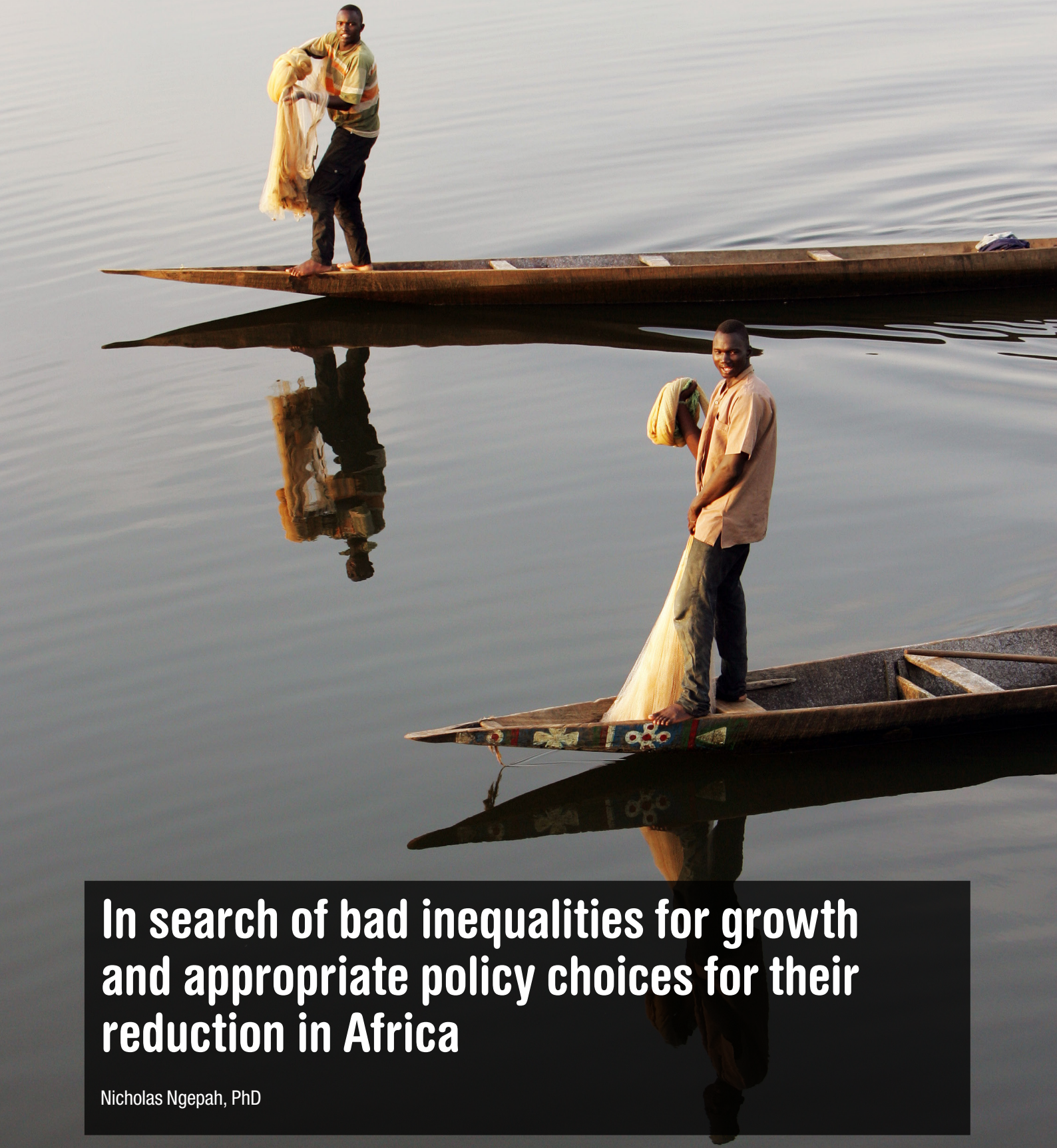

In search of bad inequalities for growth and appropriate policy choices for their reduction in Africa

Nicholas Ngepah, PhD

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Contact
nnnbal@yahoo.fr

Cover image: Fishermen at work on Lake Buyo, Côte d'Ivoire. © Ky Chung for the United Nations.

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Headline findings

- There are good and bad inequalities with respect to economic growth. *Bad* inequalities are those that associate negatively with growth, while *good* ones are those that show a positive impact.
- All inequalities between the middle and bottom and between the bottom and top of the income distribution are bad for economic growth in Africa. Policy efforts that target the reduction of these types of inequality by one point each would enhance growth by up to three percentage points in the next five years, translating to about a 0.6 percentage point increase in growth per annum.
- The advantages that males have over females in labour market participation significantly reduce growth: a one point reduction in this inequality would lead to a 0.8% increase in annual growth.
- To address skills inequality, policy should emphasise increasing and extending educational spending beyond primary education to secondary and higher education.
- Measures that address obstacles in the labour market against the poor, unskilled and women should be encouraged. Proper management of urbanisation, governance of natural resource rents and addressing dependency through social inclusion measures are equally good for reducing bad types of inequality.
- As Africa searches for an industrialisation path, a strategy that prioritises its agricultural value chain would reduce bad inequalities and be more inclusive. In the short term, measures to promote the flow of external resource such as foreign aid and foreign direct investment into low skill labour-intensive sectors, and/or improve skills to move to skill-intensive sectors of the economy, can complement longer-term educational and skills development policies.

Acknowledgements

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Acronyms

AU	African Union
CAR	Central African Republic
CSOs	Civil Society Organisations
EAP	East Asia and Pacific
GDP	Gross Domestic Product
GMM	Generalised Method of Moments
HDI	Human Development Index
IHDI	Inequality Adjusted HDI
IMF	International Monetary Fund
INGOs	International Nongovernmental Organisations
LAC	Latin America and the Caribbean
LDC	Least Developed Country
LSDVs	Least Square Dummy Variable
MDG	Millennium Development Goal
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
RI	Regional Integration
SDG	Sustainable Development Goal
SMEs	Small and Medium Enterprises
SSA	Sub-Saharan Africa
WDI	World Development Indicators

Abstract

This work attempts to inform Sustainable Development Goal implementation strategies focusing on Goals 1, 5, 8 and 10 in Africa. It starts by exploring the progress and limitations pertaining to the relevant SDGs in the African context. It follows by employing a systems Generalised Methods of Moments (GMM) regression technique to determine the impact of different inequalities on economic growth and then examines the underlying causes of those inequalities that impact economic growth negatively. Not all inequalities along the income distribution spectrum have the same impact on growth. There are *bad* inequalities with a negative impact on economic growth, and *good* inequalities with a positive impact on growth. The findings suggest that all inequalities between the middle and the bottom and between the bottom and top of the income distribution are bad for economic growth in Africa, and that the advantages that males have over females in labour market participation significantly reduce growth. Policy efforts that target the reduction of all the *bad* types of inequality by one point each would enhance growth by up to three percentage points in the next five years. To address skills inequality, policy considerations should emphasise increasing and extending educational spending beyond the primary level. Measures that address obstacles in the labour market against the poor, unskilled and women are to be encouraged. The proper management of urbanisation, governance of natural resource rents and addressing dependency through social inclusion measures are equally good for reducing *bad* types of inequality. As Africa searches for an industrialisation path, a strategy that prioritises the agricultural value chain would reduce bad inequalities and be more inclusive. In the short term, measures to promote the flow of external resources such as foreign aid and foreign direct investment into low skill labour-intensive sectors, and/or improve skills, can complement longer-term educational and skills development policies.

1. Introduction

The United Nations General Assembly (UN, 2015) recognises poverty eradication in all its forms and dimensions as an indispensable precondition for sustainable development. This recognition has given birth to an inspiring vision encapsulated in a new agenda of 17 goals known as the Sustainable Development Goals (SDGs). The SDGs were adopted at the 69th session of the General Assembly to build on the Millennium Development Goals (MDGs).

In line with the 'leave no one behind' agenda, this paper focuses on specific types of inequalities in Africa, their relationship with economic growth and the determinants of these inequalities in order to suggest policy measures for leaving no one behind. Consequently, the paper focuses directly on SDGs 5 (gender inequality), 8 (inclusive growth) and 10 (reducing inequality). Given the interaction of inequality and growth in determining poverty outcomes (Ravallion, 2009), the paper therefore also indirectly focuses on goal 1 of eradicating poverty.

Within the economic pillar of the SDGs, the choice of these goals has been encouraged by the report of the Stakeholders' Forum of the SDGs (Osborn et al., 2015). The work ranks SDGs by their 'transformational challenges in developing countries'.[1] It ranks the inequality reduction goal as fifth among all the SDGs. This implies that a significant challenge is expected in inequality reduction compared to the other goals and hence more careful attention is needed.

Inequality is a key determinant not only of the ability of growth to reduce poverty but also of the level of growth itself. There are three concerns about inequality. First, it may reduce economic growth. Second, it may hinder the poverty-reducing power of growth. Third, it may promote the inefficient use of resources and breed unstable societies, leading to unsustainable development. There is a general consensus that reducing inequality will make growth more pro-poor and development more sustainable (Ravallion, 2009). This naturally leads us to the consideration of SDG 8, particularly sub-goal 8.1, which stipulates at least 7% growth in gross domestic product (GDP) per annum in least developed countries (LDCs).

The Overseas Development Institute (ODI) flagship report on SDGs (Nicolai et al., 2015) provides an SDG Scorecard 2030. The report suggests that although LDCs on average may be moving towards meeting the targets 8.1 (economic growth in LDCs) and 1.1 (ending extreme poverty) for developing countries, there is deep concern that the sub-goal 10.1 relating to reduction of income inequality would need a change of direction in order to start to record progress on its achievement. Hoy and Samman (2015) find that income growth of the bottom 40% of the distribution in 55 of a sample of 100 countries (housing about 80% of the global population) was below the mean growth rate of their country on average. A good number of these countries are in Africa.

The objective of this paper is twofold. First, we aim to evaluate the growth-inequality relationship along the income distribution spectrum and gender dimensions in order to separate *good* inequalities from *bad* inequalities. We consider bad inequalities to be those that have a negative impact on economic growth and good ones to be those with a positive effect on growth. Secondly, we analyse determinants of those inequalities that relate negatively to economic growth in order to suggest policy measures to address SDGs 8.1 and 10.1 and consequently 1.1. Our focus on the inequality-growth nexus is based on the fact that inequality is a key driver of poverty, both directly through its effects on making growth less pro-poor and indirectly through growth reduction (Ravallion, 2004). The importance of disaggregating inequalities with respect to their differing effects on economic growth is to isolate targeted policy measures that can, with limited resources, reduce bad inequalities, enhance growth and ultimately lead to the eradication of poverty.

African economies have remained resilient in their economic growth performance despite global financial crises and dismal recovery rates in the rest of the (especially developed) world. On average, African economies have registered robust economic growth of 5% per annum over the last decade (Martins, 2013), and about a third of African economies have grown by at least 6% per annum (World Bank, 2013). Although Africa on average made good progress towards the MDGs, it still lags behind on the poverty goal – both in absolute terms and relative to other regions like Latin America. Despite the robust economic growth of the last decade, the region's 14% poverty reduction between 1990 and 2010 (UNECA, 2015) is still just half of the regional target of 28%.

Depending on the conceptualisation of pro-poorness of growth, we know that sustained economic growth is the key basis for sustained poverty reduction (Dollar and Kraay, 2002). There is strong concern that the high economic growth has not been beneficial to the majority of the African population (McKay, 2013). The growth has

1 A score combining whether the goal is applicable, implementable and transformative (i.e. whether the achievement of the goal/target will require significant new and additional policy action beyond what is currently in place and/or planned).

not translated to poverty reduction at a commensurate rate, despite marked improvements in human development indicators in sub-Saharan Africa (SSA).[2] The World Bank (2013) identifies persistently high inequality as the underlying reason for the slow pace of poverty reduction.

Besides persistently high inequality, regional economies rely heavily on commodities for growth. Falling commodity prices consequently pose a challenge to future growth prospects in Africa.

African countries are integrating the SDGs into their respective development policies. The past decades of development policy efforts were largely underpinned by the MDGs, with key national development agendas aligned to these goals (Scott et al., 2015). It is expected that the SDGs will now set the pace and be the main basis of future policy agendas for most, if not all, African countries. There have also been continental efforts in development policy initiatives. The most ambitious one is the recent African Union Agenda 2063,[3] which seeks to build a prosperous and united Africa based on shared values and a common destiny. The first of the seven sets of aspirations upon which the vision stands is based on inclusive growth and sustainable development, thereby encompassing the four SDG focus goals for this paper.

