⁸

Decentralisation

Finally, in 1993, Uganda embarked on an ambitious **decentralisation** process. This was aimed at improving service delivery and strengthening local institutions but also as a way to fragment rival ethnic claims, which constituted a threat to central power, and to put off demands for a multi-party system in important geopolitical areas (Crook, 2003). Assessments of decentralisation and poverty reduction are not entirely positive; low levels of popular participation, insufficient accountability, especially downward accountability, limited administrative

capacity in local governments and low revenue-generating possibilities at the local level (and their regressive nature) have limited the potential impact in supporting poverty reduction (Francis and James, 2003; Jütting et al., 2004; Okidi and Guloba, 2006; Steiner, 2008). Critics have questioned whether improvements in service delivery resulted from an increase in resources (transferred and controlled through conditions from the central government) or a decentralised system (Francis and James, 2003). Jütting et al. (2004) also suggest pro-poor outcomes were driven from the central level. Francis and James (2003) highlight that minimal actual control of resources at the local level, as well as local elite capture of the political process, has created a dual 'patronage' mode of decentralisation, which 'draws on the language of participatory planning but is reduced to a ritualised performance with little meaningful citizen involvement'.

3.4 Two cases and policy insights

The cases of Ethiopia and Uganda are not intended to be compared directly but nonetheless they offer some contrasting insights into policies conditioning inequality levels. While the incomes of the poor have increased in both countries as the economies have grown and income poverty has fallen, in Ethiopia, income growth has been relatively pro-poor, while in Uganda, our analysis suggests that it has not. It follows that inequality has fallen in Ethiopia, its rapid growth notwithstanding, whereas in Uganda it appears to have increased quite markedly. Gains in education, in contrast, have accrued disproportionately to those with less education and to those with less income – in both countries, the gains have been relatively pro-poor and in Uganda, the gap between more and less educated people has fallen.

In Ethiopia, there is clear evidence of policies that have led to a reduction of poverty and of inequality, an impressive achievement in light of the very high growth the country has experienced, though concerns around governance should not be overlooked. The **overriding commitment to poverty reduction** as a centrepiece of strategy emerged as an important framework for the government's activities, and was reflected in intra-sectoral coordination and planning. The Ethiopian experience also points to the importance of **agriculture-led development**, particularly given that over 40% of value added in GDP still derives from that sector. Huge investments were made in areas from which poor agriculturalists benefited, such as **agricultural extension services**, and also **road construction**, with road density increasing by 50% over about 10

36 This is reflected, for example, in the 1992 merger of the Ministry of Finance and the Ministry of Planning and Economic Development and the creation of the mid-term expenditure framework, the first in a developing country.

37 Only eliminated in 2014.

38 Entandikwa, for example, was intended to be a revolving fund, and the responsibility for identifying beneficiaries and for recovering the loans was done by officials through local councils. The small repayment rate led to very little of the nearly \$6 million injected into the scheme ever being recovered and the eventual dismantling of the scheme (CPAN, 2013).

years. This emphasis was reinforced through budget allocations – governments have consistently allocated over 15% of national budgets to agriculture – well in excess of the 10% recommended in the Maputo Declaration. The emphasis on agriculture-led growth had had broad-based benefits to smallholder producers – facilitated by government ownership of land and its distribution of user rights. The fact that most farm production is geared for the external market rather than export also contributed to greater equality within the sector. Ethiopia’s extensive **social protection programme** – the PSNP – has had strong effects on the consumption of the rural poor and on employment. It covers 10% of Ethiopian households, has accounted for 7% of poverty reduction, and employs some 1.2 million people each year. **Decentralisation** appears to have been implemented effectively, with studies pointing to improvements in service delivery, especially for more disadvantaged populations.

In Uganda, some policies have been conducive to pro-poor growth, not least **relatively high spending on education and health** from the late 1990s and to the mid-2000s and the abolishment of user fees in education and in health that began in 1996. However these appear to have been offset by other, inequality-enhancing shifts. For example, economic diversification and the beginning of **structural transformation** of the economy away from agriculture and toward services (less than one-quarter of value added in GDP derives from agriculture) will have increased the gaps between those employed in each. **Spending on agriculture** has been relatively low, between 4% and 6% of its national budget – far below the recommended level and well below the very high allocations evident in Ethiopia. Within the agricultural sector, **land concentration** remains high – such that lack of access to land is a marker of poverty – and while the liberalisation of key agricultural markets, notably coffee,

increased producer incomes markedly, it also emphasised gaps between producers of coffee for export and producers of less profitable crops. This has **regional implications** too – as farmers in the disadvantaged North of the country were unable to take advantage of the coffee price rises. **Spending on social protection** – which has an important effect on both poverty and inequality – has been relatively limited. The few formal and government-led programmes geared towards providing safety nets, cash grants and insurance for old age, sickness and disability remain narrow in scope and coverage. **Public works programmes** are restricted mainly to the conflict-affected Northern region.

The massive increase in educational enrolment reflected may have accentuated inequality, at least in the short run, both because it has generated concerns over quality and because it has fostered some diversification into more productive and better remunerated activities. **Decentralisation** has been implemented, but accounts point to low levels of political participation, insufficient accountability, limited administrative capacity, low revenue-generating possibilities and limited control of resources at a local level, as well as local elite capture of the political process. More broadly, investments have been skewed towards the most prosperous Central and Western regions as well as urban areas.

The **politics underlying policy** have been complex – affected by both domestic political imperatives, notably the shift to a multiparty democracy in the mid-1990s and the heavy influence of donors who contributed the majority of the budget through the mid-2000s. Underlying this complexity has been a broad commitment to economic growth and transformation, some populist reforms notwithstanding, a commitment recently emphasised with the shift away from PEAPs and towards National Development Plans (Hickey 2013). Little explicit attention has been given to distributive concerns.

4. Conclusion



Bicycle repair shop in Uganda. Photo: © Brian Wolfe.

On the basis of the evidence described here, we draw the following conclusions. From a methodological perspective, we point to the value of:

- interrogating data to determine what constitutes robust patterns and where there is ambiguity;
- considering growth in relation to relative and absolute inequality;
- illustrating how income or consumption are distributed across all parts of a distribution, and
- examining patterns of growth and inequality in countries that share some similar circumstances and characteristics.

Drawing on descriptive analysis of all developing countries for which we have data, and more in-depth analysis of particular countries, we find the following:

- Between 2000 and the present, considerable discrepancies between national accounts and household survey data call into question the ‘graduation’ of many LICs to lower-middle-income status as well as the reliance of international agencies (including the World Bank) on the Atlas Method to determine the income status of developing countries.
- There is no clear evidence that relative inequality is higher in countries that have become LMICs than it is in those that have stayed LICs, but there has been a marked increase in *absolute* inequality among LICs that have become MICs. However, nearly all growth episodes in poor or rich countries serve to increase the absolute distance between the poor and the rich, so this finding is not unique to developing countries or those moving from low- to middle-income status.
- Across five developing countries, while growth in income and in education has benefited the poor in absolute terms, changes in income have typically benefited richer parts of the distribution more than the poor, and gaps between rich and poor have increased in all cases. In education, changes have been more pro-poor but gaps have closed in only about half of the spells for which we have data.
- Closer scrutiny of the experiences of Ethiopia and of Uganda reveals the importance of historical circumstance and policies in influencing recent trends in pro-poor growth and inequality. Our analysis highlights the role of government strategy and the underlying politics, policies towards agriculture and infrastructure, and social protection programming.

