## Drivers of inclusive growth in Africa



United Nations Economic Commission for Africa

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## Abstract

Africa's growth performance during the period 2000-2015 was the second-fastest in the world, following East and South Asia, which rekindled hope for prosperity. Income inequality, however, was the second-highest, following Latin America. This has raised concerns over whether the recent growth is inclusive. There is increasing attention on the issue of inclusive growth both in academic and policy circles, with several definitions and alternate measurements, which suggest a lack of unanimity. The authors define inclusive growth as broad-based growth in income that is shared by every member of society (i.e., growth benefitting everyone in the economy) or growth that reduces inequality, or a combination of both. The level of inclusive growth in Africa is assessed and the drivers of inclusive growth investigated at an aggregate level. Using the unified measure of inclusive growth, the level of inclusivity of growth in Africa was computed. The authors' findings indicate that growth in Africa is slightly inclusive, with an inclusive growth rate of 0.246. The estimation results indicate that investment, government spending, loose monetary policy, competitive and efficient financial institutions, better information and communications technology (ICT) infrastructure and better institutions foster inclusive growth in Africa. Consistent with the conditional convergence hypothesis that implies that poorer economies tend to grow faster than richer ones, the authors find negative and statistically significant effects of initial gross domestic product per capita on inclusive growth. Overall, the econometric results provide evidence on the role of macroeconomic policies (fiscal and monetary) and on the role of good institutions and governance, as well as ICT, in affecting inclusive growth in Africa. This implies that fostering inclusive growth is amenable to macroeconomic policies and other development interventions. Further research is recommended in order to focus on disaggregating the channels through which both fiscal and monetary policies affect inclusive growth.

Keywords: growth, inequality, inclusive growth, Africa

## 1. Introduction

Africa has experienced unprecedented long spells of growth since the turn of the twenty-first century. During the period 2000-2015, it had one the highest average growth rates in the world since the wave of independence on the continent, at 4.8 per cent. There is, however, a growing concern that this growth has not been widely shared, and significant portions of the population have been left out. This growth has been variously referred to as a jobless growth (Economic Commission for AFrica, 2015; Sy, 2014; Hanson and Leautier, 2013) and non-inclusive growth (Economic Commission for Africa and African Union, 2013). Africa's experience appears to point to growth benefits bypassing significant segments of its population, with serious implications for income distribution, poverty alleviation and the stability of the continent.

In the second decade of the new millennium, Africa has focused on promoting structural transformation through industrialization of the continent (Economic Commission for Africa, 2012, 2013, 2014, 2015 and 2016). Inclusive growth is reflected in various continental development framework documents such as Agenda 2063, which fed into the global Sustainable Development Goals (in particular, Goal 8), which were adopted in 2015. It is therefore globally, regionally and nationally acknowledged that the quality of growth in Africa needs to improve, that is, to be inclusive, so that no one is left behind.<sup>1</sup>

While various analysts globally have recently been concerned with studying "inclusive growth" (Ali and Son, 2007; Ianchovichina and Lundstrom, 2009; Rauniyar and Kanbur, 2010; Klasen, 2010; Anand and others, 2013; Ncube, 2015), there are varying interpretations of the term and how it is measured. For the present study, the authors conceptualize inclusive growth as broad-based growth in income that is shared by every member of society (i.e., growth benefitting everyone in the economy) or growth that reduces inequality, or a combination of both. Technically, this inclusive growth concept could be summarized as growth in income adjusted for inequality. This conceptualization is influenced by an interest in using an operationally feasible, unified measure of inclusive growth at an aggregate level that demands limited data.

The literature on inclusive growth is scarce. Much of the existing literature on inclusive growth focuses on defining the concept and discussion on the measurement of inclusive growth (Ranieri and Ramos, 2013; Klasen, 2010; Rauniyar and Kanabur, 2010). There are only a handful of studies that measure inclusive growth and investigate the determinants of inclusive growth (Anand and others, 2013, Balakrishman and others, 2013; Aoyagi and Ganelli, 2015). Those studies focused on Asia, while the literature on inclusive growth in Africa is almost inexistent. The authors of this report found only two studies that measured inclusive growth in Africa: Ncube (2015) and Hakimian (2013). Ncube focused on laying out an approach for measuring inclusive growth, then constructing an index of inclusive growth for Africa and ranking countries on the basis of the index. Similarly, Hakimian also measured the level of inclusive growth, focusing

<sup>&</sup>lt;sup>1</sup> The consequences of less inclusive growth cannot be understated, given that they result in both income and non-income inequality with regard to, among other things, health, education and political participation. This has repercussions for sustaining growth owing to social unrest or not capitalizing on human capital, which stifles the full potential of aggregate demand. This suggests the need to focus on the issue of inclusive growth.

on North Africa following Ncube's approach. Both studies, however, did not discuss the factors that foster or inhibit inclusivity of growth. This study fills this gap and discusses the factors associated with inclusive growth in Africa. Moreover, inclusive growth is measured differently than in Ncube and Hakimian.

This study investigates the issue of inclusive growth by reviewing the recent trends in growth and inequality and providing a description of the extent that growth has been inclusive in Africa. In addition, the factors associated with inclusive growth in Africa are examined using a cross-country regression model. In the model, the authors regress the measure of inclusive growth on various explanatory factors that could affect inclusive growth. This study provides the first set of results on the inclusivity of growth in Africa, which regress the measure contrasts with previous studies (Ncube, 2015; Hakimian, 2013) that relied on a composite index based on several indicators. In addition, empirical evidence is presented on the factors that drive inclusive growth on the basis of a cross-country regression model. The results provide empirical evidence that the continent should indeed focus on identifying and harnessing the drivers of inclusive growth to ensure shared prosperity and promote stability.

The study first presents the current state of growth inclusiveness for Africa using a unified single measure that integrates growth and income distribution. Second, the factors that drive inclusive growth are explored. The authors' econometric results provide evidence on the roles of macroeconomic policies (fiscal and monetary), good institutions and governance, as well as other factors, such as information and communications technology (ICT) and natural resource rent in affecting inclusive growth in Africa.

The rest of the paper is structured as follows. In section 2, the authors present some trends and stylized facts regarding growth and equality in Africa. In section 3, they define and lay out the approach for measuring inclusive growth in Africa. In section 4, they describe the level of inclusive growth in Africa. In Section 5, they provide the conceptual and econometric framework and present the econometric results of the inclusive growth model using cross-country and panel regressions based on data from Africa. The last section contains a conclusion and a discussion of policy implications.