The rest of the paper is framed as follows. Section 2 explores current developmental progress and limitations in Africa, especially in the light of the MDGs and the forward-looking SDGs, with a focus on growth, poverty and inequality. Section 3 explains the methodological approach that is adopted. Section 4 reports the research findings, while Section 5 draws implications for leaving no one behind. Section 6 highlights priority actions for the first 1000 days of the SDGs and Section 7 concludes.

2 Up to 70% primary enrolment rates in 2010, 60% adult literacy, falling child mortality from 175/1000 to 125/1000 between 1990 and 2010 (World Bank, 2012).

3 http://agenda2063.au.int/

2. Current developmental progress and limitations

This section explores the performance of the African continent with respect to the selected goals. We first look at Africa's impressive economic growth and its composition over the past decade and a half, and highlight underlying challenges. We then contrast the impressive growth picture with that of inequality before proposing a contextual definition of 'leave no one behind'. The section concludes by elaborating on the implications of growth, inequality and poverty on leaving no one behind.

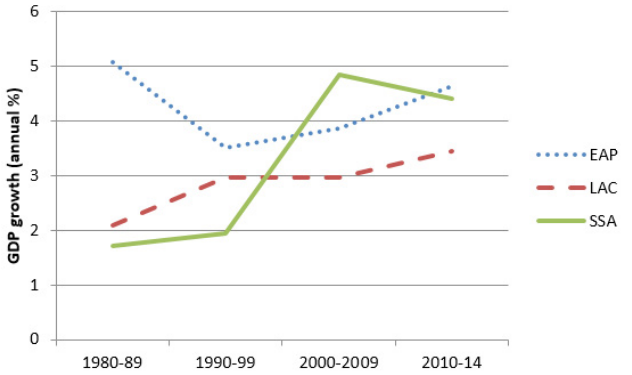
2.1 Economic growth (SDG 8.1)

2.1.1 Impressive but uneven growth performance

On average, African economies took a significant positive turn in the early 2000s, growing at above 5% per annum compared to barely 2% in the previous decades. Year on year, average growth in Africa for the past decade and a half stood above the world average (4%) and much higher than the Latin America and the Caribbean (LAC) average (3%). The growth rates in Africa were only surpassed by those of emerging and developing Asian countries (8%). Figure 1 compares decadal average growth in the three key developing regions of the world – East Asia and Pacific (EAP), LAC and SSA. Although growth rates after the 2008 crisis appear weaker compared to those prior to the crisis, SSA's growth rates nonetheless remain impressive compared with the rest of the world except Asia.

It is noteworthy that significant diversities underlie this impressive African economic performance. Across all the five sub-regional groupings in Africa,[4] there is a mixed bag of different growth rates. There are countries with growth rates of 6% and above, which we consider high for the purpose of this work, those with growth rates ranging from 3.5% to 5.9% (medium), and those with 3.4% growth rate and below (low). For the past one and a half decades (2000-2014), 12 countries recorded average growth rates in excess of 6% per annum (Figure 2, overleaf); 26 countries are in the medium-growth category (e.g. Burkina Faso, Burundi, Cameroon and Namibia), and 15 are in the low-growth category (e.g. Gabon, South Africa, Togo). Central African Republic and South Sudan[5] are the only

Figure 1: Comparative economic growth rates in emerging and developing regions



Source: Author's computation using data from the World Bank (2015).

countries that have recorded average negative growth rates for the period.

An examination of the economic structures shows that the services sector accounts for the largest share of Africa's economies, followed by industry (of which extractives is the most significant with manufacturing accounting for the rest) and agriculture (Table 1, overleaf).

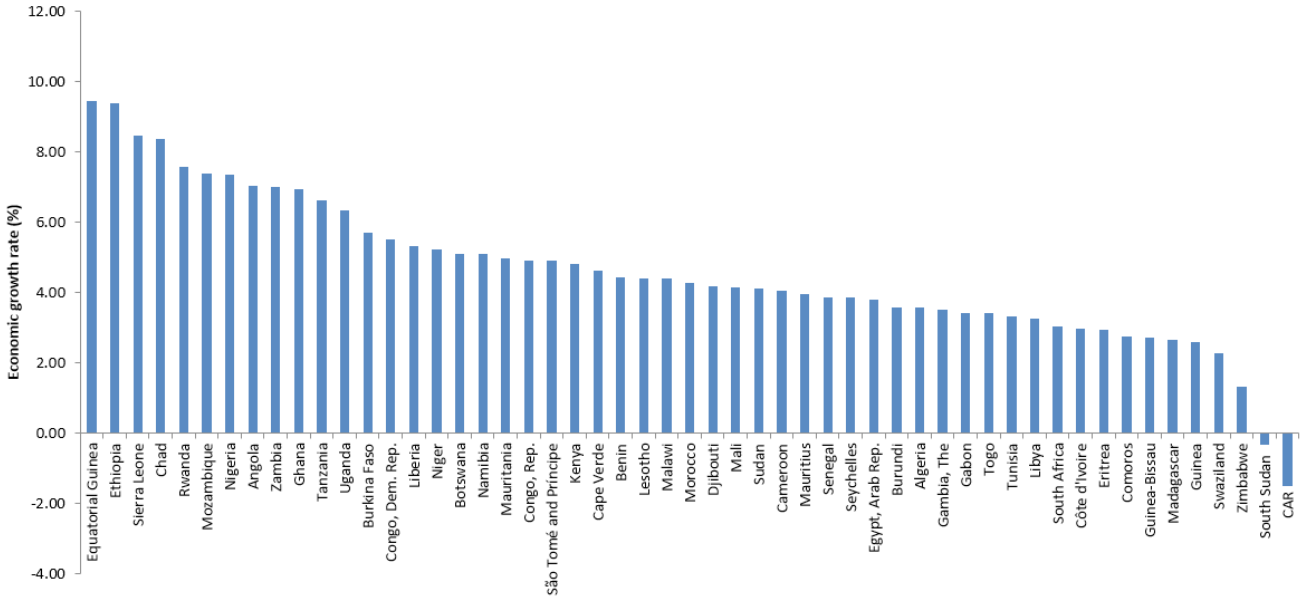
The *African Economic Outlook 2015* (AfDB, 2015) identifies three key drivers of growth in Africa: political stability, high commodity demand and consequent soaring commodity prices, and improved economic policies.

In the 1980s and 1990s, most of the countries that recorded very low or negative economic growth were also marked by civil war, military coup and social unrest. The last one and a half decades of Africa's economic performance have been marked by general political stability. Except for Central African Republic, Côte d'Ivoire, Guinea, Guinea Bissau and Madagascar, where growth has remained low on average, other formerly politically unstable countries have recorded impressive growth. Recent political tendencies in high-to-medium growth countries like Burundi, Democratic Republic of

4 Eastern Africa Community (EAC), Economic Community of West African States (ECOWAS), Economic Community of Central African States (ECCAS), Southern Africa Development Community (SADC) and North Africa. These sub-regions are loosely defined here to include other non-aligned countries falling within each region.

5 Data for South Sudan is from the time it became a nation in 2012.

Figure 2: Economic growth rate in individual African countries



Source: Author's computation using data from the World Bank (2015).

Congo, and Rwanda therefore pose a significant risk to the economic gains in these countries.

High commodity demand and consequently high prices in emerging economies like China also significantly drove high growth in Africa. High demand for oil and minerals has underpinned high growth in Angola, Chad, Equatorial Guinea, Nigeria and Sierra Leone. The recent slump in commodity demands and prices has consequently brought about a slight tampering of the growth in Africa. Unaccommodating global financial conditions have added to the falling commodity prices, leading the International Monetary Fund (IMF) (2015) to project economic growth in SSA to be 3.5% in 2015 and 4.5% in 2016, down from 5% in 2014. Following the global crises, external demand has been weak due to waning export opportunities. However, improving domestic demand has helped attenuate the effects of weakening external demand.

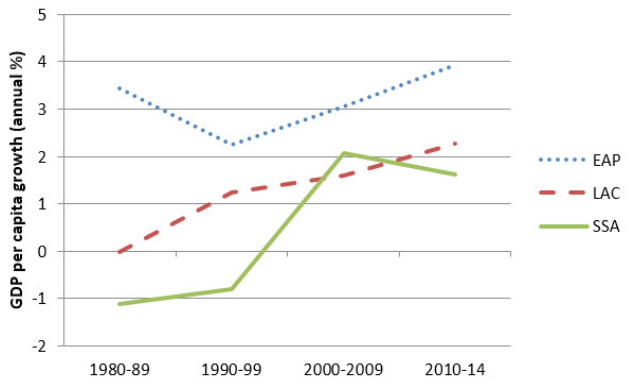
In addition, enhanced macroeconomic stability resulting from low inflation, fiscal prudence and debt relief has led to growth rates of 8% and above in non-resource rich countries like Ethiopia and Rwanda. A number of African countries have also improved their economic policies and conditions for doing business. Countries like Benin, Côte d'Ivoire, Democratic Republic of Congo and Togo top the list of those in which growth prospects have been enhanced by business climate improvements (IMF, 2015).

Table 1: Composition of Africa's GDP

	1980-89	1990-99	2000-09	2010-14
Services	45.32	47.68	51.33	57.31
Agriculture	20.55	20.33	17.97	15.01
Industry less manufacturing	18.46	17.65	17.99	16.51
Manufacturing	15.93	14.37	12.66	11.16
Natural resource rents	2.11	0.72	1.08	2.41
GDP growth	1.72	1.94	4.83	4.41
GDP per capita growth	-1.12	-0.81	2.06	1.61

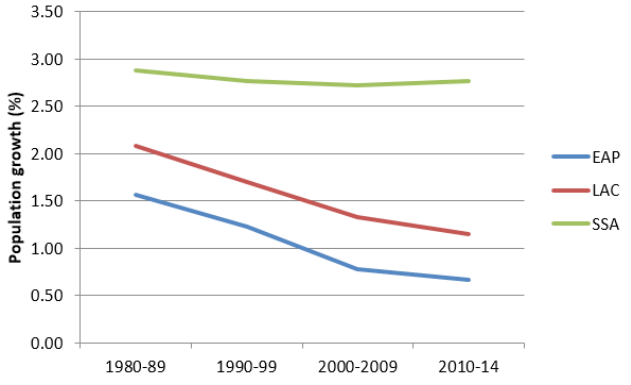
Source: Author's computation using data from the World-Bank (2015) World Development Indicators

Figure 3: Comparative per capita GDP growth rates in emerging and developing regions



Source: Author's computation using data from the World-Bank (2015)

Figure 4: Comparative population growth in emerging and developing regions



Source: Author's computation using data from the World Bank (2015)

2.1.2 Not-so-good comparative outlook for per capita growth

The impressive story in terms of GDP growth becomes somewhat different when considered in per capita terms, taking into account population growth. Although the trend is similar, the magnitude of growth is low compared to EAP and similar to LAC (Figure 3). The period 2000-2009 shows some improvements relative to LAC, however, the situation seems to be deteriorating again since 2010. While average population growth per decade has remained stable at closed to 3% for SSA, that of EAP and LAC has been low and falling to 0.7% and 1.2% respectively (Figure 4).

According to Bloom et al. (2012), SSA has the most significant wealth gradient for youth dependency: on average, the youth dependency ratio is 1.07 for the poorest households and 0.72 for the richest (the figures are 0.91 and 0.57 respectively for Latin America). In other words, high fertility rates place a disproportionately higher burden of dependency on the poor in Africa. This can be a considerable factor in the persistently high inequality that accompanies Africa's impressive economic growth.

2.2 Inequality reduction and poverty eradication (SDG 1.1 and 10.1)

The biggest challenge to Africa's sustained growth and future political stability is perhaps the persistently high inequality. The fruits of the impressive growth recorded for the past one and a half decades in Africa have not reached all sectors of the society, especially the most marginalised (McKay, 2013). Evidence shows that Africa is the second most unequal continent in the world after Latin America (Ravallion and Chen, 2012). Although Latin America's Gini coefficient has fallen from a high of 0.541 in the early 2000s to 0.486 in 2010 (Cornia, 2014), there is no sign of declining inequality in Africa (Bigsten, 2014).