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Appendices

Appendix 1: Tables and figures

A) Uganda

Fig. A1: Growth incidence curve. Period: 1999 to 2005

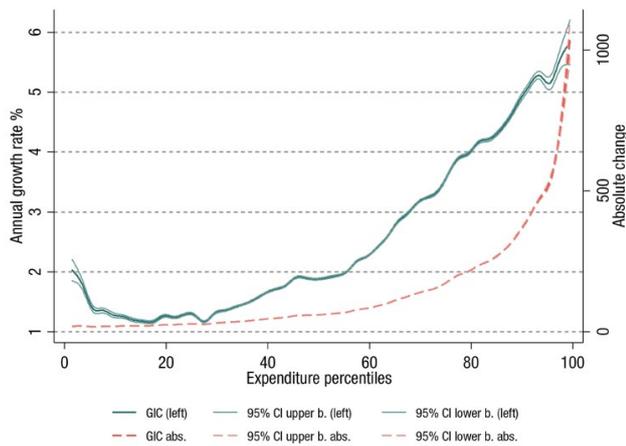


Fig. A2: Growth incidence curve. Period: 2005 to 2011

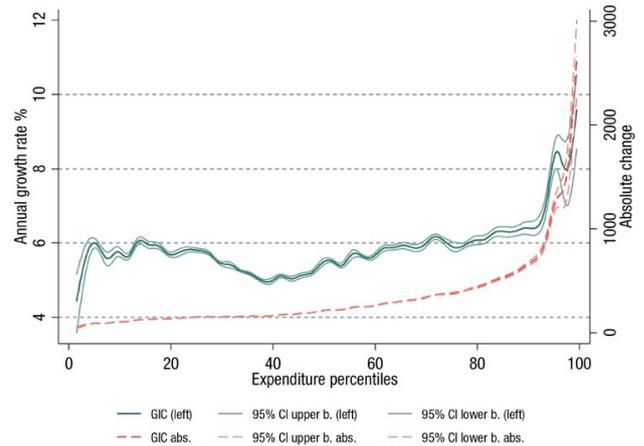


Fig. A3: Growth incidence curve. Period: 1999 to 2011

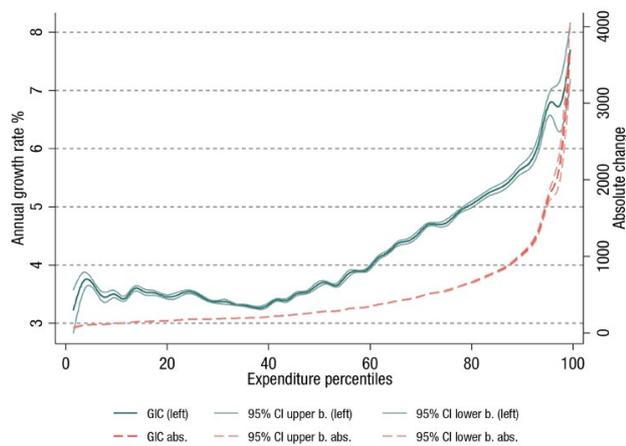


Fig. A4: Opportunity curves – years of education. Period: 1999 to 2005

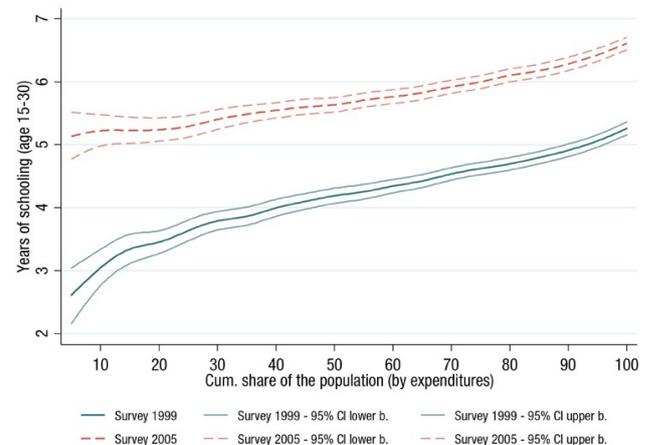


Fig. A5: Opportunity curves – years of education. Period: 2005 to 2011

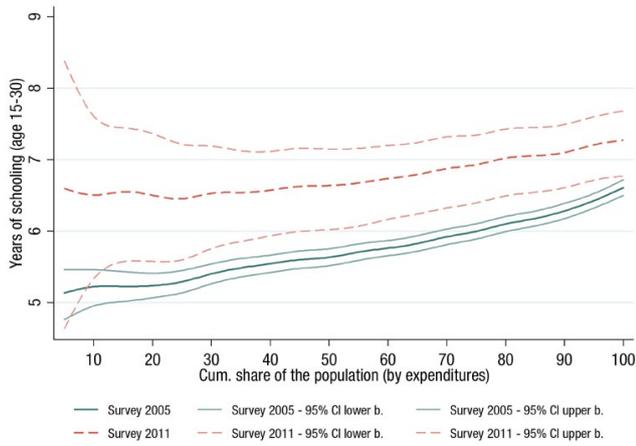


Fig. A6: Opportunity curves – years of education. Period: 1999 to 2011

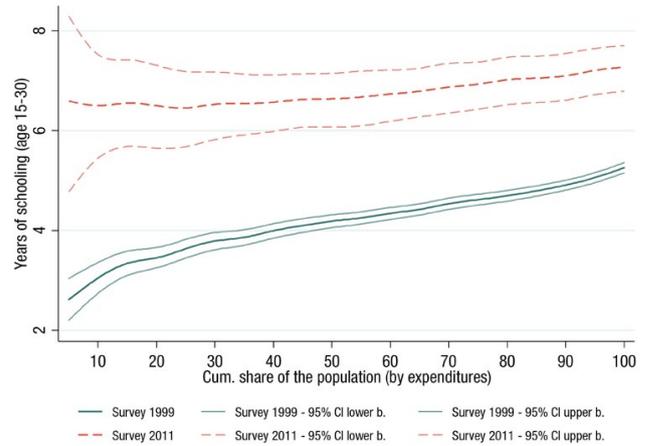


Fig. A7: Conditional NIGIC. Period: 1999 to 2005

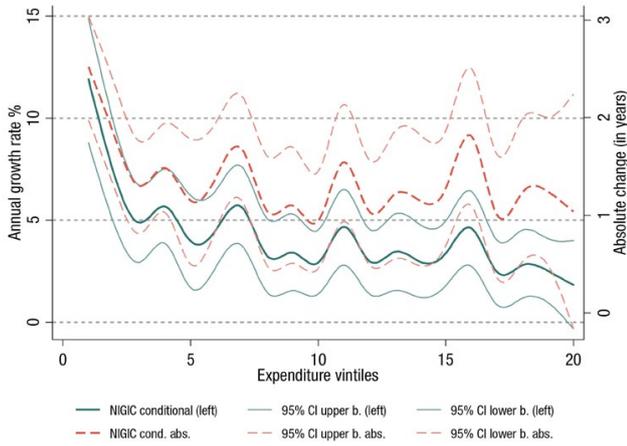


Fig. A8: Conditional NIGIC. Period: 2005 to 2011

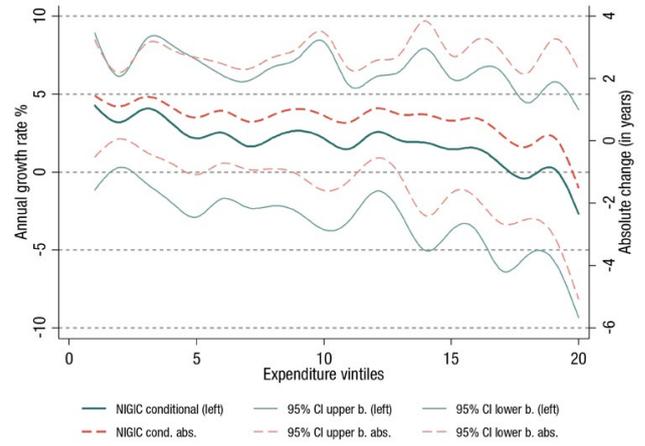


Fig. A9: Conditional NIGIC. Period: 1999 to 2011

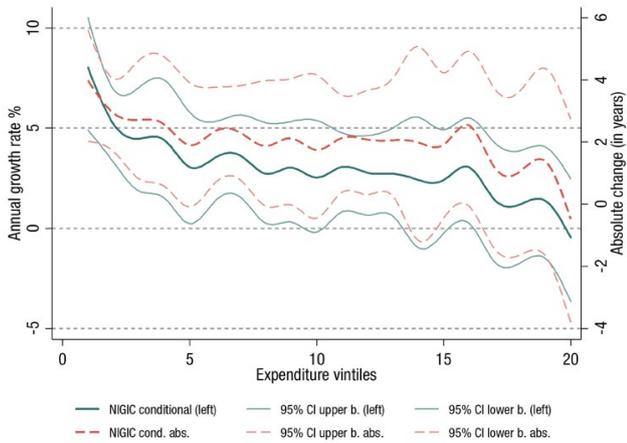


Fig. A10: Unconditional NIGIC. Period: 1999 to 2005

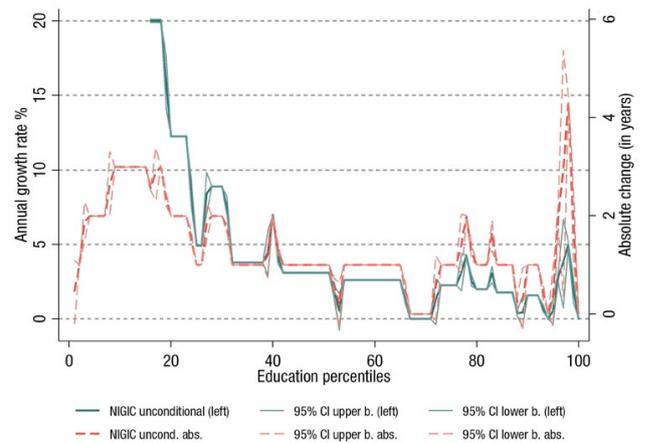


Fig. A11: Unconditional NIGIC. Period: 2005 to 2011

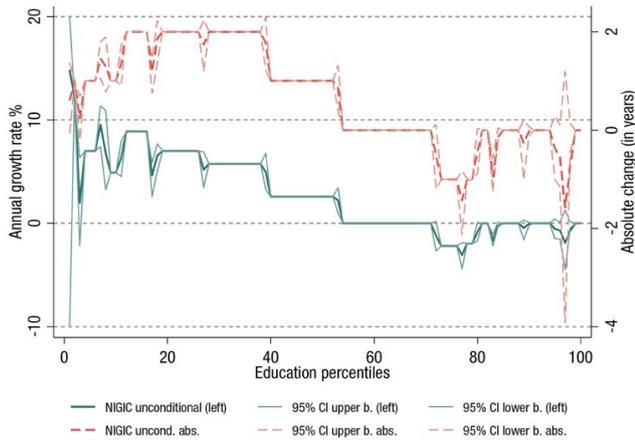


Fig. A12: Unconditional NIGIC. Period: 1999 to 2011

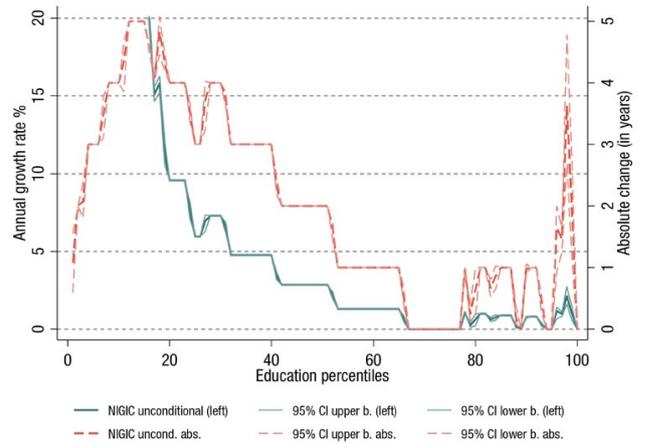


Fig. A13: Opportunity curve– adult literacy. Period: 2005 to 2011

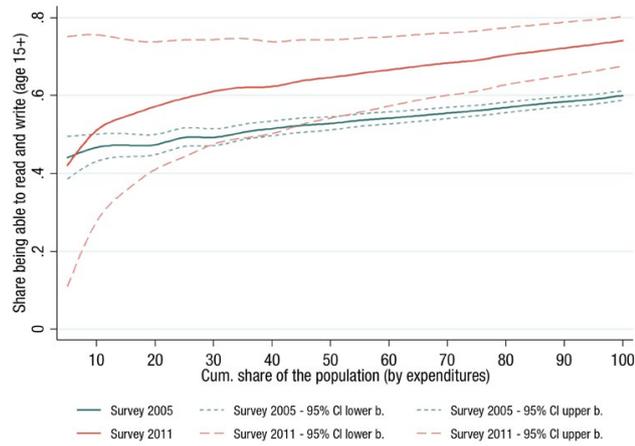


Table A1: Distributional patterns of growth in Uganda, 1999-2011

PANEL A: Descriptive Statistics																
			UNHS 99/00	UNHS 05/06						UNPS 11/12						
No. of Households			10696	7426						2850						
No of Individuals			50565	42982						21487						
Literacy Rate (% - age 15+)			65.03% ¹	60.2% ¹						74.55% ¹						
Years of Schooling (age 15-30)			5.18	6.58						7.25						
Annual expenditure (p.a.e. in 2005 US\$PPP)			628.62	772.82						1131.83						
Gini Index			0.34	0.39						0.41						
Palma Ratio			1.35	1.71						2.0						
PANEL B: Pro-poor growth rates and growth rates in the mean: Growth Incidence Curves and Unconditional NIGICs																
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum. avg. annual growth rate at the... percentile (in %)						Abs. change in the mean	Cum. abs. change at the... percentile (in %)					
				5 th	25 th	40 th	50 th	75 th	95 th		5 th	25 th	40 th	50 th	75 th	95 th
Avg. HH expenditures (p.a.e. in 2005 US\$PPP)	GIC	1999-2005	3.5	1.81	1.37	1.38	1.47	1.85	2.4	144.21	19.02	21.37	26.4	32.04	56.48	109.08
		2005-2011	6.57	5.29	5.7	5.56	5.48	5.59	5.76	359.01	70.12	112.29	128.89	140.62	190.91	276.82
		1999-2011	5.02	3.53	3.51	3.45	3.46	3.7	4.07	503.21	89.14	133.66	155.28	172.66	247.39	385.9
Avg. Years of schooling (age 15-30)	Uncond. NIGIC	1999-2005	3.88	n.d.	13.81	8.95	7.31	5.02	4.21	1.35	1.47	2.25	1.93	1.75	1.4	1.3
		2005-2011	1.61	8.96	7.57	6.81	5.97	3.97	3	0.66	0.79	1.52	1.67	1.53	1.01	0.73
		1999-2011	2.74	n.d.	11.4	7.93	6.49	4.16	3.26	2.01	2.23	3.77	3.59	3.28	2.41	2.03
PANEL C: Pro-poor growth rates and growth rates in the mean: Opportunity Curves and Conditional NIGICs																
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum. avg. annual growth rate at the... ventile (in %)						Abs. change in the mean	Cum. abs. change at the... ventile (in %)					
				1 st	5 th	8 th	10 th	15 th	19 th		1 st	5 th	8 th	10 th	15 th	19 th
Avg. Years of schooling (age 15-30)	OC and Cond. NIGIC	1999-2005	3.88	11.91	6.74	5.89	5.35	4.73	4.39	1.35	2.52	1.66	1.55	1.44	1.38	1.37
		2005-2011	1.62	4.26	3.37	2.9	2.8	2.49	2.06	0.67	1.46	1.16	1.03	1.01	0.93	0.78
		1999-2011	2.75	8.02	5.04	4.38	4.06	3.6	3.21	2.02	3.98	2.82	2.58	2.45	2.31	2.15

Notes: ¹ Literacy rates only comparable between 2005 and 2011 due to differences in data collection.
 n.d.= Not defined. In these cases one would have to divide by zero to obtain the annual growth rate.
 P.a.e.: Per adult equivalent.