# 2. Overview of growth and inequality in Africa

### 2.1 Growth performance in Africa since 2000

Since the turn of the century, Africa has registered a spectacular growth performance that has renewed hope on the continent. During the period 2000-2015, Africa's growth averaged 4.8 per cent annually, becoming the second-fastest growing region, following East and South Asia (see figure 2.1). This is in contrast with the despair of stagnation witnessed during most of the period between 1960 and 2000. For example, Africa grew at 2.4 per cent during 1980-1999, in contrast with the average growth rate of 4.8 per cent between 2000 and 2015. The recent growth performance was attributed in large part to the boom in commodity prices, a reduction in external debt and improvements in current account balance through sound macroeconomic policies, foreign aid and debt cancellations.

A total of 10 African countries averaged growth of 7 per cent and above during the period 2000-2015, 30 countries registered average growth of between 3 and 7 per cent and 9 countries registered annual growth of less than 3 per cent. Only the Central Africa Republic, on average, performed poorly, contracting by 0.5 per cent annually during the same period.

#### Growth in Africa by subregion during the period 2000-2015

The patterns of growth observed at the continent level are shared across subregions, except in Central and West Africa. In Central Africa, growth declined from an average of 5.8 in 2000-2004 to 3.9 per cent during 2010-2014 and 3.8 per cent during 2005-2009. In West Africa, it fell from 8.1 in 2000-2004 to 5.9 per cent in 2005-2009 and



## Figure 2.1: Economic growth across regions, 2000-2015 (Per cent)

2000-2015

Source: Department of Economic and Social Affairs.

5.5 per cent in 2010-2014. Notwithstanding the decline, West Africa's growth during the period made it the second-fastest growing subregion in Africa.

During the period 2000-2015, East Africa performed very well among the subregions, growing rapidly at 3.9 per cent, 6.4 per cent and 6.8 per cent annually during the periods 2000-2004, 2005-2009 and 2010-2015, respectively. The rapid growth registered in East Africa was driven by increased government spending on infrastructure and social spending.

The average annual rate of growth of Africa grew at 4.5 and 5.3 per cent during the period 2000-2004 and 2005-2009, respectively, which, following the global economic crisis of 2008-2009 and domestic social unrest, later fell to an average annual growth rate of 1.8 per cent during 2000-2015. Similarly, Southern Africa grew at an annual average growth rate of 3.8 and 5.2 per cent during 2000-2004 and 2005-2009, respectively, which decelerated to a growth of 3.1 per cent during 2010-2015.

In general, Africa witnessed a remarkable rapid growth during the period 200-2015. Importantly, growth performance was impressive, notwithstanding the global financial crisis that slowed down growth in most parts of the world. The boom in commodity prices, improved macroeconomic management, debt relief and an improved foreign aid contributed to the improved growth performance recorded during 2000-2015.

#### Growth in Africa by economic group during the period 2000-2015

Consistent with the boom in commodity prices, especially oil prices, the growth performance of oil-exporting economies was the highest, at an average rate of 5.99 per cent, during most years in the period 2000-2015, followed by mineral-poor economies, which registered an average growth of 5.65 per cent annually. Oil-importing economies and mineral-rich economies performed similarly, with an average annual growth of 4.01 and 3.91 per cent, respectively.



## Figure 2.2: Growth in Africa by subregion, 2000-2015 (five-year average) (Per cent)

Source: Department of Economic and Social Affairs.



Figure 2.3: Growth in Africa by economic group, 2000-2015 (Per cent)

Source: Department of Economic and Social Affairs.

### 2.2 Evolution of income inequality in Africa since 2000

The evolution of income inequality in Africa is presented for the period 2000-2015. A commonly used measure of income inequality, the Gini index, was used. The authors' data on the Gini index are based on the World Bank's 2017 World Development Indicators. All the data available for African countries in the database are used, yet the sample does not cover all African countries owing to a lack of data for some countries. Africa has the second-highest level of income inequality in the world, following Latin America.

During the period 2000-2014, the Gini index of income inequality dropped slightly, from 44.73 to 42.51. The current level of inequality, however, is high, which requires the attention necessary to address the problem. On average, inequality increased in 20 countries and decreased in 17 countries in the sample, which includes countries with at least two observations between 2000 and 2014. During the period 2000-2014, the highest rise in inequality was observed in the Central Africa Republic, Guinea-Bissau, Malawi, South Africa and Zambia. During the same period, the highest decline in inequality was observed in Angola, Burkina Faso, Mauritania, the Niger and Sierra Leone.

Considering income distribution as measured by the Gini index during the period 2000-2014, income inequality remains at a higher level and persists, notwithstanding the remarkable growth witnessed during the same period. The situation based on the weighted Gini index using population size is similar to the unweighted results.

#### Figure 2.4: Income inequality in Africa, 2000-2014 (Unweighted Gini index)



Source: Authors' computation based on data from the 2017 World Development Indicators of the World Bank.

#### Income inequality across subregions during the period 2000-2014

Consistent with the overall result of a high level of, but a slow decline in, inequality, the evolution of income distribution across subregions shows a sluggishly falling and yet high level of inequality, except in Central Africa, where inequality increased from 39.43 during the period 2000-2004 to 47.14 during 2005-2009, which fell to 42.41 during 2010-2014, which remains a high level of inequality, compared with the period 2000-2004.

Inequality was the highest in Southern Africa during the entire sample period (2000-2014). Almost all countries in the subregion, except Mauritius, had high levels of inequality, above the average for Africa. For example, in South Africa, the macroeconomic, labour market and structural forces were still not conducive to redistribution and the sharing of the benefits of growth. Similarly, East Africa and West Africa also had high levels of inequality, following Southern Africa. Moreover, inequality dropped marginally during the period 2000-2014. Notwithstanding the rapid growth registered during the same period and the top performance in East Africa, inequality did not substantially improve in the subregion. Improvement in income distribution was slow in West Africa, as reflected in the slight drop in the Gini index, from 42.08 to 39.52 per cent. North Africa had a relatively lower inequality level and achieved a relatively better reduction in income inequality.



Figure 2.5: Income inequality in Africa by subregions, 2000-2014 (Unweighted Gini index)

#### Income inequality by economic group during the period 2000-2014

When observing the level of inequality during the period 2010-2014, mineral-rich economies had the highest level of inequality, with an average Gini index of 43.19. A highly similar level of inequality was observed in oil-rich economies, with an average Gini index of 42.72, and oil-poor economies, with an average Gini index of 42.47. Compared with other subregions, mineral-poor economies had low levels of inequality, with an average Gini index of 41.61, yet the recorded Gini index in absolute terms indicated a high level of inequality.