According to Table 2, the average asset[6] Gini in Africa has increased especially in the last five years. Shimeles and Nabassaga (2015) identify factors that tend to be specific to a geographic location or individual country (political economy, history, linguistic barriers, ethnicity, etc.) as key contributors (up to 40%). The fact that most African countries are landlocked and fragmented both across small national boundaries and across ethno-linguistic and colonial lines are therefore key factors to consider. Inequality of opportunities (such as labour markets interventions, particularly skill acquisitions and migration, and price distortions affecting the assets acquisition process) account for about 13%, while other factors (such as economic

Table 2: Average asset Gini coefficient in Africa and its determinants

Period	Average asset Gini Coefficient	Contributions of:		
		Spatial inequality	Inequality of opportunities	Other factors
Pre-1995	0.42	0.37	0.11	0.52
1996-2000	0.43	0.34	0.13	0.53
2001-2005	0.38	0.32	0.13	0.54
2006-2009	0.4	0.34	0.14	0.51
2010-2013	0.44	0.39	0.13	0.47

Source: Shimeles and Nabassaga (2015:15)

6 Asset inequality is more akin to wealth inequality measurement. In the absence of reliable income and consumption data, some authors use assets to proxy for welfare.

structure, FDI, dependency ratio etc., analysed in the next sections) account for the largest share (up to 47%).

Our calculations of average income/consumption Gini suggest that Africa's average Gini is also around 0.44. The noteworthy fact is the wide variation in country level inequality. The countries with the highest inequality in the region are South Africa, Botswana and Namibia (Figure 5, overleaf).

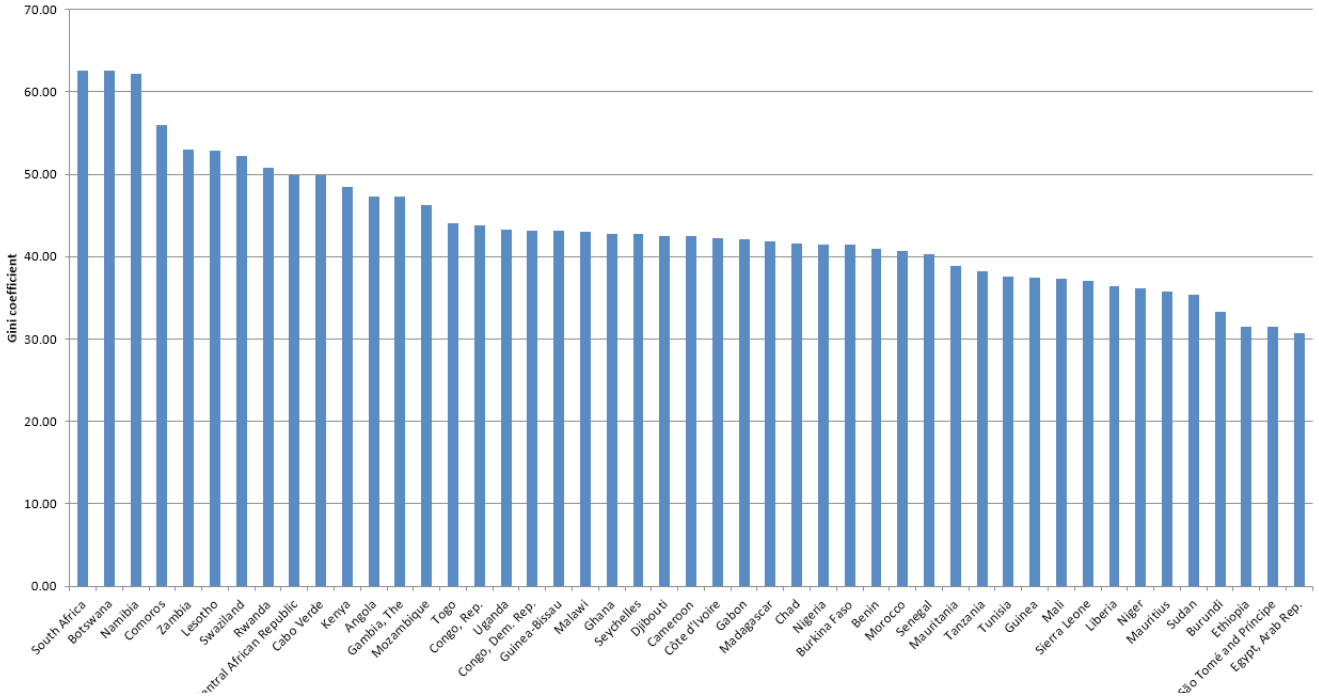
High inequality in income, heath and inequality has significantly attenuated the progress in Africa's Human Development Index (HDI). Though average HDI increased from 0.40 to 0.50 between 1990 and 2013, Africa is still well below the world average HDI of 0.70. The Inequality Adjusted HDI (IHDI) shows a loss in value of 33.6% after adjusting for inequality in income, health and educational distributions (UNDP, 2014). Gender inequality in human development is also a significant challenge as females lag behind males by 13% in the human development index (UNDP, 2014).

High-inequality countries such as South Africa, Botswana and Namibia also have the highest shares of income accruing to the richest 10% and the lowest share accruing to the poorest 10% (Figure 6, overleaf). This suggests that the SDG vision of leaving no one behind is likely to face a significant challenge in Africa due to persistently high inequality, especially in very high-inequality countries. Africa has made only slow progress in reducing poverty relative to other developing regions.

According to the *MDG Report 2015*, SSA recorded a mere 8% reduction in poverty from 1990 to 2010 (UNECA, 2015). As with the growth and inequality story, there are significant variations in specific country performances in poverty reduction. Poverty declined in 24 of the 30 countries for which data was available, ranging from a 32% reduction in the Gambia to 1% in Egypt. Poverty also increased in six of the 30 countries, from 0.4% in Central African Republic (CAR) to 28.4% in Kenya.

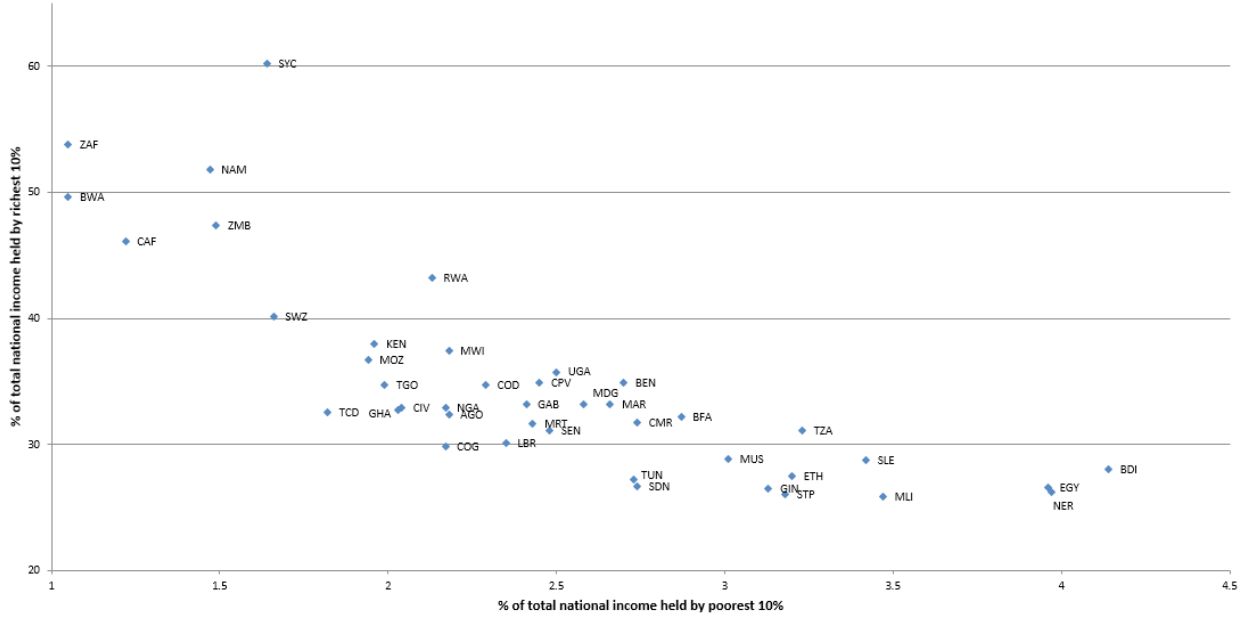
It is noticeable that most of the countries that performed dismally in terms of poverty reduction are also those with high inequality and a relatively low share of income accruing to the poorest 10%. In transitioning from the MDGs to the SDGs, the focus on growth and inequality for poverty eradication is of capital importance. The focus on inequality reduction would have two implications for poverty. First is that it will free up resources for redistribution through the markets or government social welfare systems. Second is that a small amount of redistribution will be able to bring about much stronger poverty reduction and eventual elimination (Ortiz and Cummins, 2011). However, in line with the focus on leaving no one behind, it is important to examine the impacts of different types of inequality on growth and their respective determinants in order to identify which ones are likely to jeopardise SDGs 8.1 and 10.1, and consequently 1.1.

Figure 5: Inequality (Gini) in Africa (2000-2014 average)



Source: Author's computation using data from the World Bank (2015)

Figure 6: Income shares accruing to richest and poorest 10% by country



Source: AfDB (2015), based on WDI 2014 data (World Bank 2014)

3. Methodology and approach

In order to isolate the effects of different types of inequality on economic growth on the one hand and to propose policy measures for curbing selected bad inequalities on the other, it is important to analyse two related frameworks. One is an economic growth framework in which different inequalities are key determinants of the rate of growth. The other is the framework for the determinants of inequality, where a set of factors are tested for their effects on the different inequalities. We review literature and develop relevant methods along these lines.

3.1 Brief overview of related literature

The literature regarding the impact of inequality on growth contains diverging theoretical views and the empirical evidence is inconclusive. Theoretical predictions suggest that inequality can have either positive or negative effects on growth.

Three major ways through which inequality can impact growth are through physical endowments (credit constraints), human capital endowments and political economy channels. When credit in the capital market is too costly to the poor owing to a lack of collateral, then projects with return rates below the marginal cost of capital to the poor can only be undertaken by the rich. But redistribution of wealth from the richer to the poorer individuals will reduce their need to borrow while allowing them to undertake projects with lower rates of returns. As such, redistribution will lead to higher investment and/or higher return to capital (Bourguignon, 2004). More formalised models (Galor and Zeira, 1993; Banerjee and Newman, 1993; Aghion and Bolton, 1997) put information asymmetry at the centre of credit constraints. In these models, the evolution of inequality and output is influenced by the limited choice of occupation or investment (due to credit rationing) among poor people and possibly the middle class too. When the poor are prevented from making productive investments (that would benefit them and the society), low and inequitable growth can result. Moreover, in a Keynesian economy where the marginal rate of savings increases with income, or with a higher propensity to save from returns to capital than labour, those at the top end of the distribution may represent the main source of savings (Voitchovsky, 2005).

Human capital endowment (education, skills and healthy life) is also important in the growth effect of inequality. In situations where ability is rewarded, there is incentive for more effort, risk-taking and higher productivity, resulting in higher growth but with higher income inequality. In such cases, talented individuals will tend to seize higher returns to their skills. The resulting concentration of talents and skills in the advanced technology upper-income sector becomes conducive to further innovation and growth (Hassler and Mora, 2000). Such incentives can induce greater effort in all parts of the distribution (Voitchovsky, 2005). However, frustration at the lower end of the distribution resulting from perceived unfairness (Akerlof and Yellen, 1990) may counteract the innovation gains.

A political economy approach would suggest that high inequality sets the stage for the adoption of distortionary policies which adversely affect investment and generate political instability, thereby stifling growth (Persson and Tabellini, 1994). Alesina and Perotti (1996) have equally argued that higher political instability can result from high inequality, with the resulting uncertainty then reducing investment levels. Rodrik (1996) has confirmed that divided societies with weak institutions also witnessed the sharpest fall in post-1975 growth. This situation brought about a weakness in their capacity to respond effectively to external shocks.