B) Ghana

Fig. B1: Growth incidence curve. Period: 1991 to 1998



Fig. B2: Growth incidence curve. Period: 1998 to 2005

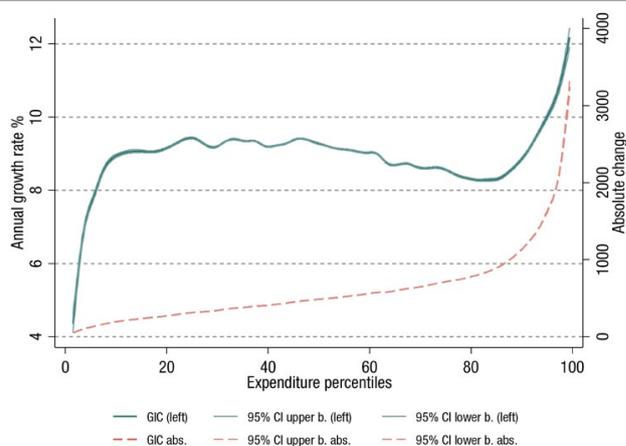


Fig. B3: Growth incidence curve. Period: 2005 to 2012

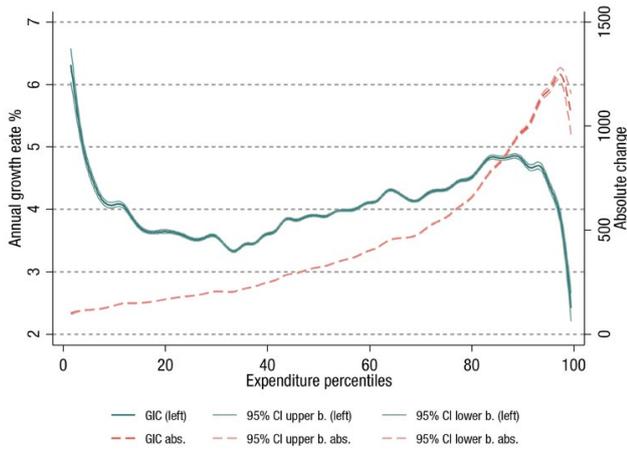


Fig. B4: Growth incidence curve. Period: 1991 to 2012

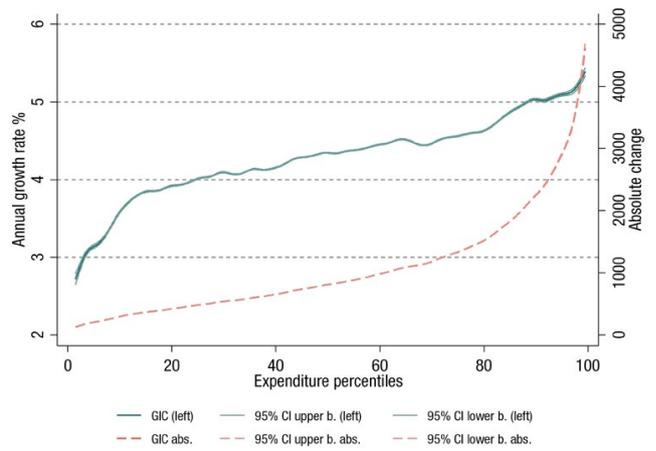


Fig. B5: Growth incidence curve. Period: 1991 to 2005

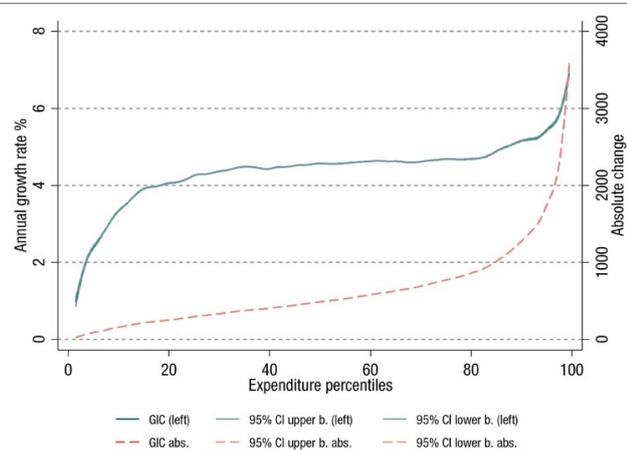


Fig. B6: Growth incidence curve. Period: 1998 to 2012

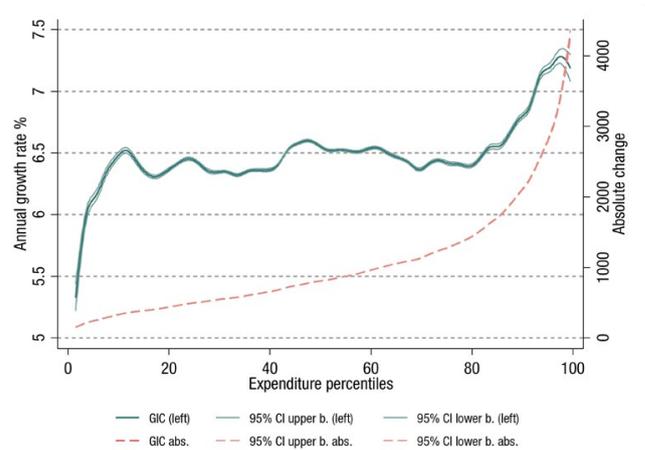


Fig. B7: Opportunity curve – years of education. Period: 1991 to 2005

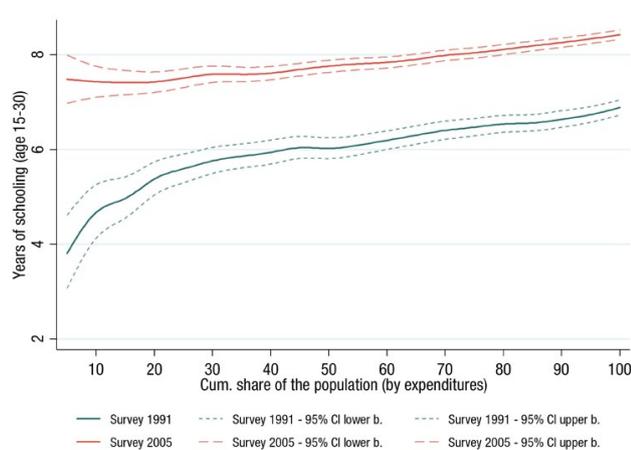


Fig. B8: Opportunity curve – years of education. Period: 2005 to 2012

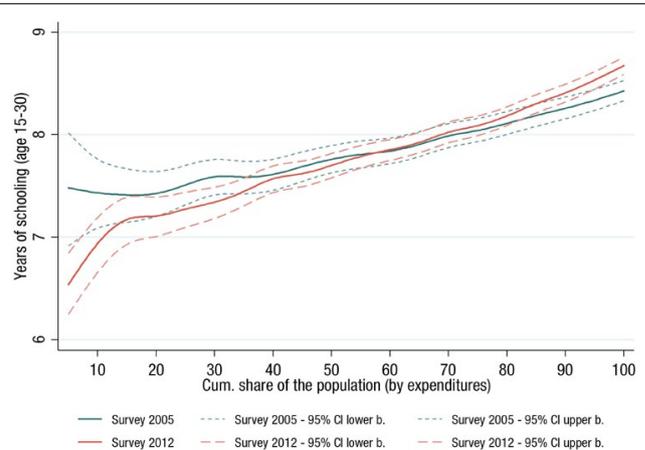


Fig. B9: Opportunity curve – years of education. Period: 1991 to 2012

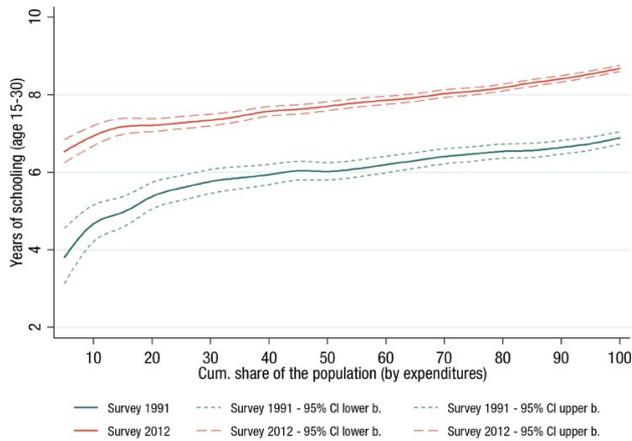


Fig. B10: Conditional NIGIC. Period: 1991 to 2005

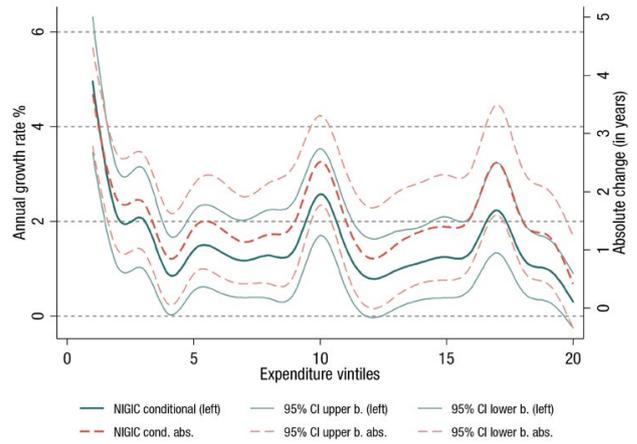


Fig. B11: Conditional NIGIC. Period: 2005 to 2012

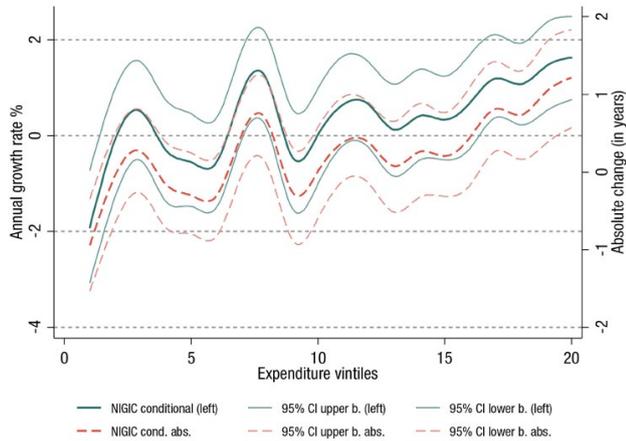


Fig. B12: Conditional NIGIC. Period: 1991 to 2012

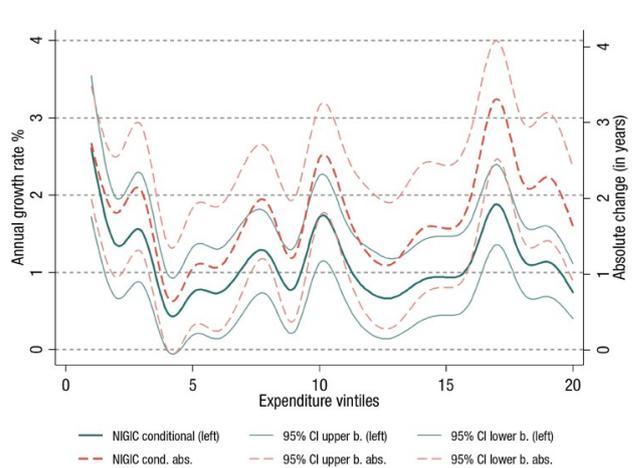


Fig. B13: Unconditional NIGIC. Period: 1991 to 2005

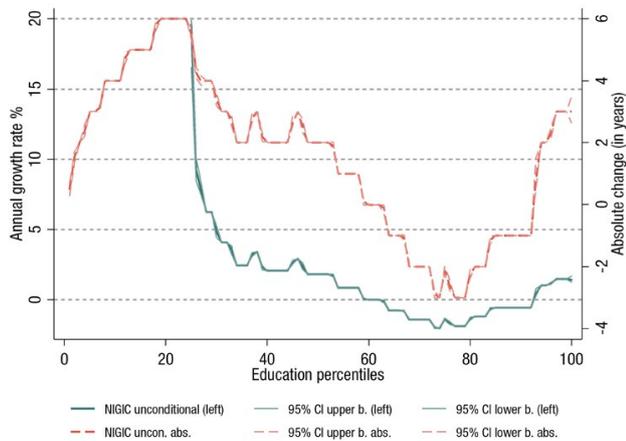


Fig. B14: Unconditional NIGIC. Period: 2005 to 2012

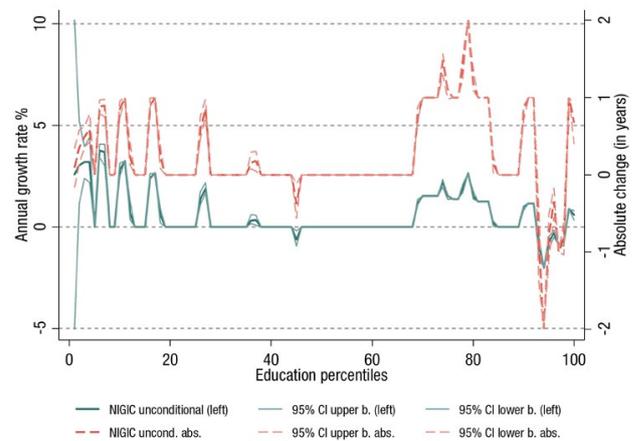


Fig. B15: Unconditional NIGIC. Period: 1991 to 2012

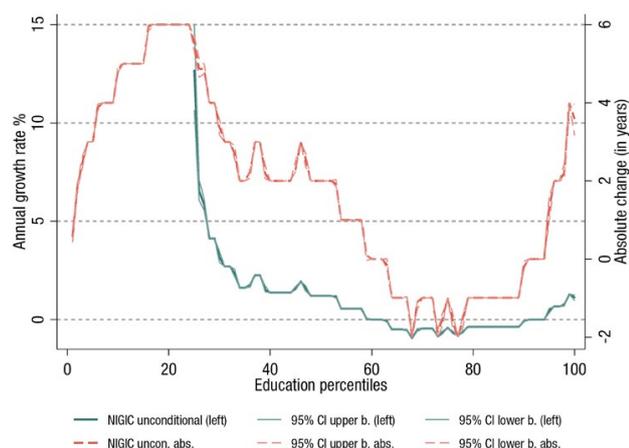


Table B1 Distributional patterns of growth in Ghana, 1999-2012

PANEL A: Descriptive Statistics																
	GLSS 91/92	GLSS 98/99	GLSS 05/06	GLSS 12/13												
No. of Households	4523	5998	8687	16772												
No. Of Individuals	20261	26411	37128	71524												
Literacy Rate (% - age 15+)	57.78% ¹	56.99% ¹	62.24% ¹	57.62% ¹												
Years of Schooling (age 15-30)	6.84	6.44	8.41	8.64												
Annual expenditure (p.c. in 2005 US\$PPP.)	689.75	720.71	1343.99	1776.19												
Gini Index	0.33	0.36	0.38	0.38												
Palma Ratio	1.27	1.48	1.64	1.65												