When observing the trend of inequality during the period 2000-2014, there was a slight improvement in income distribution. In Africa, income inequality dropped, from an average Gini index of 44.73 to 42.51 during 2000-2014. By economic group, the largest reduction in inequality was observed in mineral-rich economies, followed by oil-importing economies. Mineral-poor economies managed to slightly reduce inequality, while oil-rich economies performed poorly, with a marginal decline in income inequality during the period 2000-2014.

On the one hand, Africa witnessed rapid growth, while, on the other hand, inequality remained high and appeared to persist at a high level. This implies that the rapid growth achieved during the most recent period (2000-2014) did not translate into reducing income inequality.

Source: Authors' computation based on data from the 2017 world development indicators of the World Bank.





Source: Authors' computation based on data from the 2017 World Development Indicators of the World Bank.

## 3. Defining and measuring inclusive growth

It is argued in the early development literature that rapid growth is the most effective path to improve well-being. In fact, widening inequality is viewed as a sine qua non during the initial stage of development. For example, Kuznet (1955) argues that, at an early stage of development, inequality first rises and later declines as per capita income rises. This literature is of the view that inequality is a toll on growth or a by-product of it. It places a priority on growth, with the assumption that its benefits eventually trickle down. This view was influenced in large part by the observations of the development path of advanced economies such as the United States of America and the United Kingdom of Great Britain and Northern Ireland, where real per capita income grew steadily from 1950 to the late 2000s (Berg and Ostry, 2011).

The experience observed in a number of developing countries, however, was not in line with the early development thinking (Berg and Ostry, 2011). Indeed, the post-World War II experience of developing countries presents mixed trajectories, many of which involved unsteady and, in some cases, erratic performance in terms of average real income. Furthermore, several countries witnessed rapid growth together with widening inequality.

Prioritizing economic growth alone cannot meet the development needs of poor people, given that it fails to directly address issues such as inequality and unemployment. In addition, the Asian tigers (Hong Kong, China; the Republic of Korea; Singapore; and Taiwan, province of China), prior to the 1990s financial crisis, recorded rapid growth in per capita income with relatively stable and low inequality (Dagdeviren and others, 2000). This led to the emergence of the understanding that growth and equity can and should go hand in hand, challenging the development thinking and reorienting the debate towards how to promote growth with equity.

Recent thinking on development supplants the ideas of "trickle-down development" advocated in the 1950s and 1960s (Kakwani and Pernia, 2000) and the policies associated with the Washington Consensus of the 1980s and 1990s. It acknowledges the interaction between growth, inequality and poverty. Economic growth is a critical component in reducing poverty (Deininger and Squire, 1998; Ravallion, 2001; Dollar and Kraay, 2002). Indeed, inequality matters for growth and other macroeconomic outcomes (Barro, 2001; Berg and Ostry, 2011), in particular for sustaining growth in the long term (lanchovichina and Lundstrom, 2009).

As a result, the development literature and policy debates have incorporated several concepts that encompass both growth and inequality, such as broad-based growth, shared growth and pro-poor growth. Along this line, the concept of inclusive growth surfaced in the literature and policy debates, although without unanimity on its definition and measurement. In the following section, some of the definitions of inclusive growth are reviewed.

### 3.1 Defining inclusive growth

A review of the literature on inclusive growth reveals many conflicting definitions. Some of these concepts are vague and do not lend themselves to easy quantitative operationalization, while others are specific but may not capture the essence of the concept. Overall, various institutions and academics offer different definitions of inclusive growth and approaches to measure it.<sup>2</sup>

The African Development Bank (2012) defined inclusive growth as "economic growth that results in wider access to sustainable socioeconomic opportunities for a broader number of people, regions, or countries, while protecting the vulnerable, all being done in an environment of fairness, equal justice, and political plurality". The Asian Development Bank defines inclusive growth as one that increases the social opportunity function and that comprises two factors: average opportunities available to the population and how opportunities are shared among the population (Ali and Son, 2007b).

The Organization for Economic Cooperation and Development (2014) argued that inclusive growth was economic growth that creates opportunity for all segments of the population and distributes the dividends of increased prosperity, both in monetary and non-monetary terms, fairly across society. It recognized that economic growth was important but insufficient in generating sustained improvements in welfare, unless the dividends of growth are shared fairly among individuals and social groups. In addition to income and wealth, people's well-being is shaped by non-income dimensions, such as their health and education status.

The United Nations Development Programme (2015) pointed out that inclusive growth occurred in the sectors in which the poor work (e.g., agriculture) and where the poor live (e.g., undeveloped areas with few resources), uses the factors of production that the poor possess (e.g., unskilled labour) and reduces the prices of consumption items that the poor consume (e.g., food, fuel and clothing).

The World Bank argued that growth was inclusive when productivity is improved and employment opportunities created (Ianchovichina and Lundstrom, 2009; World Bank, 2009), and said (2009) that inclusive growth focuses on an ex ante analysis of the sources of and constraints to sustained, high growth and not only on one group: the poor.

Kakawani and Pernia (2000) defined inclusive economic growth as one that enables the poor to actively participate in and significantly benefit from economic activity, which they used synonymously with pro-poor growth. Ali and Son (2007) considered growth inclusive if it increases the social opportunity function, which depends on two factors: (a) average opportunities available to the population; and (b) how opportunities are shared among the population. For Habito (2009), growth was inclusive if the gross domestic product (GDP) growth leads to significant poverty reduction.

<sup>&</sup>lt;sup>2</sup> For a good review of the concept and measurement of inclusive growth, see Ranieri and Ramos (2013).

lanchovichina and Lundstrom (2009) conceptualized inclusive growth in relation to better growth and improved GDP of the economy, accompanied by an increase in productive employment opportunities and a level playing field for investment. McKinley (2010) highlighted two dimensions of inclusive growth: (a) achieving sustainable growth that will create and expand economic opportunities; and (b) ensuring broader access to these opportunities so that members of society can participate in and benefit from growth.

Klasen (2010) defined inclusive growth as economic growth that benefits in large part groups that are otherwise disadvantaged. For example, growth that reduces regional, ethnic or gender disadvantages could be considered inclusive. He suggests that such inclusive growth could be termed as "disadvantage-reducing" growth.

Rauniyar and Kanbur (2010) distinguished between inclusive growth and inclusive development. Inclusive growth is growth accompanied by lower income inequality, while inclusive development encompasses improvements in well-being along income and non-income dimensions. Bushan (2013) postulated that, for growth to be inclusive, consumption by the "excluded group" should increase by at least the same rate as the growth rate. He proposed an increase in consumption rather than income. Given that consumption represents actual welfare gain, it more effectively captures in-kind transfers and is easier to measure than income. The definition implies that, in an inclusive growth environment, the welfare of excluded people improves faster than the average income in the country.