Empirically, various authors have found a negative impact of initial inequality on growth in developed countries (Persson and Tabelini, 1994), developing countries (Clarke, 1995) and a combination of both (Deininger and Squire, 1996). Schwambish et al. (2003) find that top end inequality (measured by 90/50 percentile ratio) strongly and negatively impacts social expenditures, while the bottom end (captured by 50/10 percentile) shows a small positive effect. They suggest that high top-end inequality reduces social solidarity, with the rich trying to pull out of publicly funded programmes such as health care and education, in preference to private provision. A neat survey of theoretical and empirical literature has been presented by Cingano (2014) and Ngepah (2015) on the effects of inequality on growth. Using a systems Generalised Methods of Moments (GMM) estimator, Voitchovsky (2005) finds insignificant impact of aggregate inequality on growth (with significant positive effect of top-end inequalities and negative effect of bottom-end inequalities on growth) for a sample of 21 developed countries. Castello (2010) finds a significant negative impact of the Gini coefficient on growth for a mixed sample of rich and poor countries. Castello's findings, however, show a negative impact for poor countries and a positive one for rich countries. Most recently, Halter et al. (2014) found a positive impact of Gini coefficient on growth for a sample of 90 (mostly developed) countries, with a positive effect for rich and negative effect for poor countries. Apparently, the nature and strength of the impact of average inequality on growth depends on the level of development of the countries included in the sample.

Turning to the determinants of inequality, Cornia (2014) identifies a number of factors that theoretically explain inequality in Latin America. He first deconstructs household net disposable income into six income shares, which are more or less exhaustive. These are labour income, human capital income, land and mining rent, capital income, net transfers (pensions, unemployment subsidies, child allowance, cash transfers and other targeted subsidies) and remittances income. Inequality in the distribution of household income (Gini) is then expressed as a weighted average of the concentration of the distribution of the six income sources.

As such, changes in inequality would be primarily accounted for by changes in the distributions of incomes within and across these income sources, as follows:

$$\Delta G = \sum \Delta sh_i C_{it} + \sum \Delta C_i sh_{it} + \sum \Delta C_i \sum \Delta sh_i \quad (1)$$

Therefore, variation (Δ) in inequality (G) is a function of changes in the after-tax shares of the different income sources (sh_{it}) and changes in the concentrations index (C) of the respective income sources (i).

The factors that are postulated by Cornia (2014) to affect changes in income shares are:

- Relative remuneration of production factors, due mainly to the skills premium as a result of the human capital distribution in the economy, exchange rate policies, and capital inflows that may shift production between high skill/capital-intensive non-traded and unskilled labour-intensive traded sectors
- Changes in the volume of remittances
- Changes in unskilled wages relative to capital returns due to changes in interest rates and returns on capital
- Changes in activity rates, especially among unskilled workers due to fast economic growth, labour market policies and occupational choices
- Changes in transfers received or taxes paid by households as a result of changes in fiscal policies.

Possible factors that can influence the concentration coefficient of each income source can be:

- Changes in social policies affecting the incidence of social transfers
- Changes in the household distribution of production factors
- Changes in the tax volume or incidence, due to fiscal policy
- Changes in the activity rate.

Various external and domestic factors can interact to determine inequality. First, although gains in terms of trade would normally be expected to be equalising, the concentration of natural assets like lands and mines particularly by multinationals tends to make terms of trade dis-equalising. The second factor is migrant remittances. Theory suggests (at least for Latin America) that because only the middle class can finance the high cost of migration, remittances do not reduce inequality in the short to medium term. The third is the inflow of foreign capital, which may rather benefit large capital and skill-intensive firms, while small and medium enterprises (SMEs) may be left with no formal access to bank finance, contributing to enhancing inequality.

Among domestic factors, the key factor is a decline in dependency ratio, which can result in an increased supply of labour at low wages and high domestic demand. Of all the domestic factors, the spread of human capital (share of people with no education and primary education relative to those with secondary and tertiary education) is critical. Governance is also a possible factor as a social democratic dummy has inequality-reducing effects in Latin America (Cornia, 2014). These are some of the key variables we will consider in the analysis of determinants of inequality.

3.2 Models

To model the impact of inequality on growth, we use a growth model for panel data following Voitchovsky (2005). Specifically, the five-year growth model is based on the following form:

$$y_{it} - y_{it-1} = \alpha_1 y_{it-1} + \alpha_2 G_{it} + \omega' X_{it} + u_{it}\ , \quad (2)$$

where y is GDP per capita, t and $t-1$ are time periods corresponding to observations that are five years apart, X is a vector of control variables, i is a country index, w' is a vector of coefficients, G is a measure of inequality, a are coefficients and u_{it} is a composite term including an unobserved country-specific effect, time-specific effect and an error term.

According to (Barro, 2000), the neoclassical model underlying equation (2) explains a long-term steady-state level of income. As such, an enduring change in inequality (and other determinants of growth) will affect growth rates only in the short run – that is, while the economy is still on the path of convergence to a new equilibrium. Because economies generally take a long time to reach a new steady state following a change in any of the determinants, the short-term inequality effect on growth can in fact last a good while.

All the variables in the growth model are five-year averages. Although the specification of Cornia (2014) in the inequality determinant function is a good basis for consideration of our variables, we opt for a similar estimation technique to the growth model due mainly to limited sample size. Cornia (2014) uses a dataset of 18 Latin American countries consisting of 292 observations. Our dataset, though covering 44 African countries, comprises only 128 observations, due to limited time dimensions and the fact that we take a five-year average to be consistent with previous work (Voitchovsky, 2005) and to obtain a more balanced panel.

3.3 Variables and data

Income and income growth: Our measure of growth rate (y_{it}–y_{it-1}) is the growth in real per capita GDP taken from the World Development indicators (WDI) database of the World Bank (2015).

Inequality measures: we consider various indicators of inequality included in the WDI dataset. The dataset also presents distributional data grouped in quintiles (*Q1* to *Q5*). We therefore consider a division of the distribution into the poor (*Q1*), the middle class (*Q3*) and the rich (*Q5*). We look at inequality within and between these three groups in the income distribution spectrum. We also consider an index of inequality between the middle class and the poor, as *Q3/Q1*. Our measure of inequality among the poor is *Q2/Q1*. We also consider inequality amongst the middle class as *Q4/Q3*. Next, we look at inequality amongst the rich and consider *Q5/Q4*. Inequality between the rich and the middle class is captured by *Q5/Q3*. Finally, extreme inequality is captured by *Q5/Q1*.

For *gender inequality*, we used the ratio of male-female labour force participation rate to proxy for gender inequality in the labour market. These are sourced from WDI statistics.

Other control variables: Apart from the lagged income variable in the model in (1), a number of other control variables were introduced including investments, human capital, labour market conditions, fiscal policy, governance and a number of external conditions (see appendix for other variables).

The investment variable is measured by the average share of gross fixed capital formation in GDP. It is the five-year average from the year of inequality measure observed. The data is from the WDI database.

Human capital variables, generally measured in terms of education, have two possible candidates. The first is the use of enrolment ratios and average years of schooling in the population. Both are obtained from the computations of Barro and Lee (2000). We opt instead to use lower secondary school completion rates. This measure is the one that has the most number of year-on-year observations to be able to match the inequality data and to allow for five-year averaging in this work.

Determinants of inequality variables: for the list of determinants, we use the same factors suggested by the theoretical model in Cornia (2014) for which data is available, and also add some factors that may be more relevant for the African continent. We group the variables into internal and external factors. Among the internal factors, we look at the structure of the economy, captured by growth of value added in the different sectors of the economy. Second is government social spending. In the absence of data on all social spending, we only consider educational and health spending. Health spending had a lot of missing values for a number of countries, and therefore we do not pay much attention to its coefficient. We focus instead on the coefficient of educational spending. Next, we consider human capital distribution, which is the ratio of people with primary and no education to those with secondary and tertiary schooling. We also took into account the impact of natural resource rents (share of natural resources in GDP), which captures resource dependence. Rate of urbanisation can be a driver of inequality as shown in Behrens and Robert-Nicoud (2014). Besides the production dynamism in city growth, when rural unskilled and less educated farm-workers migrate to the urban areas, they end up poorer, occupying the urban slums and hence exacerbating inequality. For this reason, we considered urbanisation as a determinant too. Lastly, we looked at an element of governance, captured by whether a country is an institutional democracy or autocracy. For a detailed description of variables and the sources of data, see Table 10 of appendix.

3.4 Estimation technique

In estimating the impact of inequality on growth, we use the Generalised Method of Moments (GMM) approach.[7] There are two variants of the GMM estimator. One is the first difference GMM of Arellano and Bond (1991), which operates by taking the first difference of all the variables in the model and then uses lag values of the right-hand side variables to control for endogeneity. This approach is suitable in dealing with two common problems in econometrics: omitted variables and endogeneity biases. However, differencing creates another problem in that it takes away much of the information in the data that is due to cross-sectional variations. Given that the data we used here spans 44 countries with a maximum of four time periods after taking five-year averages, much of the variation in the data is therefore spatial. Added to the high contribution of spatial inequality to overall inequality in Africa (Table 2), the simple first difference GMM will yield imprecise estimates and therefore not be the best option here.

The other variant of GMM is the systems GMM. It combines the first difference GMM estimator with a set of level (non-difference) equations to bring back the missing cross-sectional information in the former, and uses the lag first difference of variables in the right-hand side of the equation as instruments (Arellano and Bover, 1995). The systems GMM has been used in most recent studies examining the impact of inequality on growth (Cingano, 2014; Halter et al., 2014 and Ostry et al., 2014), and is likewise used here. In order to ensure that we are indeed

7 Applying the standard Least Square Dummy Variable (LSDV) approach in estimating growth models yields biased estimates, especially of inequality coefficients. The bias comes from the fact that the estimation of growth models requires first differencing of income or GDP. This differencing creates a correlation between the lag values of GDP and the error term. Since the LSDV estimation makes use of individual country fix effects, and these are correlated with the lag GDP, the model yields biased estimates of our coefficients of interest.

dealing with causality, we have taken inequality at the beginning of the five-year period, while we take five-year averages of GDP indicators.

We also use the systems GMM to estimate the inequality models. Due to a limited number of observations (128),[8] the many possible determinants of inequality are not all introduced in a single equation for each inequality measure. Consequently, for each measure, we estimate four models. The first two models alternatively use government expenditures on education and human capital distribution, respectively. We made this separation because in a five-year average dataset, government expenditures on education are likely to strongly affect human capital spread. The third model introduces the growth in value added of the different sectors of the economy, in place of GDP growth. Finally, for each inequality measure we introduce external conditions, while keeping only growth in the models. In doing this, we try to introduce all internal factors in the same model and external factors in their own model to ensure that the respective variables are comparable. The two sub-models for internal and external factors also have the main variables (the key variable in inequality is growth or GDP, either sector-wise or average GDP) so as not to lend the models to omitted variables bias. We also attempted to estimate the models using the LSDV approach as used in Cornia (2014). Clearly, the LSDV approach did not perform satisfactorily, due perhaps to limited sample size and to the fact that the LSDV approach introduces fix effects for each country. This would naturally require a reasonably large sample size.

8 Introducing many right-hand side variables in an equation for small sample data will result in reduced degrees of freedom to manoeuvre the data, and consequently, imprecise estimates.

4. Research findings

We begin our research findings with some exploratory statistics, before following with more sophisticated econometrics.

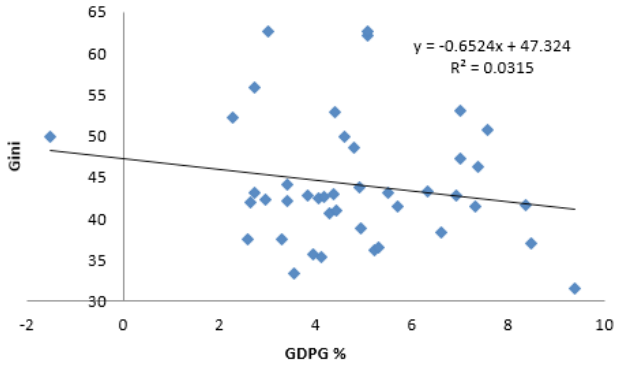
4.1 Exploratory analyses

Inequality and economic growth are negatively related to one another (Figure 7). Very high-growth countries like Ethiopia, Sierra Leone, Chad, Nigeria and Tanzania are clustered on the low-inequality quadrant, while countries with medium to high inequality like South Africa, Swaziland and Central African Republic also have negative, low to medium growth rates.

The Gini coefficient correlates negatively with GDP growth, and with the growth of value added in agriculture and services (Table 3). From Table 1 we observed that the services sector is dominant in Africa's economies, and its share has been increasing. This is also the sector that absorbs medium-skill workers. One of the factors that contribute to inequality is human capital distribution. The more medium-to-high-skilled people are employed in an economy relative to low-skilled individuals, the higher the level of inequality. Hence it may not be surprising that it correlates negatively, though not significantly, with all the measures of inequality except gender inequality. Inequality measures at the lower tail of the distribution spectrum correlate negatively with growth, but only inequality among the poor is (very weakly) significant.