PANEL B: Pro-poor growth rates and growth rates in the mean: Growth Incidence Curves and Unconditional NIGICs																
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum avg. annual growth rate at the... percentile (in %)						Abs. change in the mean	Cum. abs. change at the... percentile (in %)					
				5 th	25 th	40 th	50 th	75 th	95 th		5 th	25 th	40 th	50 th	75 th	95 th
Avg. HH expenditures (p.c. in 2005 US\$PPP.)	GIC	1991-1998	0.63	-2.46	-1.57	-1.09	-0.88	-0.42	-0.05	30.96	-30.87	-26.97	-19.9	-16.5	-1.78	21.46
		1998-2005	9.31	5.96	8.41	8.74	8.86	8.86	8.83	623.27	84.39	204.83	264.46	301.98	397.49	523.82
		2005-2012	4.06	5.53	4.17	3.91	3.89	3.98	4.12	432.21	108.96	144.45	170.02	194.54	274.24	394.52
		1991-2005	4.88	1.66	3.3	3.71	3.87	4.12	4.29	654.24	53.53	177.86	244.56	285.48	395.71	545.28
		1991-2012	4.61	2.93	3.59	3.78	3.88	4.07	4.23	1086.44	162.48	322.31	414.58	480.02	669.95	939.8
Avg. Years of schooling (age 15-30)	Uncond. NIGIC	1991-2005	1.45	n.d.	19.59	5.26	4.07	1.96	1.2	1.54	1.89	4.34	3.82	3.5	2.19	1.47
		2005-2012	0.41	2.35	1.27	0.89	0.7	0.61	0.61	0.25	0.31	0.3	0.24	0.18	0.22	0.27
		1991-2012	1.11	n.d.	12.67	3.54	2.73	1.38	0.91	1.79	2.19	4.64	4.06	3.68	2.4	1.74
PANEL C: Pro-poor growth rates and growth rates in the mean: Opportunity Curves and Conditional NIGICs																
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum avg. annual growth rate at the... ventile (in %)						Abs. change in the mean	Cum abs. change at the... .ventile (in %)					
				1 st	5 th	8 th	10 th	15 th	19 th		1 st	5 th	8 th	10 th	15 th	19 th
Avg. Years of schooling (age 15-30)	OC and Cond. NIGIC	1991-2005	1.45	4.95	2.27	1.9	1.92	1.65	1.61	1.54	3.68	1.92	1.67	1.74	1.57	1.6
		2005-2012	0.41	-1.91	-0.47	-0.11	-0.13	0.06	0.28	0.25	-0.94	-0.24	-0.04	-0.06	0.05	0.2
		1991-2012	1.11	2.61	1.34	1.22	1.23	1.11	1.16	1.79	2.73	1.68	1.63	1.68	1.62	1.8

Notes: ¹Not comparable across time due to different definition

n.d.= Not defined. In these cases one would have to divide by zero to obtain the annual growth rate