These definitions of inclusive growth show a lack of unanimity. The authors of this report define inclusive growth as broad-based growth in income that is shared by every member of society (i.e., growth benefitting everyone in the economy) or growth that reduces inequality, or a combination of both.

#### 3.2 Measuring inclusive growth

The lack of consensus in defining inclusive growth results in various approaches for measuring inclusive growth. Unlike the several definitions provided above, only a few studies have operationalized the definition and measure inclusive growth. There are four approaches to measuring inclusive growth in the literature, namely, the unified measure of inclusive growth, dashboard indicators, a single score index and an inclusive growth analytic framework. Although each approach has its own merits, the inclusive growth measure based on utilitarian social welfare function that integrates both the growth and equity dimension in a unified framework is more appealing. The other approaches to measuring inclusive growth are too broad and could be considered a measure of inclusive development. In addition, the unified measure is less data-intensive and can easily be used for comparison across countries. This study provides a review of other approaches of measuring inclusive growth used in the literature in (see appendix A). Discussed below is the unified measure of inclusive growth based on a utilitarian social welfare function Ali and Son (2007) and adapted in Anand and others (2013).

Unified measure of inclusive growth based on utilitarian social welfare function

Ali and Son (2007) provided a framework for measuring inclusive growth based on social opportunity function analogous to social welfare. Anand and others (2013), drawing on previous work by Ali and Son (2007), adapted the measure focusing on income and its distribution. The measure is based on a generalized concentrations curve, the social mobility curve,  $S^c$ , such that:

$$S^{C} \approx (y_{1}, \frac{y_{1}+y_{2}}{2}, \dots, \frac{y_{1}+y_{2}+\dots+y_{n}}{n})$$
 (1)

with an underlying function  $W = W(y_1, y_2, ..., y_n)$  that satisfy two properties. It is increasing in its argument capturing growth dimension and satisfies the transfer property capturing the distribution dimension. The letter *n* is the number of persons in the population with incomes  $y_1, y_2, ..., y_n$ , where  $y_1$ , where  $y_1$  is the poorest person and  $y_n$  is the richest person.

The  $S^c$  is used to calculate an index, namely, the social mobility index, defined as the area under the  $S^c$ , that is:

$$\bar{y}^* = \int_0^{100} \bar{y}_i \, d_i \tag{2}$$

The greater the  $\bar{y}^*$ , the greater the income. Any deviation of  $\bar{y}^*$  from  $\bar{y}$  implies inequality of income distribution. Based on this, Ali and Son (2007) derive Eq. (3), which they refer to as the income equity index.

$$\omega = \frac{\bar{y}^*}{\bar{y}} \tag{3}$$

The value of the income equity index is equal to one when the income distribution is totally equal (i.e., everyone possesses the same income,  $\bar{y}$ ), and zero when it is totally unequal (i.e., one person possesses the entire income). Rearranging Eq. (3) yields Eq. (4):

$$\bar{y}^* = \omega. \, \bar{y} \tag{4}$$

Differentiating the function in Eq. (4) yields Eq. (5):

$$d\bar{y}^* = \omega.\,d\bar{y} + d\omega.\,\bar{y} \tag{5}$$

This implies that inclusive growth requires income growth and/or increasing equity. Growth is more inclusive if  $d\bar{y}^* > 0$  and depends on the sign and magnitude of the two terms denoting income growth and equity. Eq. (5) shows that change in the social mobility index is a weighted average of the change in the income equity index and of the change in average income, whose weights are the level of the counterpart. When the average income (equity) is high, the contribution of change in equity (income) is higher, and vice versa.

Rearranging equation (5) yields Eq. (6), which integrates growth and equity into one measure of inclusive growth (percentage change in  $\bar{y}^*$ ). It also decomposes inclusive growth into growth and percentage change in equity, measured by  $\omega$ .

$$\frac{d\bar{y}^*}{\bar{y}^*} = \frac{d\bar{y}}{\bar{y}} + \frac{d\omega}{\omega} \tag{6}$$

The main advantage of this measure is that it integrates both growth and equity. This study, as in Anand and others (2013), uses the growth in  $\bar{y}^*$ , a measure of inclusive growth to measure the inclusivity of growth in Africa and as a dependent variable in the authors' regressions.

# 4. Inclusive growth in Africa: descriptive results

Given the above description on the recent performance of growth in the continent, together with the income distribution observed during the same period, a logical question follows: how inclusive has Africa's growth been? This section describes the current level of inclusive growth in Africa.

The level of inclusivity of growth in Africa is computed using the approach discussed in section 2, following Ali and Son (2007) and Anand and others (2013). Owing to limitations in the availability of data, mainly data on income distribution, all African countries are used that have at least two data points that could enable the computation of an inclusive growth indicator. On the basis of this criterion, there are 42 countries that satisfy the data points, and for each one the inclusive growth is computed. The inclusive growth in Africa is then computed by taking the unweighted average of the inclusive growth of individual countries in the sample.

The authors' findings indicate that growth in Africa is slightly inclusive, with an inclusive growth rate of 0.246. The inclusivity in growth was driven in large part by growth in income (GDP per capita growth of 0.215) and slight improvements in income distribution (0.031). This is consistent with the discussion contained in section 3, in which Africa registered spectacular growth but a slight decline in income inequality. The inclusive growth results at the country level show variations in inclusivity of growth. In the sample, there are five countries (Burundi, Côte d'Ivoire, Guinea-Bissau, Madagascar and Togo) where inclusive growth.



Figure 4.1: Inclusive growth in selected African countries, 1990-2014

*Note:* GDPpcPPP is GDP (at purchasing power parity) per capita growth. *Source:* Authors' computations.

#### Inclusive growth in Africa by subregion

Growth was more inclusive in all subregions, but with significant variations among them. It was less inclusive in Central Africa and North Africa, while it was more inclusive in West Africa, East Africa and Southern Africa (see figure 4.2). It was least inclusive in Central Africa (with IG=0.095 during the 1990-2014 period) owing to widening income equity, notwithstanding growth in per capita income in the subregion. In North Africa, the inclusive growth was 0.127, due mainly to growth in per capita income, together with slight improvements in income distribution during the same period.

Notwithstanding the increase in income equity growth by approximately 3.4 per cent, growth was inclusive in Southern Africa owing to good economic growth during the period 1990-2014. Improved economic growth in terms of per capita income and improvements in the income equity led to more inclusive growth in East Africa (IG=0.287). Similarly, West Africa achieved inclusivity in growth, driven mainly by growth in per capita income and improvements in income equity.