Although most of the correlation coefficients are not significant, the signs show that inequality at the higher end of the distribution (Q3 to Q5) is associated positively with economic growth. Growth in agricultural value

Figure 7: Growth-inequality scatter



Source: Author's computation using data from the World Bank (2015)

Table 3: Pair-wise correlation inequality measures with growth and natural resource rents

	Growth						Natural resource share of GDP
Inequality type	GDP	GDP per capita	Agriculture	Manufacturing	Industry	Services	
Average (Gini)	-0.019	0.033	-0.044	0.055	0.005	-0.049	0.250**
Within poor (Q2/Q1)	-0.158*	-0.130	-0.062	0.088	0.024	-0.149	0.047
Within middle class (Q4/Q3)	-0.079	-0.039	-0.059	0.028	-0.046	-0.109	-0.206**
Within rich (Q5/Q4)	0.041	0.091	-0.017	0.032	0.006	-0.013	-0.276***
Between rich and poor (Q5/Q1)	-0.051	-0.014	-0.030	0.056	-0.004	-0.109	0.203**
Poor and middle class (Q3/Q1)	-0.146	-0.114	-0.085	0.079	0.010	-0.153	0.032
Middle class and rich (Q5/Q3)	0.008	0.051	-0.010	0.029	-0.016	-0.049	-0.260**
Gender	-0.117	0.008	-0.082	0.220**	0.147	0.064	0.028

*Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively*

added correlates negatively with gender inequality, but not significantly. This may be driven by the fact that most African female workers are absorbed along the agricultural value chain. The manufacturing sector correlates negatively and significantly with gender inequality, suggesting that labour force participation in the manufacturing sector may be biased against female workers. Natural resource rents tend to positively associate with average and lower end inequality, possibly suggesting that resource rents accrue to the richer segments of the society.

The significant correlates of different inequality measures are the human capital distribution, government spending on education and health, urbanisation, the dependency rate, remittances and exchange rates (Table 4). The human capital distribution[9] associates positively and significantly with all inequality measures except gender inequality. It correlates negatively with gender inequality, though not significantly. Government expenditures on education and health also correlate positively with all inequality measures except gender. This may point to the possible existence of other factors such as societal norms, limiting female access to these benefits. Government educational expenditure is negatively associated with gender inequality, though the relationship is only weakly significant. This may mean that government educational spending has some impact in encouraging female labour force participation. Urbanisation and the dependency ratio seem to be the strongest in terms of positive association with gender inequality, due perhaps to the high wealth gradient that places more dependency burden on the women and the poor (Bloom et al. 2012). They also relate positively, though relatively weakly, with all measures along the distribution spectrum, though the relationships are not statistically significant except in the case of the correlation between the dependency ratio and inequality between the rich and the poor. Being an institutional democracy is consistently associated with less inequality, whereas institutional autocracy associates with inequality positively, but both associations are not statistically significant. Remittances have significant positive association with average inequality, inequality between rich and poor, and inequality between the middle class and the poor. This is possibly due to the fact that migrant-sending households are those that can afford the cost of migration and hence the poor may not really benefit from remittances (Cornia, 2014).

Table 4: Correlation inequality measures with possible determinants

	Gini	Q5/Q1	Q3/Q1	Q5/Q3	Q2/Q1	Q4/Q3	Q5/Q4	Gender
Human capital distribution	0.393***	0.436***	0.271**	0.472***	0.137	0.511***	0.425***	-0.108
Public expenditure on education	0.228**	0.280**	0.246**	0.245**	0.212	0.262**	0.210*	-0.192*
Public expenditure on health	0.333**	0.350***	0.185	0.361***	0.109*	0.312**	0.348***	0.113
Dependency rate	0.029	0.061*	0.052	0.109	0.114	-0.128	-0.074	0.498***
FDI	0.080	0.049	0.076	0.050	0.078	0.058	0.054	-0.082
POLITY	0.120	0.114	-0.002	0.154	-0.055	0.116	0.161*	0.137
Institutional Autocracy	0.067	0.072	-0.022	0.101	-0.066	0.065	0.108	0.058
Institutional democracy	-0.061	-0.041	-0.075	-0.036	-0.086	-0.071	-0.025	-0.081
Remittances	0.203*	0.273**	0.463***	0.119	0.459	0.257	0.081	-0.016
REER	-0.160	-0.116	-0.094	-0.145	0.067***	-0.135**	-0.156	0.149
Terms of Trade	0.023	0.034	0.120	-0.015	0.091	0.111	-0.058	-0.165
Urbanisation	0.087	0.050	0.046	0.081	0.019	0.142	0.057	0.528***

*Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively*

9 Measures as the ratio of population with primary schooling and no education to population with secondary education and higher.

Table 5: Two-stage systems GMM estimates

	Gini	Gini and between	Gini and within	Gini and all spectrum	Gini and gender
	1	2	3	4	6
Lagged GDP per capita	-0.198*** (0.002)	-0.118*** (0.004)	-0.216*** (0.050)	-0.266*** (0.064)	-0.157** (0.073)
Investment	0.978*** (0.078)	0.954*** (0.025)	0.921*** (0.045)	0.948*** (0.061)	0.704*** (0.088)
Human capital	0.721** (0.189)	0.664*** (0.016)	0.654*** (0.024)	0.518*** (0.044)	0.640*** (0.038)
Gini	-0.911*** (0.035)	-0.743*** (0.066)	-0.676** (0.111)	-0.476** (0.080)	-0.337* (0.183)
Between rich and poor (Q5/Q1)		-0.998*** (0.007)		-0.795*** (0.084)	
Poor and middle class (Q3/Q1)		-0.375** (0.101)		-0.789** (0.267)	
Middle class and rich (Q5/Q3)		0.864*** (0.088)		0.754*** (0.049)	
Within-bottom (Q2/Q1)			-0.557** (0.094)	-0.462*** (0.044)	
Within-middle (Q4/Q3)			-0.225** (0.019)	-0.343** (0.101)	
Within-top (Q5/Q4)			0.856*** (0.031)	0.392*** (0.035)	
Gender					-0.823*** (0.074)
Gender square					0.563*** (0.091)
Constant					
p-value (joint inequality)	0.0000	0.0000	0.0000	0.0000	0.0000
p-value (Sargan)	0.3395	0.3257	0.3004	0.2916	0.5444

*Note: the dependent variable is five-year average of GDP per capita growth. All regressions include country and period dummies. Sargan denote p-values of Sargan test for over identifying restrictions. *, **, *** denote significance at 10%, 5% and 1% levels respectively; standard errors in parentheses.*

4.2 Regression results

In sub-section 4.2.1 we report the results of the models, assessing the impacts of inequality on growth. Based on these, we select those with negative impacts on growth and analyse their determinants in sub-section 4.2.2.

4.2.1 Estimations of the impacts of different inequalities on growth

The sample of the dataset from which the estimation was carried covers 44 African countries with at least two consecutive five-year average observations each, to be able to allow for dynamic panel analyses. Our sample consists of 128 observations of five-year averages between 1980 and 2012. Cingano (2014) and Voitchovsky (2005) use 127 and 81 observations respectively in a similar econometric framework for OECD countries.

The empirical results reported in Table 5 are obtained by way of a two-stage systems GMM. The Sargan test for over-identifying restrictions did not conclude that our instruments were valid for the one-step GMM but confirms validity for two-stage GMM (see Sargan's P-values). A Wald test for joint significance of the inequality measures show that all the inequality measures are jointly significant at 1% for all the models. We estimated six models. Model one is Gini only. Model two divides the distribution into three (bottom, middle and top) and considers inequality between the three groups as defined in the description of variables plus Gini coefficient. Given that all the other measures of inequality are only within or between parts

of the distribution spectrum, and therefore do not cover the entire spectrum, it becomes important to keep the Gini (average measure covering the entire distribution) in subsequent models. Model three considers inequality within the three groups plus Gini. Model four estimates the entire spectrum using both the within, between and Gini coefficients. Model five gives the estimates of gender inequality. We also introduce the square of the gender inequality measure and show that there is a non-linear effect in the way gender inequality affects growth.

The control variables (investment and human capital) have the expected positive signs and are all significant across all the models. The Gini coefficient has a significantly negative effect on growth across all the models. Estimates in model one suggest that a one Gini point reduction in average inequality will increase growth by up to 0.9 percentage points over the next five years or about 0.2 percentage points per year. Considering model four, average inequality, inequality between the bottom and the top segments, inequality between the bottom and the middle segments, and inequality within the bottom and the top segments of the distribution all reduce economic growth. Inequality between the top and the middle, and within the top segments of the distribution significantly enhance growth. These growth-enhancing inequalities are what we term *good inequalities* in this work.

A one-point reduction in extreme inequality (between the rich and the poor) would increase growth within the next five years by 0.8 percentage points, or 0.12 percentage points per year. A one-point reduction in inequality among the poor would translate into a 0.5 percentage point increase in the next five-year average growth. The same reduction in inequality among the middle-income earners would enhance growth by 0.34 percentage points. The advantages that males have over females in labour market participation significantly reduce growth, and a one-point reduction in this inequality leads to 0.8% increase in growth.

Policy efforts that target the reduction of all the bad types of inequality (those that have a negative impact on growth) by one point each would enhance growth by up to three percentage point in the next five years, translating to about a 0.6 percentage point increase in growth per annum. If policy efforts were to target these inequalities in a way that would lead to a one-point reduction in each type of inequality immediately, within the 1000 days of the SDGs, Africa would achieve on average an extra 1.58 percentage points in economic growth. This would also translate into stronger poverty reduction than before, given lower inequality.

However, the major question is what kinds of policies should be implemented to achieve the reductions in the *bad* types of inequality. Given data challenges for African countries (mainly relating to limited time dimensions, limited country coverage and gaps in the data) we could not examine all possible key policies, however we consider a few important factors as far as the data allow. Over and above the variables from the work of Cornia (2014) for which we had some data (see Table 10 in appendix), we also consider the effects of sectoral growth, urbanisation and natural resource rents on these inequalities. In place of social spending for which we lack adequate data, we use government educational and health expenditures.

4.2.2 Estimating the determinants of bad inequalities

The models we estimated in search of the determinants of inequality also relied on the same dataset as in models analysing the inequality impacts of growth. The data has 128 observations of five-year averages in 44 countries. The results are divided into average inequality (Gini), between rich and poor (the ratio of income shares of quintile 5 to that of quintile 1) and are reported in Table 6. The next results in Table 7 are for inequality between the middle and the bottom segments of the distribution (the ratio of quintile 3 and 1), and inequality within the bottom of the distribution (ratio of quintile 2 and 1). Finally, Table 8 reports inequality within the middle segment of the distribution (ratio of quintiles 4 and 3) and gender inequality (the ratio of male to female labour force participation).

Each inequality type consists of four sub-models. Sub-models (1) and (2) focus on GDP growth and key internal factors (the dependency ratio, government educational expenditure, human capital distribution, urbanisation, natural resource rents and a governance indicator). Sub-model (3) focuses on the role of economic structure and economic growth in different sectors while sub-model (4) pays attention to external factors as possible inequality determinants. The results are interpreted following the different inequality types in the respective tables.

Average inequality

The estimations of the models of average inequality suggest that the lag values of Gini contribute to about 0.4 points in lowering average inequality for the period. After controlling for the main determinants, GDP growth significantly tends to reduce inequality over time. The major factor contributing to rising average inequality in Africa is human capital distribution as measured by the ratio of people with primary education and lower to those with secondary education and above. This variable suggests that the distribution of educational human capital accounts for up to 12 points in the Gini over the five-year period, or about 2.5 points per year. Government expenditure in education appears to lower average inequality, with 1% extra spending of GDP in education reducing the Gini by 2 points.

The dependency rate also contributes to fuelling average inequality. An increase of a 1% share of dependants in the population is associated with an increase in the Gini of 0.2 points. However, when we control for educational spending, the coefficients of growth and the dependency ratio both become insignificant. This suggests two things.