C) Ethiopia

Fig. C1: Growth incidence curve. Period: 1999 to 2004

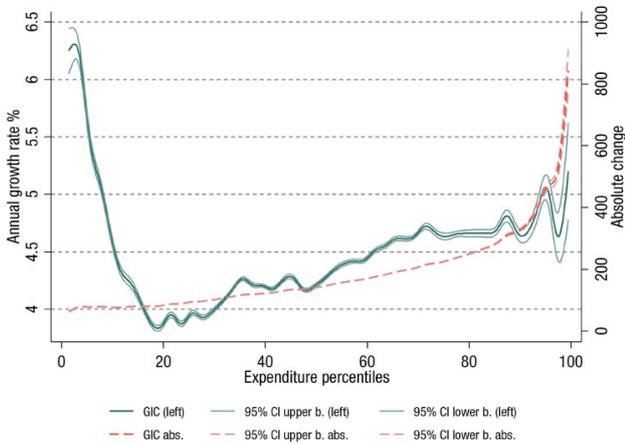


Fig. C2: Growth incidence curve. Period: 2004 to 2010

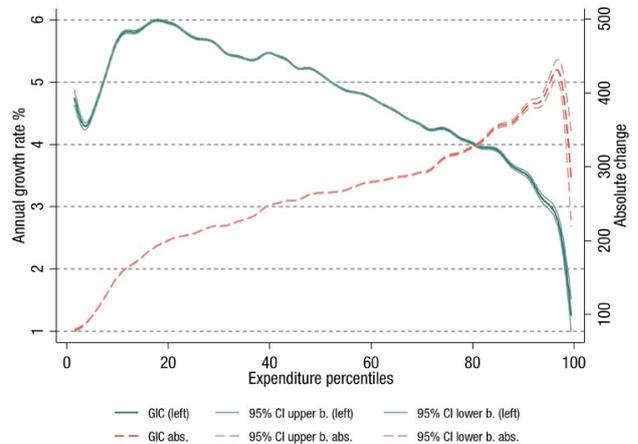


Fig. C3: Growth incidence curve. Period: 1999 to 2010

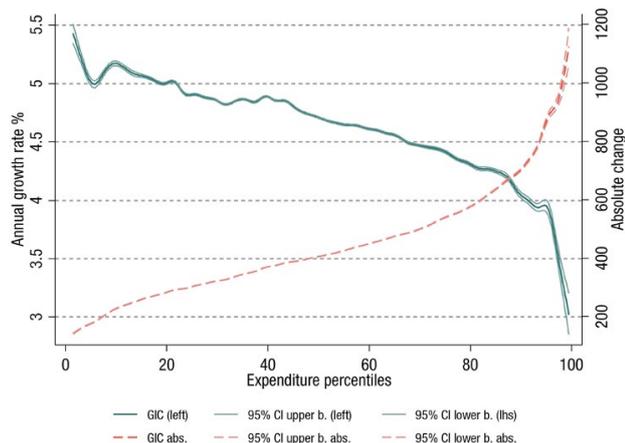


Fig. C4: Unconditional NIGIC. Period: 1999 to 2004/05

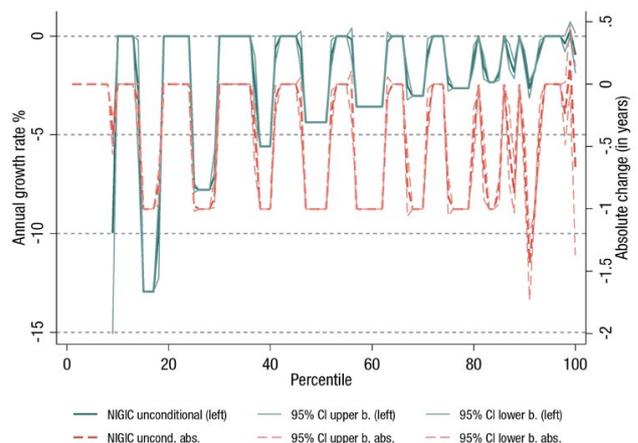


Fig. C5 Unconditional NIGIC. Period: 2004/05 to 2010

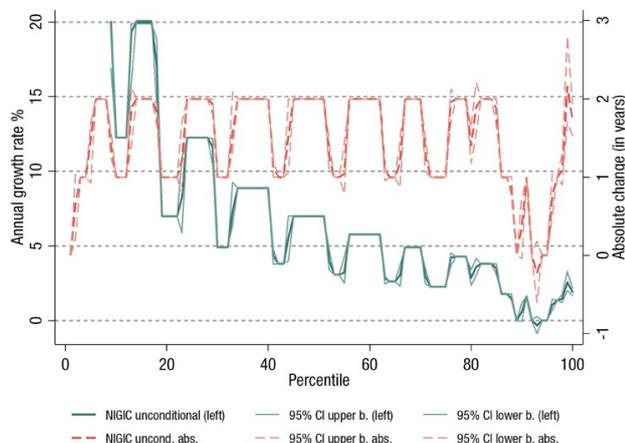


Fig. C6: Unconditional NIGIC. Period: 1999 to 2010

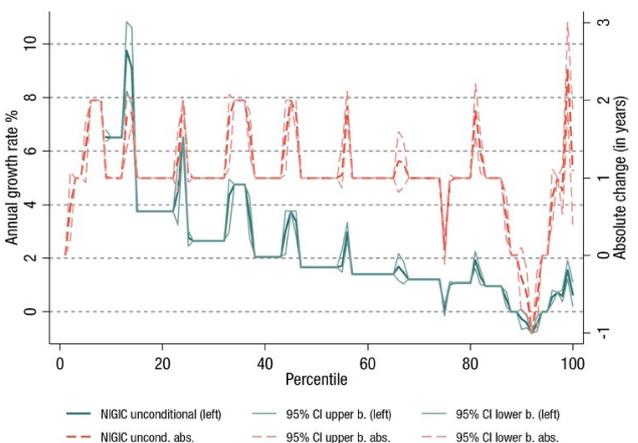


Table C1 – Distributional patterns of growth in Ethiopia, 1999-2010

PANEL A: Descriptive Statistics																
			HICES 99/00	HICES 04/05						HICES 10/11						
No. of Households			16672	21595						27829						
No. Of Individuals			77962	99225						17932						
Literacy Rate (% - age 15+)			28.05%	35.55%						-						
Years of Schooling (age 15-30)			5.32	4.89						6.35						
Annual expenditure (p.c. in 2011 US\$PPP)			747.5	935.59						1194.63						
Gini Index			0.32	0.32						0.29						
Palma Ratio			1.23	1.26						1.06						
PANEL B: Pro-poor growth rates and growth rates in the mean: Growth Incidence Curves and Unconditional NIGICs																
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum. avg. annual growth rate at the... percentile (in %)						Abs. change in the mean	Cum. abs. change at the...percentile (in %)					
				5 th	25 th	40 th	50 th	75 th	95 th		5 th	25 th	40 th	50 th	75 th	95 th
Avg. HH expenditures p.c. in 2011 US\$PPP	GIC	1999/00-2004/05	4.59	6.11	4.63	4.43	4.39	4.43	4.49	188.09	72.42	79.7	90.88	99.25	127.18	164.08
		2004/05-2010/11	4.16	4.51	5.47	5.48	5.44	5.16	4.86	259.04	85.35	156.5	182.8	197.6	226.31	253.3
		1999/00-2010/11	4.35	5.23	5.08	5	4.96	4.83	4.69	447.13	157.7	236.2	273.6	296.9	353.49	417.4
Avg. Years of schooling (age 15+)	Uncond. NIGIC	1999/00-2004/05	-1.66	n.d.	-4.05	-3.71	-3.28	-2.69	-2.4	-0.43	0	-0.21	-0.32	-0.34	-0.39	-0.44
		2004/05-2010/11	4.45	n.d.	13.76	11.46	10.15	7.9	6.6	1.46	0.79	1.41	1.55	1.57	1.55	1.47
		1999/00-2010/11	1.63	n.d.	5.21	4.22	3.76	2.89	2.36	1.03	0.8	1.2	1.23	1.23	1.16	1.02