#### Inclusive growth in Africa by economic grouping

Growth was more inclusive in mineral-poor countries than in oil-importing and oilexporting economies. Mineral-rich economies registered the least inclusive growth during the 1990-2014 period. In mineral-poor economies, higher growth performance in terms of GDP per capita and improved income equity led to more inclusive growth, while oil-importing economies also achieved more inclusive growth owing to better economic growth, notwithstanding widening income equity.



Figure 4.2: Inclusive growth by subregion in Africa, 1990-2014

*Note:* GDPpcPPP is GDP (at purchasing power parity) per capita growth.

Source: Authors' computations based on data from the 2017 world development indicators of the World Bank.



Figure 4.3: Inclusive growth by economic group, 1990-2014

*Note:* GDPpcPPP is GDP (at purchasing power parity) per capita growth. *Source:* Authors' computations based on data from the 2016 world development indicators of the World Bank.

#### Inclusive growth in Africa: country-level result

An inclusiveness matrix is used, which shows inclusiveness of growth in a sample of African countries (see figure 4.4). The first quadrant in the figure (upper right) shows countries that registered inclusive growth, both through a rise in average income per capita and equity. Notably, countries such as Burkina Faso, Ethiopia and Mali recorded greater inclusiveness owing to improvements in GDP per capita growth and in equity. Uganda registered greater inclusiveness by ensuring more equity growth and marginal growth in per capita GDP.

In the second quadrant (upper left), inclusivity of growth depends on the magnitude of the inclusive growth components (GDP per capita growth and equity growth). Given that equity growth is negative, growth is inclusive if the GDP per capita growth is higher than the absolute value of equity growth. Two countries (Burundi and Madagascar) are found in the second quadrant. In Burundi, the marginal growth in GDP per capita could not compensate for the widening of inequality. Consequently, growth is non-inclusive. Similarly, both the limited GDP per capita growth and slight worsening of inequality resulted in non-inclusive growth in Madagascar.

The third quadrant (lower left) clearly indicates non-inclusiveness of growth in the countries, given that both GDP per capita growth and equity growth are negative. Côte d'Ivoire and Guinea-Bissau are found in this quadrant, which indicates that growth is non-inclusive owing to largely contracting GDP per capita growth and a slight widening of equity.

#### Figure 4.4: Inclusiveness matrix for a sample of African countries



Source: Authors' computations based on data from the 2016 World Development Indicators of the World Bank.

In the fourth quadrant (lower right), inclusivity of growth depends on the magnitude of the inclusive growth components (GDP per capita growth and equity growth). Given that the GDP per capita growth is negative, growth is inclusive if the equity growth is higher than the absolute value of GDP per capita growth. There are several countries that registered inclusive growth and countries that have become less inclusive. For example, Mozambique and Rwanda are clearly inclusive owing to higher growth in equity, notwithstanding a slight contraction in GDP per capita. In these countries, inclusivity is achieved by ensuring high growth that benefits all, even if it benefits those at the top income quintiles to a greater extent. By contrast, countries such as Benin and Togo are non-inclusive, given that the reduction of equity eclipsed the marginal GDP per capita growth in these countries.

## 5. Drivers of inclusive growth in Africa: conceptual framework, econometric model and estimation results

There is limited empirical evidence on inclusivity of growth and its determinants. The authors' review found that most of the studies focus on Asia (Ali and Son, 2007; Anand and others, 2013; Balakrishman and others, 2013; Aoyagi and Ganelli, 2015). A few studies, such as Ncube (2015) and Hakimian (2013), measured inclusiveness of growth in Africa on the basis of a single index approach. They did not, however, measure inclusive growth in a unified framework and, importantly, they did not discuss the factors that correlate to inclusive growth in Africa.

In order to investigate the drivers of inclusive growth, the conceptual framework is first presented, which reveals the link between several factors and inclusiveness of growth. The authors' econometric model is specified on the basis of the conceptual framework. The model was then estimated using aggregate data from sample of African countries. Lastly, the estimation results is presented and discussed.

## 5.1 Conceptual framework on drivers of inclusive growth

Inclusive growth depends on both income growth and improving equity, as discussed in section 2.1 and given in Eq. (6)  $\frac{d\overline{y}^*}{\overline{y}^*} = \frac{d\overline{y}}{\overline{y}} + \frac{d\omega}{\omega}$ .

Given the above equation, it is possible to derive a conceptual framework for inclusive growth, which can be summarized as in Eq. (7) below.

$$\frac{d\overline{y}^*}{\overline{y}^*} = F(\overline{y}, \omega) \tag{7}$$

Where  $\frac{dy}{y^*}$  is the inclusive growth,  $\overline{y}^*$  is the per capita income and  $\omega$  is the income equity index. Inclusive growth is a function of economic growth and economic distribution, which both, in turn, depend on policy and non-policy factors. For example, government expenditure on infrastructure tends to raise growth and government expenditure on social protection tends to improve income distribution. Government policies could therefore affect inclusiveness of growth. In view of this, it is important to acknowledge that the inclusiveness of growth is influenced by a host of policy and non-policy factors that affect economic growth is given schematically in figure 5.1.



#### Fig 5.1: Conceptual framework of inclusive growth drivers

#### 5.2 Econometric model

In the light of the conceptual framework above, the baseline specification follows a standard cross-country growth regression model, with inclusive growth indicator

 $(\frac{d\overline{y}^*}{\overline{y}^*}_{it})$  as a dependent variable and a set of regressors that affect growth and inequality (common in economic growth and economic inequality literature) as independent variables to explain the factors behind inclusiveness in growth. Formally, the model is given in Eq. (8).

$$\frac{d\overline{y}^{*}}{\overline{y}^{*}_{it}} = \alpha_{i} + \tau_{t} + \beta_{1} y_{it_{0}} + \gamma X_{it} + \varepsilon_{it}$$

$$\tag{8}$$

Where  $\frac{d\overline{y}^*}{\overline{y}^*}_{it}$  is the inclusive growth measure for country *i* at time *t*.  $X_{it}$  is vector of regressors that affect growth and inequality. These set of regressors include initial GDP per capita in purchasing power parity ( $y_{it_0}$ ), education, investment (fixed investment), trade openness, inflation, GDP volatility, foreign direct investment (FDI), official development assistance (ODA), ICT, financial deepening (credit to GDP), indicators of institutions and governance, natural resource rent and abundance, dummies for economic grouping, and others. The country fixed effect is represented by  $\alpha_i$ ,  $\tau_t$  is the unobserved time effects and  $\mathbf{E}_{it}$  is the error component that varies across both countries and years.