Table 6: Two-stage systems GMM estimates for average inequality and between top and bottom

	Gini				Between top-bottom			
	1	2	3	4	1	2	3	4
Lagged Inequality	-0.332*** (0.057)	-0.352*** (0.112)	-0.443*** (0.093)	-0.224 (0.237)	-0.360*** (0.054)	-0.284*** (0.080)	-0.437*** (0.076)	-0.444 (0.986)
Value added in agriculture			-0.011 (0.072)				-0.177** (0.106)	
Value added in industry			0.066 (0.070)				0.180 (0.236)	
Value added in manufacturing			-0.243** (0.104)				-0.254* (0.139)	
Value added in Services			-0.179 (0.111)				-0.254*** (0.047)	
GDP growth	-0.437*** (0.146)	-0.532 (0.390)		-2.597... (0.906)	-0.234*** (0.073)	-0.109 (0.097)		-1.463*** (0.369)
Dependency rate	0.274*** (0.071)	0.046 (0.124)	0.111** (0.063)		0.163*** (0.032)	0.008 (0.078)	0.064* (0.034)	
Government educational spending		-2.217** (1.089)				-0.784** (0.280)		
Gov. health spending	1.617 (1.047)	0.592 (0.672)			0.318 (0.563)			
Human capital distribution	14.305*** (1.340)		11.914*** (3.091)		9.888*** (1.344)		8.686* (4.395)	
Share of urban population	0.176 (0.170)	0.368* (0.223)			0.222* (0.120)	0.276** (0.101)		
Natural resource rent	0.125*** (0.025)	0.113** (0.043)			0.069*** (0.020)	0.025 (0.025)	-0.089 (0.111)	
Institutionalised democracy	-0.002 (0.031)	-0.001 (0.040)			-0.026** (0.013)	-0.053*** (0.013)	-0.086* (0.054)	
Foreign direct investment				4.800*** (1.508)				1.614** (0.612)
Remittances				-0.107 (0.210)				-0.103 (0.350)
Terms of rrade				0.216** (0.090)				0.239* (0.124)
Real effective exchange rates				0.097*** (0.030)				0.067 (0.059)
Constant	23.019*** (8.035)	50.690** (19.610)	53.647... (10.627)	22.351 (16.944)	-11.255** (5.019)	5.821 (9.761)	10.009*** (3.197)	-22.674 (20.302)
p-value Sargan	0.2510	0.2194	0.3477	0.9867	0.2467	0.2512	0.4418	0.9931

*Note: the dependent variable is five-year average of inequality within the respective inequality category. All regressions include country and period dummies. Sargan denote p-values of Sargan test for over identifying restrictions. *, **, *** denote significance at 10%, 5% and 1% levels respectively; standard errors in parentheses.*

First, the major source of resources for government spending on education (and other social spending not controlled for) is GDP growth.

Second, government educational spending may target most dependants, perhaps through subsidised education. This finding is consistent with the progress Africa has made on MDG2 relating to universal primary education. UNECA (2015) reports that between 2000 and 2012, the average amount of resources allocated to education increased from 4.2% to 4.9%. Besides GDP resources, more development assistance to education could reduce inequality significantly. However, in line with the MDG, most governments have focused on primary education. The resulting significant gains in primary enrolment rates have also been marked by very low completion rates. Only 67% of children enrolled in the first grade reach the last grade in Africa (UNECA, 2015). Given the contribution of the educational human capital distribution, actions need to be focused on getting many more people through secondary and tertiary education. Other internal factors that raise average inequality are urbanisation and natural resource rents. A percentage point increase in the share of urban population raises the Gini by 0.37 points. A percentage point increase in the share of natural resources in GDP raises the Gini by 0.13 points. On the external front, FDI, terms of trade and real effective exchange rate are all contributing to raising Gini in Africa. FDI contribution is the strongest, with a percentage point increase in the five-year average stock of FDI in GDP increasing Gini by 4.8 points over the five-year period. The African Development Bank (AfDB, 2015) projects that private external financial flows will play a major role in financing the post-2015 Development Agenda in Africa. Africa's share of global FDI now stands at 5.7%. However, while FDI has traditionally been attracted by the extractive sector, it is now increasingly shifting to consumer-oriented industries (IMF, 2014). This is also congruent with the increasing share of services in Africa's economic structure. FDI therefore flows to more skills- and capital-intensive sectors that may contribute to raising the skills premium and therefore significantly increasing inequality. If policy efforts cannot attract FDI in labour-intensive sectors like agriculture, they can partly focus on preparing the poor to participate more in the sectors that attract FDI by addressing the human capital spread, with the support and consequent supply of medium- to higher-skill workers in order to reduce skills premium, and also spread educational human capital more evenly across the economy.

Equally, improving the terms of trade, especially following the commodity price boom of the last decade, has rather been disequalising. A similar situation is observed with real effective exchange rates. The inference is that all the factors that facilitate the flow of external resources into Africa (except for remittances, which have a negative but insignificant effect on inequality) also contribute in raising inequality. This is primarily due to the fact that external resources like FDI go to sectors that do not benefit those at the bottom of the distribution. Dealing with this requires policy to take measures to incentivise external resource flows into low-skill labour-intensive sectors and/or to improve skills to move labour to skill-intensive sectors of the economy.

Inequality between the top and the bottom segments

The lag values of extreme inequality also contribute to inequality reduction. The result of the values for the five-year period is about 0.4 percentage points lower extreme inequality. GDP growth also significantly tends to reduce this kind of inequality over time. The human capital distribution remains the key factor behind high extreme inequality, accounting for up to 10 points over the five-year period, or about 2 points per year. Government expenditure in education also remains a significant inequality-reducing agent, with 1% extra spending of GDP in education reducing the gap between the top and bottom segments of income distribution by 0.78 points.

The dependency rate contributes to 0.16 points higher extreme inequality in the five-year period. However, as with the Gini, when we control for educational spending, both coefficients of growth and the dependency ratio become insignificant. The arguments about government expenditures on education in the case of Gini coefficients also apply here.

Urbanisation and natural resources help fuel extreme inequality. Growth of value added in services, manufacturing and agriculture all contribute in curbing extreme inequality, by 0.25, 0.25 and 0.18 points, respectively. This suggests that efforts to improve the distribution of human capital should be accompanied by economic structural changes that give weight to high-value manufacturing sectors with linkages to agriculture and services.

An additional internal factor that contributes is institutionalised democracy. This variable measures the extent of the presence of institutions that facilitate the expression of preferences of citizens, of constraints to the exercise of executive power, and of guaranteed civil liberties. It is measured on a scale of 0 to 10 points and a 1-point improvement reduces the gap between the top and bottom segments of the distribution by 0.05 points.

FDI and terms of trade contribute significantly in raising extreme inequality in Africa. A percentage point increase in the five-year average stock of FDI in GDP increases extreme inequality by 1.6 points over the five-year period. Equally, improvements in Africa's terms of trade have enhanced extreme inequality, contributing by 0.24 points. Remittances have the potential to reduce extreme inequality, but not significantly.

Table 7: Two-stage systems GMM estimates for between middle and bottom, and within bottom

	Between middle-bottom				Within bottom			
	1	2	3	4	1	2	3	4
Lagged inequality	-0.258*** (0.079)	-0.143** (0.063)	-0.375*** (0.046)	-0.370** (0.080)	-0.164 (0.159)	-0.170 (0.159)	-0.491*** (0.040)	0.613 (0.565)
Value added in agriculture			0.010 (0.007)				0.004 (0.003)	
Value added in industry			-0.029*** (0.009)				-0.023*** (0.0020	
Value added in manufacturing			0.002 (0.0050				0.008*** (0.001)	
Value added in Services			-0.038*** (0.009)				-0.022*** (0.003)	
GDP growth	-0.041** (0.016)	-0.025** (0.011)		-0.022 (0.021)	-0.018*** (0.006)	-0.009 (0.009)		-0.023* (0.012)
Dependency rate	0.011** (0.007)	0.002 (0.005)	0.001 (0.003)		0.003 (0.003)	0.001 (0.004)	0.000 (0.001)	
Government educational spending		-0.089*** (0.025)				-0.029 (0.026)		
Gov. health spending	-0.022 (0.057)					0.002 (0.021)		
Human capital distribution	-0.416 (0.386)		-0.653*** (0.111)		-0.398** (0.146)		-0.361*** (0.022)	
Share of urban population	0.032 (0.019)	0.010 (0.009)			0.011* (0.007)	0.003 (0.006)		
Natural resource rent	0.008** (0.003)	0.005*** (0.002)	0.008* (0.005)		0.004*** (0.001)	0.002 (0.001)	0.005*** (0.001)	
Institutionalised democracy	-0.001 (0.002)	-0.003** (0.0010	-0.002 (0.449)		-0.002*** (0.001)	-0.002*** (0.001)	-0.001 (0.001)	
Foreign direct investment				0.034 (0.0760				0.053 (0.033)
Remittances				0.043*** (0.011)				0.008* (0.005)
Terms of trade				0.000 (0.001)				0.001 (0.002)
Real effective exchange rates				0.002 (0.002)				0.001 (0.001)
Constant	1.300 (1.016)	2.884*** (0.620)	3.765*** (0.487)	2.688*** (0.445)	1.504*** (0.444)	1.940*** (0.617)	2.881*** (o.157)	0.235 (1.107)
p-value Sargan	0.1417	0.9690	0.5886	0.8749	0.4847	0.5908	0.5661	0.9970

*Note: the dependent variable is five-year average of inequality within the respective inequality category. All regressions include country and period dummies. Sargan denote p-values of Sargan test for over identifying restrictions. *, **, *** denote significance at 10%, 5% and 1% levels respectively; standard errors in parentheses.*

Inequality between the bottom and middle segments

The lag values remain a significant contributor to reducing future inequality in the bottom-middle segment, accounting for about 0.3 points. GDP growth reduces the gap between the poor and the middle class. Here, the sign of the coefficient of human capital distribution reverses such that unequal distribution of educational human capital tends to reduce the inequality between the bottom and middle segments of the income distribution. This could be explained by the possible special relationship that may exist between the poor and the middle class. In developing countries, the middle class is the driver of small and medium enterprises, new patterns of demand and effective reforms. They are therefore also likely to be the greatest employers of the poor (Ngepah, 2015). As such, a higher proportion of people with primary and no education might mean more labour for middle-class investment and small and medium-size enterprises.

Government expenditure in education nonetheless remains a significant agent in reducing inequality in this category. The dependency rate contributes to 0.01 points higher inequality in the five-year period. Natural resource rents also weakly enhance inequality, while institutionalised democracy weakly reduces this type of inequality. The growth of value added in services and industry contributes in curbing extreme inequality, by 0.038 and 0.029 points respectively.

Among the external factors, only remittances play a significant role, and it is to enhance inequality. An increase by a percentage point in the share of remittances in GDP increases the gap between the poor and the middle class by 0.043 points. Cornia (2014) suggests that only the middle class are able to finance the high cost of migration, hence the flow of remittances accrue to middle-income groups. This seems to be the case also in African countries as the inequality-reducing effects of remittances are not significant in models of within-bottom segments and the gap between the rich and the poor.

Within-middle and bottom segments of the distribution

Apart from the lag values of inequality and the coefficients of growth, the magnitudes of the determinants of inequality within the middle and poor segments of income distribution are weak. Lag values of inequality tends to reduce current five-year average inequality by about 0.6 for within-middle-class inequality and 0.5 for within-poor inequality. The human capital distribution tends to reduce inequality within the poor, but enhances inequality within middle class. A point increase in the ratio of those with primary-to-no education relative to those with secondary-to-tertiary education would reduce inequality among the poor by 0.4 points, and increase inequality among the middle class by 0.3 points. Other factors that weakly enhance within-poor inequality are natural resource rents, and urbanisation. Institutional democracy and growth in industry and services tend to reduce inequality within poor. Growth in agricultural value added enhances middle-class inequality while manufacturing and services sectors reduce it, but the magnitudes of the coefficients are very close to zero. Urbanisation and institutional democracy have weak inequality-enhancing effects among the middle class. No external factor significantly affects inequality within poor. Remittances tend to play an equalising role among the middle class, a role that is consistent with the fact that the middle class are the main beneficiary of remittances.

Gender inequality

Gender inequality here is measured as the gap between male and female labour force participation. The lag values of gender inequality tend to strongly and significantly reinforce current inequality. One point of higher inequality in the current five-year period would translate into 1.09 more gender inequality in the next five years. This may suggest a strong culture of gender discrimination in the labour market in African societies, suggesting more advocacy around gender inequality.