D) Vietnam

Fig. D1: Growth incidence curve. Period: 2002 to 2006

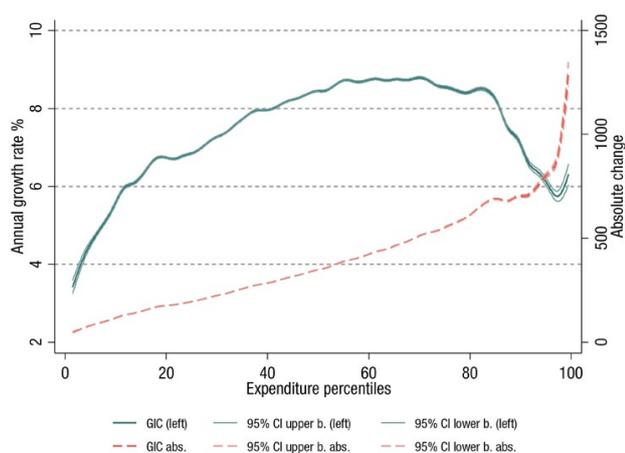


Fig. D2: Growth incidence curve. Period: 2006 to 2012

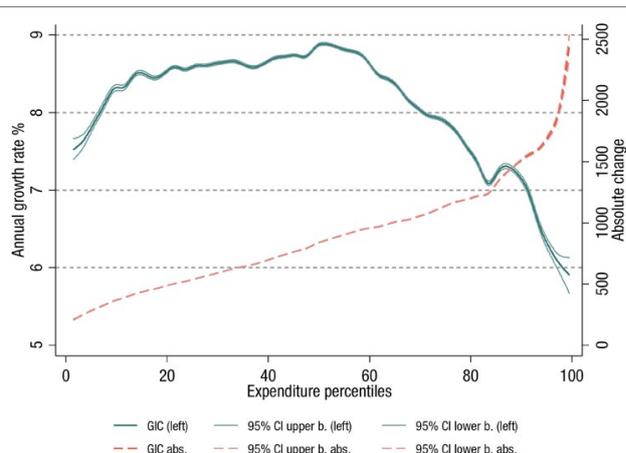


Fig. D3: Growth incidence curve. Period: 2002 to 2012

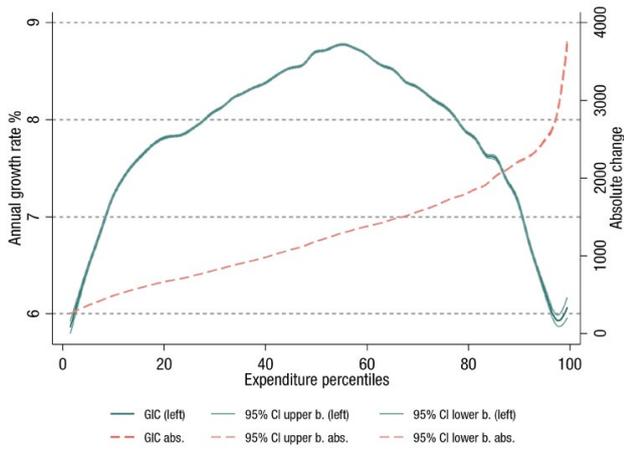


Fig. D4: Opportunity curve – years of schooling. Period: 2002 to 2006

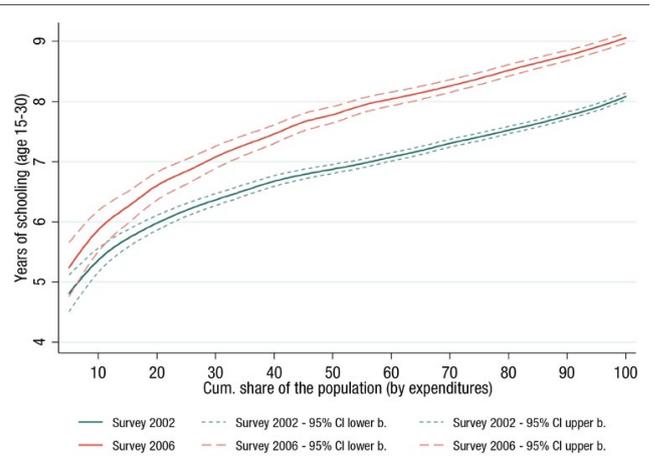


Fig. D5: Opportunity curve – years of schooling. Period: 2006 to 2012

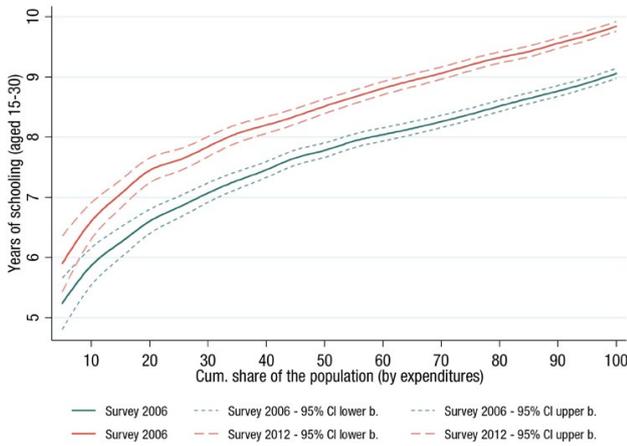


Fig. D6: Opportunity curve – years of schooling. Period: 2002 to 2012

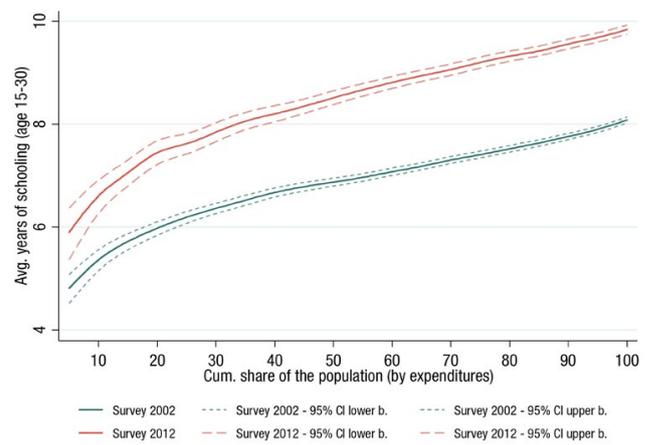


Fig. D7: Conditional NIGIC. Period: 2002 to 2006

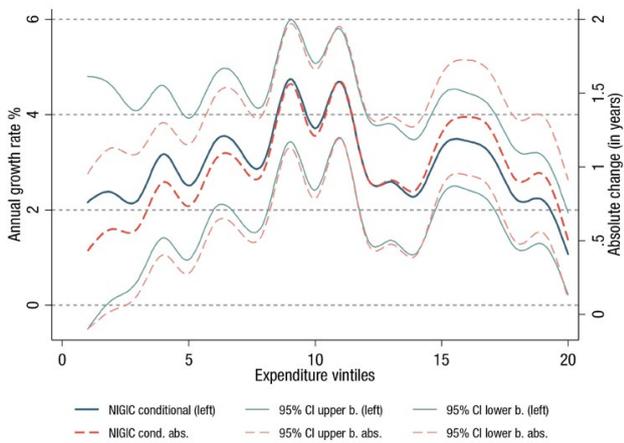


Fig. D8: Conditional NIGIC. Period: 2006 to 2012

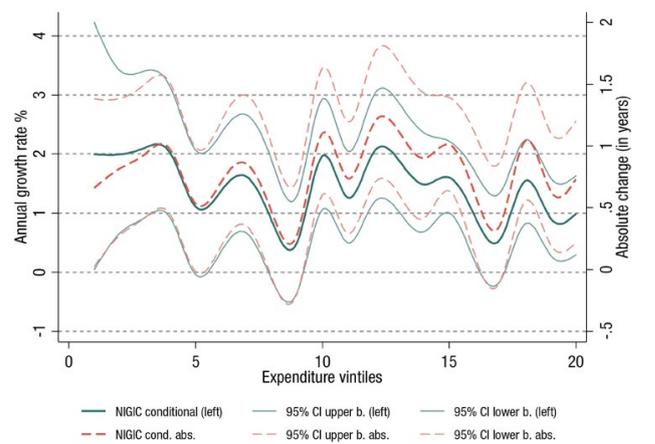


Fig. D9: Conditional NIGIC. Period: 2002 to 2012

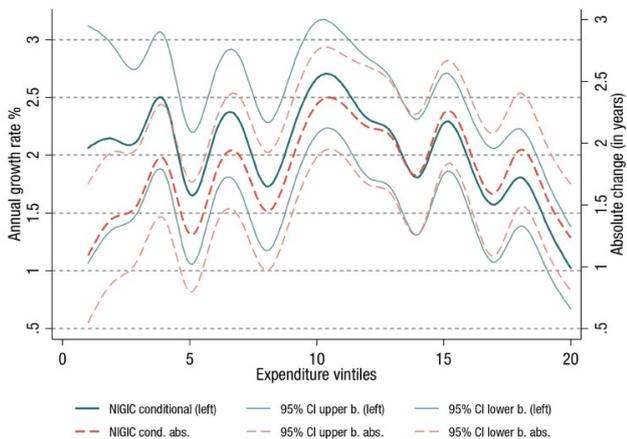


Fig. D10: Unconditional NIGIC. Period: 2002 to 2006

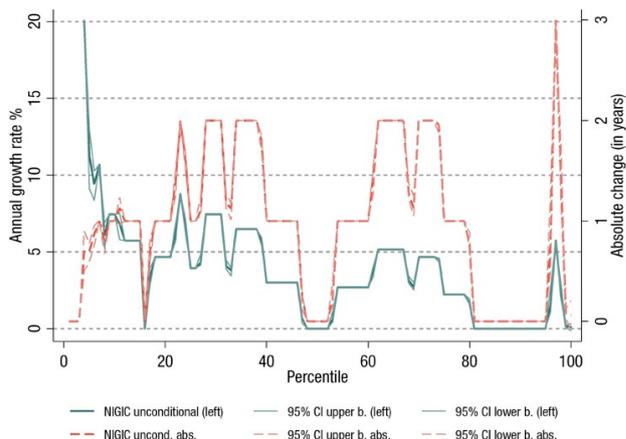


Fig. D11: Unconditional NIGIC. Period: 2006 to 2012

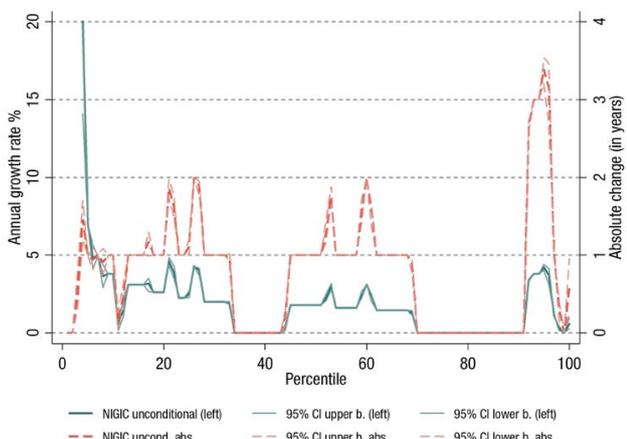


Fig. D12: Unconditional NIGIC. Period: 2002 to 2012

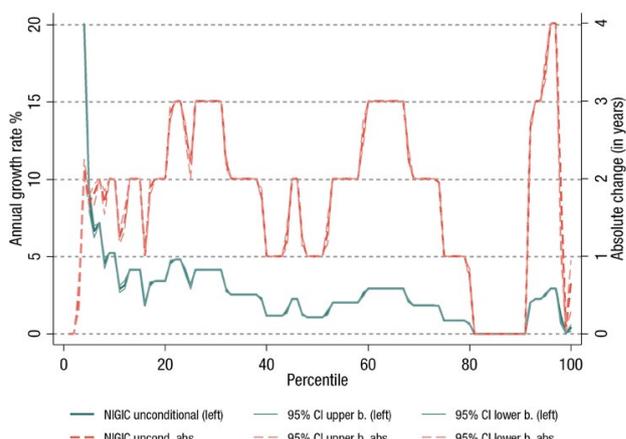


Fig. D13: Opportunity curve – adult literacy. Period: 2002 to 2006

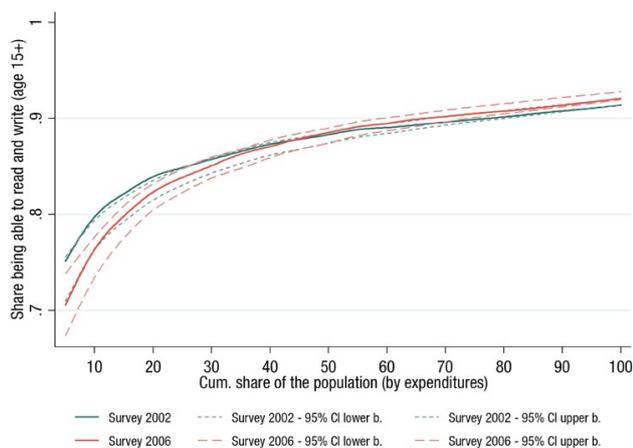


Table D1 Distributional patterns of growth in Vietnam, 2002-2012

PANEL A: Descriptive Statistics																	
			VHLS 02	VHLS 06						VHLS 12							
No. of Households			29530	9189						9399							
No. Of Individuals			132366	39071						36655							
Literacy Rate (% - age 15+)			91.86%	92.53%						80.86%							
Years of Schooling (age 15-30)			8.08	9.06						9.86							
Annual expenditure (p.c. in 2011 US\$PPP)			1201.56	1601.68						2494.43							
Gini Index			0.35	0.35						0.32							
Palma Ratio			1.4	1.37						1.22							
PANEL B: Pro-poor growth rates and growth rates in the mean: Growth Incidence Curves and Unconditional NIGICs																	
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum. avg. annual growth rate at the... percentile (in %)							Abs. change in the mean	Cum. abs. change at the...percentile (in %)					
				5 th	25 th	40 th	50 th	75 th	95 th	5 th		25 th	40 th	50 th	75 th	95 th	
Avg. HH expenditures (p.c. in 2011 US\$PPP)	GIC	2002-2006	7.45	3.94	5.71	6.39	6.76	7.4	7.46	400.12	62.51	131.13	173.27	202.55	284.99	366.5	
		2006-2012	7.66	7.63	8.25	8.39	8.46	8.45	8.19	892.74	240.49	393.11	478.53	536.78	686.55	829.55	
		2002-2012	7.58	6.14	7.23	7.58	7.78	8.03	7.89	1292.87	303	524.24	651.8	739.34	971.55	1196.05	
Avg. Years of schooling (age 15-30)	Uncond. NIGIC	2002-2006	2.89	15.55	6.79	6.39	5.42	4.72	3.81	0.98	0.28	0.87	1.17	1.06	1.16	0.97	
		2006-2012	1.39	13.5	4.03	2.94	2.55	2.14	1.84	0.78	0.59	0.93	0.82	0.78	0.81	0.77	
		2002-2012	1.99	14.3	5.12	4.3	3.68	3.16	2.62	1.76	0.87	1.8	2	1.85	1.98	1.74	
PANEL C: Pro-poor growth rates and growth rates in the mean: Opportunity Curves and Conditional NIGICs																	
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum. avg. annual growth rate at the... ventile (in %)						Abs. change in the mean	Cum. abs. change at the...ventile (in %)						
				1 st	5 th	8 th	10 th	15 th	19 th		1 st	5 th	8 th	10 th	15 th	19 th	
Avg. Years of schooling (age 15-30)	OC and Cond. NIGIC	2002-2006	2.89	2.16	2.48	2.77	3.06	3.08	3.01	0.98	0.43	0.65	0.79	0.91	0.97	1	
		2006-2012	1.39	2	1.84	1.63	1.55	1.59	1.46	0.78	0.66	0.78	0.74	0.73	0.82	0.79	
		2002-2012	1.99	2.06	2.1	2.09	2.15	2.18	2.08	1.76	1.09	1.43	1.53	1.64	1.79	1.79	