The econometric model presents inclusive growth as conditional on alternative sets of macroeconomic policy variables, while controlling for initial conditions and other non-policy variables. A set of regressors was included that affect growth and inequality (common in economic growth and economic inequality literature) as independent variables. The choice is based on the view that a combination of both macroeconomic policies and non-policy factors could affect the inclusivity of growth. Given that inclusive growth is measured over two periods, it is most likely to be affected by conditions during that period. Consequently, the average values of regressors are used in Eq. (8) to address this situation.<sup>3</sup>

#### Initial GDP per capita

The contribution of capital accumulation to growth is limited owing to the phenomenon of diminishing marginal returns to all forms of reproducible capital. Accordingly, countries that are poorer grow faster than richer ones. This is often referred to as the convergence hypothesis in the growth literature. In line with the convergence hypothesis, the initial GDP per capita in PPP ( $\mathcal{Y}_{it_0}$ ) was therefore included.

#### Investment

The impact of investment in both physical and human capital on growth is widely acknowledged in the endogenous growth models. In these models, technical change and human capital development are endogenous and respond to incentives in the economy. Policies could therefore alter saving and investment rates that may influence growth. In view of this and existing empirical evidence on the effect of investment on growth (Levin and Renelt, 1992; Barro, 1996, 2000), investment is included as a regressor. Anand and others (2013) found that fixed investment contributed positively to inclusivity of growth in emerging economies.

#### Education

Human capital is often regarded as the knowledge and skills embodied in a labour force. Barro (1991) showed that human capital affected output through improved productivity and efficiency of the labour. Consequently, the authors controlled for human capital in their model, using secondary enrolment. In the Philippines, Ali and Son (2007) pointed to the importance of spending on health and education for fostering inclusion. Anand and others (2013) and Balakrishman and others (2013) reported that a higher proportion of educated workforce contributed to inclusivity of growth.

#### Fiscal policy

The role of Government in economic growth has been controversial. On the one hand, high government spending requires either an increase in taxation or deficit financing, which could imply a high level of resource use distortion or more crowding out of private activities. Consequently, government consumption negatively affects growth. On the other hand, government expenditure on capital positively affects growth through the provision of infrastructure and other public goods that are necessary for economic growth, given that such spending complements private investment. Moreover, government expenditure on transfers and to local government for infrastructure such as roads and education improves physical and human capital, which affect growth positively. In terms of distribution, government spending through transfers and subsidies may reduce inequality if effectively targeted to the low-income or poor group. However, government transfers and subsidies that distort prices in the economy have a negative effect on growth and, if not effectively targeted to the poor, could worsen the inequality.

<sup>&</sup>lt;sup>3</sup> The authors are aware that, because conditions over the two periods are also affected by changes in inclusiveness of growth, the direction of causality might be ambiguous. As a result, the initial values of regressors were alternatively used, but owing to few observations, it was not possible to find and report meaningful results.

Previous studies on the effect of fiscal policy on inclusive growth are mixed. On the one hand, in studies such as Okun (1975), it was argued that there was a trade-off between growth and equality. As a result, fiscal redistributive growth could hinder growth, given that redistribution through taxes and subsidies could dampen the incentive to work and invest. On the other hand, in studies such as Benabou (2000) and Saint-Paul and Verdier (1993), it was pointed out that fiscal policies that increased health and education spending benefit the poor, while enhancing growth through improved human capital. Importantly, Ostry and others (2014) concluded that the combined direct and indirect effects of income redistribution were, on average, pro-growth. Similarly, the Organization for Economic Cooperation and Development (2014) also concluded that well-designed redistribution policies such as tax and transfer policies did not harm growth. These findings appear to justify the use of fiscal redistribution as a policy tool to foster inclusive growth. Aoyagi and Ganelli (2015) also found that redistributive fiscal policies played a positive role in fostering inclusive growth in Asia.

#### Monetary policy

There is scarce literature that connects monetary policy to the issue of inclusive growth. Monetary policy effects on inclusive growth are either through economic growth or income distribution. Inflation worsens income distribution, given that low-income households have more cash and fewer financial assets than high-income households. Monetary policy that maintains price stability could therefore contribute to inclusive growth through improving distribution (Coeuré, 2012). In addition, price stability could be conducive to economic growth that improves inclusivity of growth, given that stable prices signal less market uncertainty, which attracts investment and, therefore, promotes growth. By contrast, Coibion and others (2012) argued that contractionary monetary policy could increase inequality. Macroeconomic instability in terms of inflation and output volatility hamper the inclusivity of growth (Anand and others, 2013). The empirical evidence on the role of monetary policy on inclusive growth therefore remains unsettled. Consequently, indicators were included to capture the effect of monetary policy on inclusive growth.

#### Trade policy

An indicator of trade openness in the regressors is also included. It is argued in a large body of literature that trade openness improves growth through static and dynamic efficiency gains. Trade openness reduces distortions in the economy, improves resource allocation and reduces rent-seeking and unproductive activities. More open trade could increase the diversity of intermediate inputs that yield higher total factor productivity, which affects growth positively. More open trade could also bring advantages of economies of scale, technology transfer and other positive externalities that affect growth positively. Previous empirical findings show mixed results of the effect of trade openness on growth. Harrison (1995) reported a negative effect on growth, while Frankel and Romer (1996) found a positive effect on growth. Levin and Renelt (1992) argued that the results were fragile and lacked robustness owing to dependence on the inclusion or exclusion of control variables in the model.

Barro (2000) and Lundberg and Squire (2003) suggested that, where there is greater openness to trade, there is higher inequality. More recently, however, Aoyagi and Ganelli (2015) found trade openness playing a role in fostering inclusive growth in Asia. Similarly, the international Monetary Fund (2007) reported that trade globalization

was associated with a reduction in inequality, as opposed to financial globalization, which is associated with an increase in inequality. This would appear to suggest that a policy of careful sequencing, in which barriers to trade are reduced before complete financial account liberalization, would allow the benefits of globalization to be shared more equally.

#### Financial development

There are several studies that investigate the effect of financial development on economic growth and inequality. The consensus is skewed towards those that suggest that financial development improves growth (Levin, 2005; Panizza, 2013). Financial development could, however, harm income equality (International Monetary Fund, 2007). Financial development could affect growth at least through two channels: the capital accumulation and the total factor productivity channels. In the capital accumulation channel based on Gurley and Shaw (1955), the financial sector is able to mobilize savings and channel it into investment in the productive sector, thereby leading to increased capital accumulation and output growth. In the total factor productivity channel, the financial sector through financial innovations reduces informational asymmetries that hinder the efficient allocation of financial resources and monitoring of investment projects (Townsend, 1979; Greenwood and Jovanovic, 1990; King and Levine, 1993). In an empirical study in India, Balakrishman and others (2013) found that financial openness significantly and positively affects inclusive growth. Financial repression (i.e., low or negative real interest rates) discourages saving, leading to low growth. The authors controlled for the effect of financial development in the economy.