The channel of transmission seems to be human capital distribution and the dependency ratio. In models with lagged values of gender inequality, the dependency rate is weak and hardly significant, while human capital distribution shows a significant and negative effect. When we estimate models without lag values of gender inequality, the coefficients of dependency rate become stronger and more significantly positive, and the coefficients of human capital distribution also become strongly positive. It can therefore be said that a high dependency rate places a higher burden on women, which in turn affects their labour force participation. The results of human capital distribution may suggest that high inequality in human capital may favour males and hence lead to less participation of females in the labour market relative to males.

Africa's drive to achieve MDG2 of universal primary education and other gender-informed policies have helped to close the gender gap in primary education and literacy rates of women and girls. Female participation in political and societal processes has also improved with a higher share of women in the legislature. However, the *MDG Report 2015* (UNECA, 2015) highlights the very modest advances in the share of women in non-agricultural sector wage employment since 1990. Consequently, growth in manufacturing significantly enhances gender inequality, while growth in agriculture and industry reduces such inequality. Services sector growth shows some very weak inequality-reducing impacts. Although terms of trade seem to drive gender inequality significantly, its coefficient is very weak. None of the other external conditions seem to have any significant effects on gender inequality. Gender inequality is therefore driven by internal factors, which are mainly structural and cultural.

Table 8: Two-stage systems GMM estimates for within-middle segment and gender

	Within middle class				Gender			
	1	2	3	4	1	2	3	4
Lagged inequality	-0.441*** (0.094)	-0.254*** (0.070)	-0.590*** (0.133)	0.458*** (0.107)	1.093*** (0.021)	1.010*** (0.042)	0.738*** (0.134)	0.838*** (0.141)
Value added in agriculture			0.004*** (0.001)				-0.004*** (0.001)	
Value added in industry			0.000 (0.004)				-0.004*** (0.001)	
Value added in manufacturing			-0.005* (0.003)				0.002*** (0.001)	
Value added in Services			-0.006** (0.003)				-0.002* (0.001)	
GDP growth	-0.005*** (0.002)	-0.007** (0.003)		-0.020** (0.009)	-0.002*** (0.000)	-0.004** (0.001)		-0.010* (0.006)
Dependency rate	0.003*** (0.000)	0.000 (0.001)	0.001 (0.001)		0.001* (0.000)	0.001* (0.001)	-0.001* (0.001)	
Government educational spending		-0.008 (0.013)				-0.014** (0.005)		
Gov. health spending		0.017 (0.015)				0.004 (0.004)		
Human capital distribution	0.157** (0.058)		0.308*** (0.031)		-0.043*** (0.006)		-0.053* (0.034)	-0.179** (0.082)
Share of urban population	0.008** (0.003)	0.003* (0.001)			0.002*** (0.000)	0.001* (0.001)	-0.002** (0.001)	
Natural resource rent	0.001** (0.000)	0.001 (0.004)	0.000 (0.001)		0.001*** (0.000)	0.001** (0.000)	0.002*** (0.000)	
Institutionalised democracy	0.002** (0.001)	0.000 (0.000)	0.004*** (0.001)		0.001*** (0.000)	0.001*** (0.000)	0.001* (0.001)	
Foreign direct investment				0.024 (0.024)				0.017 (0.015)
Remittances				-0.035** (0.012)				0.004 (0.012)
Terms of trade				0.003** (0.001)				0.001* (0.001)
Real effective exchange rates				0.002 (0.002)				-0.004 (0.006)
Constant								0.000 (0.000)
Government educational spending	1.608*** (0.192)	1.721*** (0.209)	2.295*** (0.252)	0.716 (0.783)	-0.123*** (0.034)	0.111 (0.086)	0.389* (0.214)	0.914*** (0.267)
p-value Sargan	0.2742	0.6154	0.1458	0.9929	0.3219	0.6699	0.8585	0.9912

*Note: the dependent variable is five-year average of inequality within the respective inequality category. All regressions include country and period dummies. Sargan denote p-values of Sargan test for over identifying restrictions. *, **, *** denote significance at 10%, 5% and 1% levels respectively; standard errors in parentheses.*

5. Implications for 'leaving no one behind' in Africa

The signature idea that makes the SDG agenda theoretically more inclusive than its predecessor is that of 'leaving no one behind'. Its nobility lies in the commitment that no goal should be considered achieved unless it is achieved for everyone. However, the exact meaning of leave no one behind has to be established together with the development of approaches for achieving the respective goals. We therefore briefly examine what leaving no one behind would mean for Africa and in the context of the goals of poverty eradication, economic growth enhancement and inequality reduction examined in this research. For this purpose, we first draw a number of corollaries based on the findings of this work.

First, the socio-economic distance between individuals at the bottom quintile of welfare distribution and the rest of the society matters greatly in whether or not development will leave many behind in Africa. Economic growth that leads to more people at the bottom of the distribution is neither sustainable nor inclusive. Polarisation between the bottom and the other segments of the welfare distribution is bad for both growth and poverty reduction, which means that if anyone is left behind in this context, then the SDGs will not be achieved in the first place. Therefore, the goals are either inclusive or not achievable.

The second element of leave no one behind is the gender dimension. Tackling the structural and cultural impediments that continue to leave women behind from participation in gainful employment, especially in the non-agricultural sector, is a key factor in ensuring that no woman is left behind in the post-2015 development process.

Third, spatial disparities mean that progress in the SDGs in Africa would be uneven. The significant differences in experience with the MDGs and in terms of growth, inequality and poverty suggest that some geographic areas of Africa risk being left behind. These areas, in the context of the goals in focus, are those that experience high inequality, medium to low and negative growth, and high poverty.

The fourth aspect of leaving no one behind in this context is with respect to data. Currently, there are still data challenges for robust study of the marginalised population, mainly because they are not included sufficiently in data compared to those in the developed world and the developing world of other regions like Latin America.

Overall, the key segments of the African population that are most at risk of being left behind are those at the very bottom of the income distribution spectrum. These are mainly women, children and other vulnerable groups such as internally and externally displaced people, especially the increasing share of stateless people in the African population. A key challenge is state fragility, where there is weak capacity to account for and include these groups of people in the mainstream production processes.

6. Priority actions for the first 1000 days

Our findings have implications for policies that could address growth and poverty eradication foregone due to high inequality. Most of the countries that performed dismally in terms of poverty reduction also had high inequality and a relatively low share of income accruing to the poorest 10%. In line with leaving no one behind, the research classified different inequalities along the income distribution spectrum and by gender according to their impacts on economic growth.

There are good and bad inequalities with respect to their effects on economic growth. All inequalities between the middle and bottom and between the bottom and top of the income distribution spectrum are bad for economic growth in Africa. Gender inequality (favouring males) in labour market participation significantly reduces growth. Policy efforts that target the reduction of all the bad types of inequality by one point each would enhance growth by up to three percentage points in the next five years. If policy efforts were to target these inequalities in a way that the fruits begin to be reaped immediately, then within the first 1000 days of the SDGs implementation, Africa would achieve on average an extra 1.58 percentage points in economic growth. This would also translate into stronger poverty reduction than before, given the role that inequality plays in determining how pro-poor growth is.

The main factor contributing to high inequality in Africa (especially the kinds of inequality that reduce growth) is human capital distribution, or the proportion of people with primary education and less, to those with secondary education and above. Human capital distribution accounts for up to 2.5 Gini points per year in Africa and contributes 2 points to inequality between the rich and the poor per year. Government education spending helps to curb the bad types of inequality, but does not go far enough, perhaps because of the small size and structure of the spending, which is more skewed towards primary enrolment. Other factors are the dependency rate, urbanisation and natural resource rents, which all help to fuel extreme inequality. FDI and terms of trade contribute significantly in raising extreme inequality in Africa. The structure of the economy matters for inequality. Growth of value added in services, manufacturing and agriculture all contribute in curbing extreme inequality. Institutionalised democracy, which measures the extent of the presence of institutions that facilitate the expression of preferences of citizens, constraints to the exercise of executive power and guaranteed civil liberties show some effect in reducing inequality. Remittances have the potential to reduce extreme inequality, but not significantly.

In proposing policy actions based on the findings in this work, we make a distinction between immediate actions (within 1000 days) and other gradual, incremental and longer-term actions. We also explore and propose windows of opportunity.

6.1 Statistics that leave no one behind

Immediate action must involve setting an agenda for reliable statistical development in Africa, to include above all the most marginalised and those at greatest risk of being left behind. Robust studies of this category of population in Africa are still a major challenge due to a lack of data. Such an agenda should build on the African Data Consensus by following up with concrete action plans in line with its vision. The main recommendation here is that the quest for statistics production should be driven by the needs reflected in the long-term development agenda, including the SDGs. Moreover, a partnership between the users of data and the producers of statistics in most African countries is needed to ensure effective access to and productive use of data. Finally, other data-generating institutions, such as the taxation departments, should develop relevant frameworks with which to give researchers access to data that could usefully complement existing household surveys.

6.2 Economic growth and sectoral policies

Domestic policy choices that have led to both socio-political stability and improvements in the business climate in a number of the African countries in the past decade and a half have underpinned significant growth. For a number of countries, growth was based on commodity exports following high demand and high prices in emerging economies like China.

High inequality has prevented growth from reaching the poorest segments of African population. The FDI increases following the improvements in business climate and the gains in terms of trade due to favourable external commodity demand and prices have rather exacerbated the *bad* types of inequality identified in this work. Because high trade costs might not allow small businesses (that support the middle class and the poor) to trade with the usual trading partners of Africa, such as Europe and China, the alternative is cross-border and intra-African

trade. However, high trade barriers, which are mostly policy-related, hinder this development and contribute to spatial inequality in Africa. Reducing cross-border and inter-regional tariff and non-tariff trade costs is a matter of political will and should be subject to immediate action through high-level lobbying. Short-term policies could aim to reduce man-made barriers, while following through with cross-border and inter-regional infrastructure linkages in the medium to long terms. Policies in this line can also aim at opening enclave regions and countries particularly through infrastructure networks. This will help curb the contribution of spatial inequality in Africa's inequality.

Although Africa's share of global FDI is on the rise, increasing by 9% between 2012 and 2013 (AfDB, 2015), the sectors that increasingly attract the FDI are extractives, infrastructure and consumer-oriented industries. Coupled with the effects of terms of trade, production in these sectors is generally capital-intensive and labour is skilled. Sectoral policies geared towards developing value chains in the sectors that tend to reduce lower-end and extreme inequalities should be the priority, alongside complementary medium- to long-term skills development policies. Policies for investment attraction have to be targeted in terms of incentivising investments that do not crowd out small businesses in the manufacturing, agriculture and services. The quest for improving the ease of doing business should emphasise local and regional investment as much as the attraction of FDI. Given the current search for an industrialisation path and the crafting of industrial policies in Africa, this is an opportune moment for industrial policies to be based on value chains in the sectors that reduce the bad types of inequality. Therefore, this research calls for the development of industrial policies that hinge heavily on agricultural value chains with strong linkages to the services sector. Good governance of natural resources (especially ensuring transparency and accountability) has to be ensured for equitable access to its benefits as natural resource rents appear to raise inequality. Only then will an extractive-based industrial strategy prove beneficial.

Migrant remittances being another source of financial resources for Africa, it is worth examining here also. Although migrant remittances do not benefit those at the bottom of the distribution significantly, it nevertheless remains a significant source of resources for development. Currently, remittances tend to favour the middle class, due to the fact that the poor cannot bear the related cost of migration and remittances flows. Continuous efforts to lobby for significant reduction of the cost and barriers to the flow of remittances in migrant-receiving countries have to be intensified.

6.3 Educational policy and human capital distribution

Human capital distribution policies (especially educational) are most important, according to the findings here. Well-targeted government educational spending seems to help in reducing the bad types of inequality. However, inequality in human capital distribution causes far more harm, with effects far outweighing the positive impacts of government expenditure.

A complementary policy for attracting FDI into more low-skill labour-absorbing sectors would address the problem of a human capital distribution in which there are far more people with primary and no education in the economy compared to those with secondary and higher education. There is evidence that the past efforts of African countries in achieving MDG 2, universal primary education, have put a lot of emphasis on basic education. At the same time, the structural progression in many countries that underpins investment and growth is mainly in the medium- to high-skilled sectors. The services sectors are increasingly becoming the target of FDI in many African countries. This mismatch has contributed in exacerbating mid- to lower-end inequality, average inequality and extreme inequality, which have been proven to be bad for growth in Africa.