E) Bangladesh

Fig. E1: Growth incidence curve. Period: 2000 to 2010

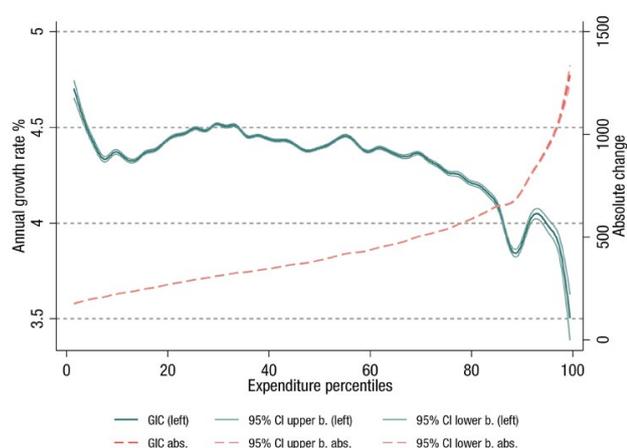


Fig. E2: Opportunity curve. Period: 2000 to 2010 – Years of education

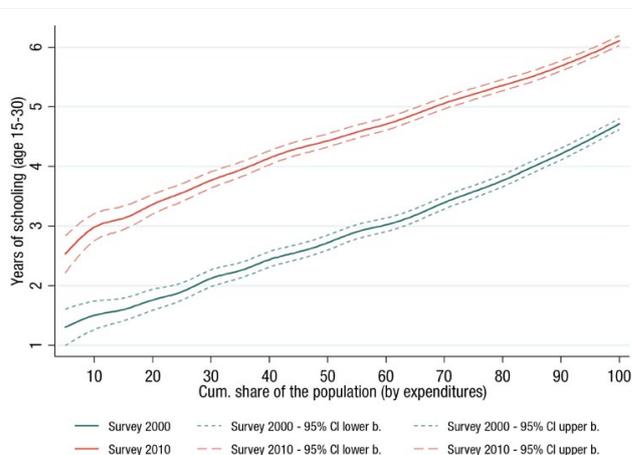


Fig. E3: Opportunity curve. Period: 2000 to 2010 – Adult literacy

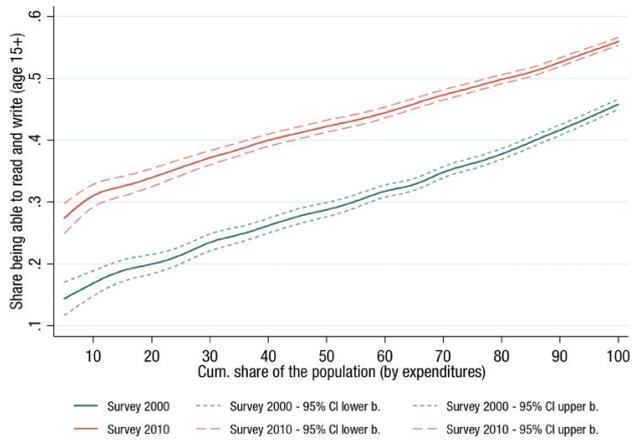


Fig. E4: Conditional NIGIC. Period: 2000 to 2010

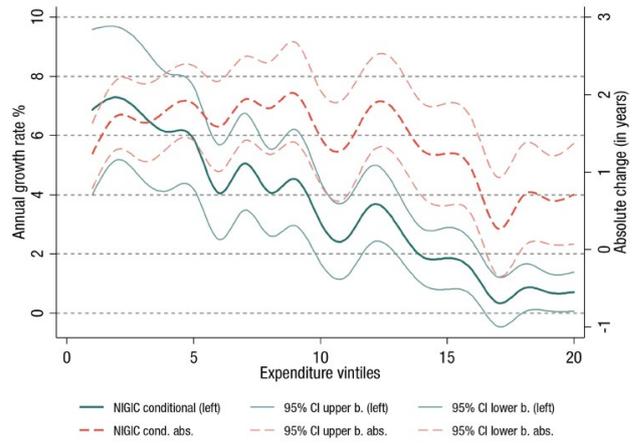


Fig. E5: Unconditional NIGIC. Period: 2000 to 2010

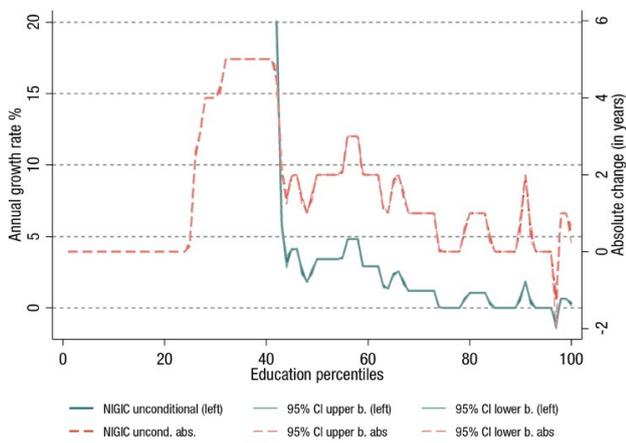


Table E1 Distributional patterns of growth in Bangladesh, 2000-2010

PANEL A: Descriptive Statistics																
			HIES 2000											HIES 2010		
No. of Households			7440											12240		
No. Of Individuals			38518											55580		
Literacy Rate (% - age 15+)			45.51%											55.8		
Years of Schooling (age 15-30)			4.66											6.11		
Annual expenditure (p.c. in 2011 \$PPP)			889.69											1342.63		
Gini Index			0.3											0.29		
Palma Ratio			1.11											1.05		
PANEL B: Pro-poor growth rates and growth rates in the mean: Growth Incidence Curves and Unconditional NIGICs																
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum. avg. annual growth rate at the... percentile (in %)						Abs. change in the mean	Cum abs. change at the...percentile (in %)					
				5 th	25 th	40 th	50 th	75 th	95 th		5 th	25 th	40 th	50 th	75 th	95 th
Avg. HH expenditures (p.c. in 2011 \$PPP)	GIC	2000-2010	4.2	4.58	4.43	4.45	4.44	4.42	4.35	452.94	186.72	235.52	267.99	288.17	345.92	416.46
Avg. Years of schooling (age 15-30)	Uncond. NIGIC	2000-2010	2.63	n.d.	n.d.	n.d.	5.29	3.17	2.14	1.4	0	0.01	1.68	1.8	1.74	1.46
Indicator	Tool	Reference Period	Ann. growth rate in the mean (%)	Cum. avg. annual growth rate at the... ventile (in %)						Abs. change in the mean	Cum. abs. change at the...ventile (in %)					
				1 st	5 th	8 th	10 th	15 th	19 th		1 st	5 th	8 th	10 th	15 th	19 th
Avg. Years of schooling (age 15-30)	OC and Cond. NIGIC	2000-2010	2.63	6.87	6.57	5.75	5.36	4.44	3.68	1.4	1.23	1.66	1.71	1.71	1.64	1.43

Appendix 2 – Summary

	INCOME			EDUCATION					
	Pro-poor weak def.	Relatively pro-poor	'Strong-absolute'	Conditional on income			Unconditional		
				Pro-poor weak def.	Relatively pro-poor	'Strong-absolute'	Pro-poor weak def.	Relatively pro-poor	'Strong-absolute'
UGANDA									
1999-2005	Y	N	N	Y	Y	Y	Y	Y	Y
2005-2011	Y	N	N	Y	Y	Y	Y	Y	Y
1999-2011	Y	N	N	Y	Y	Y	Y	Y	Y
GHANA									
1991-1998	N	N	N						
1998-2005	Y	N	N						
1991-2005	Y	N	N	Y	Y	Y	Y	Y	Y
1998-2012	Y	N	N						
2005-2012	Y	Y	N	N	N	N	Y	Y	Y
1991-2012	Y	N	N	Y	Y	N	Y	Y	Y
ETHIOPIA									
1999-2004	Y	Y	N				N	N	Y
2004-2011	Y	Y	N				Y	Y	N
1999-2011	Y	Y	N				Y	Y	Y
VIETNAM									
2002-2006	Y	N	N	Y	N	N	Y	Y	N
2006-2012	Y	Y	N	Y	Y	N	Y	Y	Y
2002-2012	Y	N	N	Y	Y	N	Y	Y	Y
BANGLADESH									
2000-2010	Y	Y	N	Y	Y	Y	n.d.	n.d.	N
	15Y 1N	6Y 10N	16N	9Y 1N	8Y 2N	5Y 5N	11Y 1N	11Y 1N	10Y 3N

Y for yes and N for no. Pro-poor according to weak definition if growth rates among bottom 25 percentiles are positive, pro-poor in the relative sense if growth rate at bottom 25th percentile is above the growth in the mean, and pro-poor in strong-absolute sense if the absolute change at the 25th percentile (or 5th ventile) is above the absolute change in the mean (see Tables A1-E1).

Appendix 3 – Technical note

1. Growth Incidence Curves, Non-Income Growth Incidence Curves and Opportunity Curves:

a. Definition and measurement

Our analysis to measure how the gains from economic growth are distributed along the income distribution follows the approach originally proposed by Ravallion and Chen (2003), that was extended by Klasen (2008), Grosse et al (2008) and Reimers & Klasen (2015) to include non-income welfare dimensions.

We assess economic growth and poverty reduction using the following instruments:

- **Growth Incidence Curves (GICs)** display income growth rates by quantiles of the income distribution (e.g. by percentiles).
- **Conditional Non-income Growth Incidence Curves (cNIGICs)** display growth rates of a given non-income indicator (such as years of schooling) conditional on quantiles of the income distribution.
- **Unconditional Non-income Growth Incidence Curves (uncond. NIGICs)** display growth rates of a given non-income indicator by quantiles of a non-income dimension, which allows to understand e.g. if growth in years of schooling was more heavily concentrated among the *education poor* compared to the *education rich*.
- **Opportunity Curves (OCs)** display *levels* of a given-indicator by cumulative income percentiles.

The construction of Growth Incidence Curves requires household survey data for two different years containing information on consumption expenditure per capita or an alternative income proxy. Individuals or households are ranked by their income in each of the two periods, and are then grouped in p quantiles.

Thus, as shown in Ravallion and Chen (2003), the mean growth rate in p.c. income over the two years considered, can be defined as in equation 1:

$$g_t(p) = \frac{y_t(p)}{y_{t-1}(p)} - 1 = \frac{L'_t(p)}{L'_{t-1}(p)} (\gamma_t + 1) - 1 \quad (\text{Equ. 1})$$

where $\gamma_t = \frac{\mu_t}{\mu_{t-1}} - 1$ represents the rate of growth in mean income μ and $L'_t(p)$ is the slope of the Lorenz curve at time t for quintile p .

Graphically, the GIC will result from plotting on the x-axis all population quintiles ranked by income per capita and on the y-axis the quantile-specific growth rates of per capita income.

As shown in Klasen (2008) and Grosse et al. (2008), the concept and methodology of GICs can be extended to non-income indicators in order to obtain Non-income Growth Incidence Curves (NIGIC). In this case, the authors propose two different ways of measuring pro-poor growth in non-monetary dimensions. The first is the “unconditional” NIGIC, where individuals are ranked by a certain indicator of non-income wealth (e.g. education measured by years of schooling), which is displayed on the x-axis, while quantile-specific growth rates of that indicator are displayed on the y-axis. Alternatively, in the “conditional” NIGICs, individuals are ranked by per capita income (just as in the GICs) on the x-axis and displayed against the quantile-specific growth rates of the non-income indicator on the y-axis.