#### **Financial flows**

The existing evidence on the effect of FDI on growth is less ambiguous, at least for the African case (Adams, 2009; Sukar and others, 2011). The effect of ODA to growth, however, is mixed, with abundant literature containing arguments for and against its role in promoting growth. The evidence on the effect of FDI and ODA on inequality is scarce.

The stock of FDI to Africa increased from \$9.6 to \$54 billion during the period 2000-2014. This increase in FDI effectively fuels growth and increases government revenue, although it may exacerbate inequality if directed towards highly capital-intensive sectors that create few new jobs. Nevertheless, the rise in government revenue could be used to increase social spending that promotes human development and reduce inequality, leading to improvements in inclusivity of growth. Anand and others (2013) reported that FDI fostered inclusive growth in emerging economies. FDI is therefore expected to affect inclusive growth at least through the growth channel, while ODA is expected to influence both growth and distribution through pro-poor expenditure allocations.

The literature on growth contains discussions on the role of FDI and ODA, with mixed evidence. A positive impact on growth of FDI inflows is conditional on having a minimum level of human capital in an economy (Barro, 2001). The role of aid has been controversial in the literature, and results of a recent meta-analysis also confirm the unsettled results (Tarp and Mekasha, 2013; Doucouliagos and Paldam, 2008).

#### Information and communications technology

The role of ICT on growth has become widely recognized. Africa has seen a proliferation of ICT since the turn of the millennium. Mobile subscription increased from 12.4 per cent in 2005 to 80.8 per cent of the population in 2016, while Internet use per 100 people increased from 2.4 in 2005 to 25.1 per cent in 2016.<sup>4</sup> Indeed, there are several good cases of ICT development in Africa (Chavula, 2014), such as mobile banking (M-pesa) and insurance for farmers (Kilimo Salama) in East Africa, and smart apps used in the health sector (for tracking and preventing malaria and remotely diagnosing patients with the help of health extension workers), the education sector (in providing distance learning opportunities) and agricultural and other businesses (providing weather and market information). The improved flow of information in markets owing to ICT lowers transaction costs and raises efficiencies in the market, which eventually improves growth in the economy. Zhuang and others (2014) documented how key drivers of rapid growth, such as technological progress, globalization and marketoriented reforms, had also increased inequality in the developing regions of Asia by favouring skilled over unskilled labour, capital over labour and urban and coastal areas over rural and inland regions. Similarly, Anand and others (2013) could not find a significant effect of ICT on inclusive growth. The authors therefore verified whether there were effects of ICT development in Africa on the inclusivity of growth.

#### Institutions and governance

It is also acknowledged in the literature that institutions fundamentally matter for both growth and the redistribution of resources (Acemoglu and others, 2005). By influencing the economic incentives of society, economic institutions (e.g., property rights, regulatory institutions and institutions for macroeconomic stability) have an impact on economic performance. They also contribute to the efficient allocation of resources and determine the distribution of benefits and resources (i.e., physical and human capital). Society, mainly politically powerful groups, make choices on economic institutions. Political power is, in turn, determined by political institutions. Political institutions therefore directly or indirectly affect economic institutions and, ultimately, economic performance and resource distribution. In view of this, indicators were included to control for the role of institutions in inclusive growth.

#### Dummies for economic grouping and others

Lastly, the authors control for the economic grouping of countries using dummies. Countries that are resource-poor may have a better policy environment and manage to diversify from resource dependence into manufacturing and services (Collier, 1997). This ensures robust economic growth that may translate into better inclusive growth. A natural resources boom could create a disincentive for other sectors, which may lower economic growth. Sachs and Warner (1995) provided empirical evidence of a negative correlation between natural resource dependence and economic growth.

<sup>&</sup>lt;sup>4</sup> International Telecommunication Union, World telecommunication/ICT indicators database. Available from http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.

### 5.3 Econometric results

The authors estimate a cross-country regression of inclusive growth in Africa (see table 5.1). Negative and statistically significant effects of initial GDP per capita were observed. This result is consistent with the conditional convergence hypothesis that implies that poorer economies tend to grow faster than richer ones. In this case, countries with a low income can become more inclusive than those beginning from a high level of income, at least through the higher growth rate that they could achieve.

The authors' analysis shows that investment is an important factor that affects inclusive growth in Africa. An increase in investment by a percentage point enhances inclusive growth by 0.4 percentage points, which is statistically significant at a 1 per cent level of significance. This indicates that an increase in investment in Africa leads to higher growth, which could contribute to inclusivity in growth. This is also consistent with findings in Aoyagi and Ganelli (2015) and Anand and others (2013) for Asia. The average investment level in the sampled economies is 20.5 per cent, which is lower than the average investment in the low-income and middle-income countries (29 per cent). Increasing the investment level to the average levels of low-income and middle-income economies could foster inclusive growth by between 1.7 and 3.4 percentage points. Enhancing investment requires economic and institutional reforms, improving the business environment and tackling investment constraints such as infrastructure and human capital.

Interestingly, positive and significant effects of government consumption on improving inclusivity of growth were found. A percentage increase in government consumption leads to approximately a 0.27 percentage point increase in growth inclusivity, keeping other things constant. This suggests that fiscal policy could be used to encourage inclusive growth. Aoyagi and Ganelli (2015) found similar results, although their measure of fiscal policy (redistribution, which is the difference between the Gini index for market and net inequality) is different than the authors'. This is possible because government expenditure on capital positively affects growth through the provision of infrastructure and other public goods that complement the private investment and that are necessary for economic growth. In addition, government expenditure on transfers for education and health to local governments improves human capital, which affects growth positively. In terms of distribution, government spending that effectively targets the poor through subsidies could reduce inequality, while raising government consumption, Countries should be careful in the source of finance (tax and deficit financing) and the efficiency and effectiveness of the spending.

The result indicates a positive and statistically significant effect of inflation on inclusive growth. A percentage point rise in the inflation rate leads to approximately a 0.08 percentage point improvement in growth inclusivity. Intuitively, loose monetary policy (low policy rates) encourage investment, given that affordable credit is widely available, which could have an impact on growth. The result therefore suggests that loose monetary policy is helpful in fostering inclusive growth. Caution is in order, however, given that higher inflationary pressure could lead to overheating of the economy and, beyond some level, could lead to economic slowdown, as observed in several hyperinflation occurrences throughout the world. To capture the overall macrostability effects on inclusive growth, GDP volatility, which is insignificant, was included

No significant effect of trade openness on inclusive growth across different specifications was observed. This is not surprising, given that the effects of trade are not automatic and require an enabling environment and complementary policies to realize the benefits. Moreover, the primarily raw material exports and limited diversification observed in Africa could also marginalize the benefit to be reaped from trade openness.