Immediate policies have to target spending beyond primary education to encompass secondary and post-secondary education. A systematic investigation and addressing of very low primary completion rates will also ensure that there are enough pupils to progress to secondary and higher education. This points to addressing issues of quality of education. There is a cycle that has to be reinforced here in the sense that economic growth has to be high enough to generate resources for government social spending, including education. Well-targeted spending that increases basic educational attainment but also goes far enough to curb skills concentration will also reduce lower- to mid-end inequality and extreme inequality, leading to higher growth for more resources.

Well-targeted educational spending can reduce the skills imbalance but also, if it focuses on the dependent youths, partly address the issue of high dependency rate (which also has significant bad-inequality-raising effects). Because of the significant wealth gradient for the youth dependency ratio in Africa, high dependency rates place a disproportionately higher burden on the poor. While this can be partly addressed with government social, and especially educational, spending, labour market policies in the short term that help absorb the unskilled and low-skilled population are important. These can be linked to public works and infrastructure development programmes, which have proven what they can do in countries like South Africa.

6.4 Policies to reduce gender inequality

Gender inequality is somewhat distinctive in that it tends to reinforce itself over time. This implies that immediate policies will have to start at the root of the structural and cultural causes of gender discrimination in the labour market in most African societies. Without a big shift in mind-sets concerning female participation in wage employment in the non-agricultural sector, other efforts may not be sustainable. Advocacy and laws on equal opportunity in the labour market should accompany the progress made so far in including women in the political processes in most African countries.

Other major policies concern human capital distribution and the dependency ratio. The burden that a high dependency rate places on the poor may be higher for women. This in turn affects female labour force participation. Educational human capital distribution in Africa still largely favours males and hence leads to less participation of females in the labour market relative to men. Removing the constraints on female access to the levels of education linked to higher future wages, such as technical and vocational education, is to be encouraged.

This is evidenced in the fact that manufacturing growth reinforces the gap in labour force participation of males and females. Africa's drive to achieve universal primary education and other gender-informed policies has helped to close the gender gap in primary education and improve literacy rates of women and girls. However, the fact that women's participation in non-agricultural-sector wage employment since 1990 has remained lower implies that the gains in gender parity in basic education may not curb gender inequality in the labour market. The government spending policy shifts proposed above should be particularly skewed in favour of female skills development. External resources targeting the SDGs should also contribute in reducing the gender skills gap.

6.5 Proposed framework for action

Following the findings of the analyses above, we now try to identify key partnership levels, possible stakeholders, policy focal points and key objectives to pursue in addressing the issues related to SDG goals 1, 5, 8 and 10. The proposed framework is outlined in Table 9.

Table 9: A framework for action

Partnership level	Possible stakeholders	Key policy aspects to focus on	Main objectives
National	• Government • Academia • Grassroots civil society organisations (CSOs) • Other CSOs • Business	• Addressing the problem of human capital distribution • Harmonisation of local FDI attraction incentives to include small, medium and micro-sized enterprises (SMMEs) • Access to labour market • Identification and inclusion of the excluded population	• Develop a framework with effective inclusion of the most vulnerable in national surveys • Develop an action plan to ensure that the key dimensions of the SDG indicators and factors that influence them are adequately covered in statistics • Develop a targeting criteria for beneficiaries of social assistance and educational spending • Review FDI attraction incentives in comparison with SME development incentives • Governments should tailor FDI incentive packages into the pro-poor value chains of the local economy • Build multi-stakeholder coalitions to help identify key constraints of women's access to labour markets and put in place a solution framework to address them in the medium to long term • Businesses should lead and develop a framework for addressing labour demand-side hindrances to effective women's participation in the labour market • Enshrine the key SDGs into the national institutional framework
Regional and continental	• Regional integration entities • African Union (AU) organs • Member states • Emerging economies • Academia	• Issues of regional integration (RI) • Refugees and stateless person • Resource mobilisation • Educational collaboration at primary and secondary levels	• Enshrine the key SDGs into regional and continental agreements and frameworks • Agree on a framework for identification and inclusion of refugees and stateless persons into the continental development process • Escalate the educational and human capacity development burden of such categories of people beyond individual states to effective continental and regional bodies • Enter into a statistical pact to measure and include the SDG attributes of these categories of people in the broader developmental discussion and agenda • Identify constraints and develop a framework to address issues of RI and especially cross-border trade by women and smallholder businesses • Mobilise resources and collaborate in education to support fragile states, refugees and stateless persons

Table 9: A framework for action (continued)

Partnership level	Possible stakeholders	Key policy aspects to focus on	Main objectives
Global	• UN organs • International nongovernmental organisations (INGOs) • International development partners • Global multinationals • Developed countries • Academia	• Resource mobilisation • Tackling the issues of refugees and stateless persons • Cooperation for quality improvement in primary and secondary education	• Deal decisively with the status of stateless persons • Multinationals be brought to the table in staking resources for development of the most vulnerable groups and fragile states • Multinationals should play a bigger role in enabling female access to the labour market • INGO activities in education and gender should extend significantly to secondary education • International cooperation in primary and secondary school training and resourcing • Build statistical capacity for weak and fragile states

7. Concluding remarks

This paper has sought to help in the search for implementation strategies for the SDGs. It focuses directly on goal 10.1 (relating to reduction of income inequality) and goal 8.1 (relating to economic growth in the LDCs). It also focuses partly on goal 5 of achieving gender equality and indirectly on goal 1.1 of poverty eradication.

The research first explored progress and limitations in the MDGs relating to the focus goals. It followed up with rigorous data analysis to first determine the impact of different inequalities on economic growth and then examine the underlying causes of those inequalities that impact economic growth negatively. The geographic area of focus is Africa. The following are key policy outcomes for the SDGs.

Policy efforts will yield more fruit in terms of economic growth if they focus on the following types of inequalities: inequalities from the middle to the bottom of the income distribution spectrum; inequality between the bottom and the top segments of the income distribution spectrum; average inequality; and gender inequality. It will be useful to create a dashboard in each African country to monitor the evolution of each of these inequalities.

Policy efforts that target the reduction of these inequalities by one point each would enhance growth by up to three percentage point in the next five years. Key policy proposals are to:

- Develop and strengthen the statistical capacity of African countries to include the most marginalised and those at greatest risk of being left behind by taking concrete actions as a follow-up to the recently adopted Africa Data Consensus.
- Lobby for action to reduce cross-border and inter-regional trade barriers in Africa.
- Encourage policies for attracting investment that does not crowd out small businesses in manufacturing, agriculture and services. Policies should target segments of value chains in industries that complement rather than compete with small businesses. They should seek to enhance the capacity of small, local players to exploit synergies that arise from FDI inflows.
- Given the current search for an industrialisation path and the crafting of industrial policies in Africa, this is an opportune moment for industrial policies to be based on value chains in the sectors that reduce the bad types of inequalities. Industrialisation that builds on the agricultural value chain, with strong linkages to the services sector – encouraging value addition in agricultural products and linking them to supermarket retail services, for example – would be useful in this regard.
- Good governance of natural resources (ensuring transparency and accountability) has to be ensured for equitable access to its benefits. Only then will an extractive-based industrial strategy prove beneficial.
- Government educational spending that targets the poor and females will help in reducing the bad types of inequality. Such policies have to particularly target spending beyond primary education to encompass secondary and post-secondary. This will ensure that it both increases basic educational attainment but also goes far enough to curb skills concentration, which will help to reduce lower-to-mid-end inequality and extreme inequality, leading to higher growth for more resources. Well-targeted educational spending may reduce the skills imbalance but also, if it focuses on the dependent youths, partly address the issue of a high dependency rate.
- A systematic investigation of very low primary completion rates should seek to ensure that there are enough pupils to progress to secondary and higher education.
- While dependency can be partly addressed with government social, and particularly educational spending, labour market policies in the short term that help in absorbing the unskilled and low-skill population are important. These can be linked to public works and infrastructure development programmes that have shown they can work in countries like South Africa.
- A complementary policy should be developed to attract FDI into more low-skill labour-absorbing sectors to address the problem of human capital distribution. This is the case with investment attraction in agriculture, but careful management of land tenure and the problems of land grabbing will ensure that inequality is not exacerbated.
- Immediate policies to reduce gender inequality will have to start from the root, by tackling the structural and cultural causes of gender discrimination in the labour market in most African societies. For instance, gender-based job restrictions, the removal of impediments to access to credits and subsequent review and removal of all legal obstacles that hinder women's progress, such as those relating to property rights (and especially land rights).
- Without a big shift in mind-sets concerning women's participation in wage employment in the non-agricultural sector, other efforts may not be sustainable. This mind-set shift has to be done through a combination of lobbying and advocacy, and enforcement of equality laws regarding access to the labour market (such as employment equity laws). Advocacy and laws for equal opportunity in the labour market should accompany the progress made so far in including women in the political processes in most African countries.

- The government spending policy shifts proposed above should be particularly skewed in favour of female skills development. Allocation of quotas for certain categories of the particularly vulnerable female population may be accompanied by the removal of non-monetary constraints to access to education by girls. Such non-monetary constraints include addressing the disproportionate burden of household responsibilities on girls (e.g. water and fuel-wood collection, the care burden); addressing teenage pregnancy through advocacy and appropriate reproductive health assistance; the development and enforcement of legal measures against child marriages and child sex abuse.
- External resources targeting the SDGs should also contribute in reducing the gender skills gap. The allocation of development resources specifically towards the education of females and assistance with easing other non-monetary constraints would be ways to tackle the skills gap.

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Appendix

Table 10: Variables, meaning and source

Variable	Meaning	Source
Between-group inequality		
Rich-poor	Ratio of incomes accruing to 5th and 1st quintiles and 10th decile and 1st quintile	WDI
Rich-middleclass	Ratio of 10th decile to 3rd quintile incomes	WDI
Middleclass-poor	Ratio of 3rd to 1st quintiles and 3rd quintile to 1st decile incomes	WDI
Within-group inequality		
Poor	Ratio of 2nd quintile to 1st decile incomes	WDI
Middleclass	Ratio of 4th quintile to 3rd quintile incomes	WDI
Rich	Ratio of 5th quintile to 10th decile and 5th to 4th quintiles incomes	WDI
Other variables		
Initial income	Real per capita GDP at the beginning of the period	WDI
Growth	Per capita GDP growth	WDI
Human capital	Lower secondary completion rate	WDI
Investment	Share of gross fixed capital formation in GDP	WDI
Terms of trade	International terms of trade, goods and services	WDI
Remittances/GDP	Workers remittances/GDP	UNCTAD
FDI/GDP	Net FDI flow/GDP	UNCTAD
GDPPC growth	Growth rate of GDP per capita	WDI
Man. value-added growth	Growth in manufacturing value added (VA)	
Services VA growth	Growth in services VA	
Agricultural VA growth	Growth in agricultural VA	
Industry VA growth	Growth in industry VA, net manufacturing	
Resource rents	Share of natural resources in GDP	
Dependency ratio	Ratio of dependents to working population	
Labour force participation	Labour force participation as a % of total population	WDI
Human capital spread	People with tertiary and secondary education /people with primary and no education	Barro and Lee (WDI)
REER	Real Effective Exchange rate	WDI
Institutionalise democracy	Captures the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders; the existence of institutionalised constraints on the exercise of power by the executive; and the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation.	ADI
Urbanisation	Urban population as a % of total population	ADI
Gov. soc. spending	Total government spending on education, health and social programmes	ADI

This research paper, part of the series 'Starting Strong: the first 1000 days of the SDGs', identifies key actions toward addressing the unfinished business of the MDGs and how to reach those who are furthest behind in relation to the new SDGs.

The 'Starting Strong' series is a collaborative partnership to initiate a wider conversation around priority actions for the first three years of the SDGs – just over 1000 days – with relevant stakeholders with a regional focus.

Professor Nicholas Ngepah (PhD) is affiliated with the University of Johannesburg.

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Development Progress

Overseas Development Institute
203 Blackfriars Road
London SE1 8NJ

Tel: +44 (0)20 7922 0300
Email: developmentprogress@odi.org.uk

facebook.com/developmentprogressproject
twitter.com/dev_progress

developmentprogress.org

Centre for Policy Dialogue (CPD)
House # 6/2 (7th and 8th Floor)
Block – F, Kazi Nazrul Islam Road
Lalmatia Housing Estate,
Dhaka – 1207, Bangladesh

Tel: (+88 02) 9141734
Email: info@southernvoice.org

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