Therefore, while the first approach considers the extent to which different parts of the *income distribution* achieved some progress in non-income dimensions, the latter shifts the focus towards developments in a certain non-income dimension for the most deprived *percentiles of that dimension*.

Lastly, as argued in Ali and Son (2007), another relevant approach, that gives more weight to the opportunities of the poor than to those granted to the richest percentiles, are so-called Opportunity curves (Reimers and Klasen, 2014). In this case, the x-axis displays the cumulated quantiles of the population ranked by p.c. income, and the average levels of a certain non-monetary indicator for each cumulative income quintile on the y-axis.

b. Computation

In this study, we construct annualised growth rates, which allow meaningful comparisons between GICs and NIGICs that are estimated based on different time intervals, i.e. different time spans between survey waves.

Furthermore, for constructing GICs and reporting summary statistics on income inequality measures, prior to generating the income percentiles that we use for analysis, we exclude the poorest and richest 1% of individuals from the sample arguing that their incomes represent outlier values that are likely due to misreporting.

2. Data and description of the main variables used

a. Variables of interest

In this study we use individual-level data and consider per capita (or per adult equivalent) consumption expenditure as the main proxy for income.

We focus on education measured in years of schooling of individuals aged 15-30 as the main non-income dimension for the computation of NIGICs and Opportunity Curves. In addition, we consider literacy rates for adults, i.e. individuals with ages 15+. We define literacy as being able to read and write.

For generating years of education, we generally follow the strategy used by the World Bank Survey-based Harmonized Indicator Program, even though we made some country specific adjustments (see chapter 2.2. for details). The computation is based on the highest grade or class completed:

“For individuals who are currently enrolled in school, their years of education completed correspond to the class currently attending minus one. For individuals who are not currently enrolled in school, the years of completed education corresponds to the highest level of education completed. This is a continuous variable of the number of years of formal schooling completed. It is constructed only if the survey asked number of year of education or highest grade level completed; otherwise, the values are constructed as missing. The years of education that each grade corresponds to varies by country, for example - some countries may have 5 or 6 years of primary school, 3 years of lower-secondary school, while other countries may have 4 years of primary school and 4 years of lower-secondary school. For higher education, the grades/years may not have been asked explicitly in the survey questionnaire. In such cases the variable should be constructed based on the following assumptions. 1) If the individual has completed the tertiary education specified, add to years of completed education - 4 years for BA/BSc, 6 years for MA/MSc, and 8 Years for PhD after the completion of secondary education. 2) If the individual has not completed tertiary education or completion cannot be ascertained, add to years of completed education – 2 years for BA/BSc, 5 years for MA/MSc, and 7 years for PhD. The variable does not take into account the actual number of years required to reach this grade level, in other words, first grade repeated three times only counts as 1 year of schooling.”[SHIP Reference Manual World Bank Survey-based Harmonized Indicator Program; November 2001. p.7]

b. Data sources by country

i. Uganda

- Data: Uganda National Household Survey 1999/2000 (UNHS 99/00); Uganda National Household Survey 2005/2006 (UNHS 05/06); Uganda National Panel Survey 2011/2012 (UNPS 11/12).
- Years of schooling are computed based on the highest grade/class achieved (“s3q6” in UNHS99/00; “h4q4” in UNHS05/06; “h4q7” in UNPS11/12).
- Expenditure defined as consumption food and non-food expenditure per adult equivalent in 2005 US\$PPP, in 05/06 prices, spatially/temporally adjusted in each survey year (“welfare”). Weights: UBOS Sample weights (“mult”).
- In the questionnaires; information on literacy (and education more generally) was collected differently in each survey wave (e.g. collected for different subset of individuals). For literacy, a valid comparison can only be done for 2005 & 2011.

ii. Ghana

- Data: Cleaned and harmonized datasets by the World Bank Survey-based Harmonized Indicator Program (SHIP) for the following surveys: Ghana Living Standards Survey 1991/1992 (GLSS 91/02); Ghana Living Standards Survey 1998/1999 (GLSS 98/99); Ghana Living Standards Survey 2005/2006 (GLSS 05/06); Ghana Living Standards Survey 2011/2013 (GLSS 12/13).
- Years of schooling are computed based on the highest grade/class achieved (“EDYEARS”). For GLSS 98/99, information on completed years of schooling was not available. Therefore, we excluded this wave for the computation of conditional and unconditional growth incidence curves and of opportunity curves.
- Expenditure defined as per capita annual food and non-food consumption expenditure, in 2005 US\$PPP, real terms (i.e. 2005 prices) and regionally adjusted. The variable used is “PCEXPDR_PPP”. In 2012/13 “HHEXP_R” divided by “HHSIZE”. Weights: “WTA_HH” and in GLSS12/13: “WTA_S_HHSIZE”.

iii. Ethiopia

- Data: Cleaned and harmonized datasets by the World Bank Survey-based Harmonized Indicator Program (SHIP) for the following surveys: Ethiopia Household Income Consumption Survey 1999/2000 (HICES 99/00); Ethiopia Household Income Consumption Survey 2004/2005 (HICES 04/05); Ethiopia Household Income Consumption Survey 2010/2011 (HICES 10/11).³⁹
- Years of schooling are computed based on the highest grade/class achieved (“EDYEARS”).
- Expenditure defined as per capita annual food and non-food consumption expenditure, in 2011 \$PPP, real terms (i.e. 2011 prices)⁴⁰. Weights: “WTA_HH”.

iv. Vietnam

- Data: Cleaned and harmonized datasets Vietnam Household Living Standard Survey (VHLSS) 2002, 2006, 2012.
- Years of schooling are computed based on the highest grade and highest degree obtained (“m2c1” for 2002; “m2ac1” for 2006 and 2012).⁴¹ Higher education includes four levels: college (3 years) or undergraduate (4 years), master (2 years), and doctorate (4 years). Information on literacy is no longer available in VHLSS 2012.
- Expenditure is defined as annual per capita expenditure for the respective year in 2011 US\$PPP, real terms (i.e. 2011 prices). In all three VHLSS years, the variable used in nominal terms is “pcex1nom”, which stands for “comparable nominal per capita consumption”.⁴²
- Household weights vary according to the number of observations in the dataset. Variable “wt30” is used as household weight in year 2002 (around 30,000 HHs), while variable “wt9” is used in 2006 and 2012 (around 9,000 HHs).

v. Bangladesh

- Data: Household Income and Expenditure Surveys (HIES) 2000 and 2010. Cleaned dataset provided by the World Bank.
- Years of schooling is computed based on the highest grade achieved, and current class attended. Note that the skipping pattern in the household questionnaire is such that individuals who cannot read or write are not reporting their highest grade achieved, but are asked about their current school attendance. Due to a high number of missing values in years of education, we are using information on literacy for imputing missing years of schooling: if a person is not literate, we assume zero years of schooling, if a person is literate, we assume (at least) primary education and thus replace the missing value by 5 years of schooling.
- Income is based on expenditure aggregates, which is defined as household food and non-food expenditure (“pcexp” in HIES 2000; “p_cons” in HIES 2010) and transformed in annual per capita values in 2011US \$PPP terms: Sampling weights are used (“hhwght” in HIES 2000; “wgt” in HIES 2010).

3. Robustness checks

We ran two types of robustness checks that we detail below. Generally speaking, we find the main findings presented in this chapter to yield the most credible results or to be robust to these consistency checks.

At the same time we note that our findings sensitive to using sampling weights. Sampling weights are used to account for the fact that different households/individuals enter the sample with a different probability, and they represent a

39 Since the SHIP 2010/11 dataset at our disposal was only including observations at the household level, for the computation of the unconditional NIGIC, the data used for 2010/11 was a 10-15% of the original Ethiopia Household Income Consumption Survey 2010/2011.

40 The variable was constructed as per capita annual food and non-food expenditure in local currency * CPI2011_DEF * (1/PPP2011). The CPI2011_DEF is equal to the ratio of the value of the CPI in 2011 to CPI in the survey year (base year: 2010). CPI data was extracted from the World Development Indicators Database. The 2011 PPP was extracted from the “Final Report of the ICP 2011 Purchasing Power Parities and the Real Size of World Economies” (World Bank, 2015).

41 Formal education in Vietnam consists of 12 years of basic education. Primary education lasts for 5 years, and is intended for children aged 6-11. Basic (i.e. junior) secondary education lasts for 4 years and is intended for children aged 11-15. Pupils can move on to long-term vocational training courses of 1 to 3 years in length, at vocational training schools. General secondary education (also called ‘upper secondary education’) lasts for 3 years and is intended for children aged 15-18.

42 The VHLSS data provide two types of expenditure information: comprehensive and comparable consumption aggregate. Comparable aggregate was designed to make expenditure information to be strictly comparable with the consumption aggregate initially developed using 1992-93 VLSS, while comprehensive aggregate include a more updated imputed value of annual consumption of housing services (Kozel, 2014, p.62; Glewwe, 2003).

	HICES 1999/2000	HICES 2004/05	HICES 2010/11
% urban	49.26	56.04	62.92
%rural	50.74	43.96	37.08

different number of households/individuals in the underlying population. In order to estimate graphs and summary statistics that are representative for the study population (usually the national level), rather than for the sample of observations only, we apply individual level sampling weights throughout the analysis.

3.1 Using information on literacy to replace missing years of education

In Bangladesh, the questionnaire structure, analysis of missing values, and the comparison of mean education figures to external sources informed the decision to use information on literacy to impute missing information in years of schooling. For considerations of consistency, we re-run the analysis for the other countries when doing the same imputation. We conclude that we should not make imputations based on literacy in other countries: our results do not notably change in Ghana and Vietnam, in Uganda information on literacy was not collected in a consistent manner across survey waves and can thus not be used for our purposes, and in Ethiopia we find this imputation not produce credible results.

3.2 Considering the income of the poorest and richest 1% as outlier values

We exclude the richest and poorest 1% in terms of p.c. income from the sample before generating GICs and related statistics. We do not do the same when looking at non-income dimensions, i.e. when generating conditional NIGICs and OCs. This is equivalent to assuming that the poorest and richest 1% of households are not systematically different, in their non-income indicators, from their neighbouring income percentiles. For robustness, we exclude these individuals from the sample. In case of differences, what we would expect to see in the graphs are some changes at the bottom and top end of the spectrum, and somewhat stretched curves in between. This is essentially what we find, and the main findings remain the same.

3.3 Note on the case of Ethiopia

Our findings on the distribution of income growth confirm WB findings (World Bank, 2015b) based on the same survey data that we have used. The comparison between ours and WB's graphs highlights some difference in the estimated rates of growth especially at the bottom and top expenditure percentiles. Yet, the shapes of the GIC curves are very similar.

One possible reason of the difference in our and the WB's estimates might be related to (i) a slight over-representation of the urban sector in our sample (see table 1 below), and (ii) our decision to exclude the 1st and 100th percentiles for the generation of the GIC curves.

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