To capture the effects of financial sector deepening, domestic credit by private sector from banks as a per cent of GDP was included. The result shows that private bank credit has an insignificant effect on inclusivity of growth. This is not surprising in Africa, given that the average level of private sector credit in 2015 was 20 per cent of GDP, which is very low, compared with those of low-income and middle-income countries (95.6 per cent of GDP). In addition, in a time series investigation, Demetriades and James (2011) found no significant effect of bank credit on GDP growth. Alternatively, the authors also used interest rate spread, which gauges the efficiency and competitiveness of the financial institutions in the economy. A significant negative correlation was found between interest rate spread and inclusive growth. A percentage point increase in the interest rate spread, suggesting less efficient and less competitive financial institutions, leads to a worsening inclusive growth by approximately a 0.018 percentage point. The result indicates that the low level of financial deepening is a hindrance to more inclusive growth in Africa. The average interest rate spread in this study is 13.2 per cent, which was twice as high as those in the low-income and middle-income countries in 2015. As discussed in the previous section, financial development could affect growth at least through two channels, the capital accumulation and the total factor productivity channels. The authors' result appears to support the effect of financial development through the total factor productivity channel, in which the efficiency and competitiveness of the financial institutions could result in financial innovations that reduce informational asymmetries and foster the efficient allocation of financial resources and monitoring of investment projects in growth-enhancing activities.

Two measures of financial flow into the economies (FDI and ODA) were included. The result indicates no significant effect of both FDI and ODA on inclusivity of growth. This may be due to the FDI flows that concentrate on specific sectors and business activities that produce low employment opportunities. For example, the largest FDI flows in 2015 by capital investment were in coal, oil and natural gas (accounting for 24 per cent of FDI) and extraction (accounting for 23 per cent of FDI). In addition, it was found in earlier studies that the impact of FDI on growth is weak in Africa (Sukar, Ahmed and Hassan, 2011; Rodrik, 1999) and the effect of aid on growth is controversial (Mekasha and Tarp, 2013; Doucouliagos and Paldam, 2008). Addison and Heshmati (2003) argued that FDI in mining has limited multiplier effects on output and employment in the rest of the economy. Moreover, the positive effect of FDI on growth is subject to the available human capital. Barro (2001) found a positive impact of FDI through improvements in productivity, which is conditional on threshold effects of human capital. He also found that the growth contribution of FDI exceeded that of domestic investment only when the host country's average secondary school attainment exceeds 0.52 years (for the male population of working age). This level is far above that of most African countries. Within Africa, Lumbila (2005) found a similar threshold effect using secondary enrolment rather than attainment rates. He also found that returns to FDI were significantly higher in countries with secondary enrolment rates exceeding 25 per cent.

In addition, proxies (the subscription of broadband per 100 people and Internet users per 100 people) were included to understand the role of ICT in inclusive growth. A significant and positive effect on inclusive growth was observed. The subscription to broadband Internet and to general Internet use by a percentage point improves inclusive growth by 0.196 and 0.015 percentage points, respectively. Currently, the average Internet penetration rate in Africa is the lowest in the world, at 27.7 per cent.<sup>5</sup> ICT accessibility can contribute by opening economic opportunities, improving information flows that enhance efficiency and helping isolated communities to engage in commerce and generate higher incomes.

The role of institutions and resource rent and resource abundance were investigated. Positive and significant effects of the Ibrahim Index of African Governance were found. Countries with better governance demonstrate more inclusive growth. On average, a one-point rise in the Index leads to an improvement of inclusive growth by approximately a 0.007 percentage point. This is in line with the improved governance and institutions recently observed on the continent. For example, the governance and institution indicators (such as the Index of African governance, the POLITY index, etc) showed an improvement between 2000 and 2014 (see appendix A). Institutions that address market failures (e.g., governance reforms to strengthen property rights), facilitate competition in the markets and ensure the rule of law could encourage investment and enhance employment and productivity that eventually raises growth. The Government, through its institutions, could enact policies that promote sustained growth and curb economic inequalities. Zhuang and others (2010) found that countries in developing regions of Asia with above-average good governance (in terms of effective Government, regulatory quality and the rule of law) grew faster than those below the average.

	1	11	111	IV	V	VI
Initial GDP per capita	-0.383***	-0.194**	-0.225***	-0.239***	-0.206***	-0.250***
	(0.087)	(0.073)	(0.074)	(0.076)	(0.071)	(0.076)
Investment	0.430***	0.241**	0.238*	0.243**	0.221**	0.280***
	(0.123)	(0.094)	(0.116)	(0.095)	(0.078)	(0.084)
Government consumption	0.267*	0.322***	0.344***	0.360***	0.306***	0.407***
	(0.136)	(0.098)	(0.112)	(0.096)	(0.100)	(0.092)
GDP volatility	0.036	0.115	0.119	0.091	0.111	0.129
	(0.065)	(0.080)	(0.084)	(0.084)	(0.083)	(0.077)
Trade openness	-0.087	-0.099	-0.070	-0.112	-0.103	-0.166
	(0.143)	(0.166)	(0.174)	(0.156)	(0.162)	(0.150)
Natural resource rent	-0.018	0.047	0.098	0.087*	0.086**	0.057*
	(0.046)	(0.033)	(0.062)	(0.044)	(0.039)	(0.031)
Inflation	0.080***	0.137***	0.145***	0.133***	0.133***	0.168***
	(0.027)	(0.023)	(0.028)	(0.022)	(0.022)	(0.030)
FDI	0.079	-0.030	-0.100	-0.067	-0.029	-0.003
	(0.078)	(0.097)	(0.129)	(0.098)	(0.095)	(0.099)
ODA	-0.298***	-0.098	-0.072	-0.111	-0.100	-0.093
	(0.090)	(0.067)	(0.064)	(0.069)	(0.062)	(0.069)

#### Table 5.1: Determinants of inclusive growth: cross-country regression

<sup>5</sup> Internet World Stats. Available from www.internetworldstats.com.

	I	Ш	Ш	IV	v	VI
Interest rate spread		-0.018***	-0.020***	-0.017***	-0.017***	-0.022***
		(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Private sector credit		-0.000	-0.001	-0.002	-0.001	0.001
		(0.003)	(0.002)	(0.003)	(0.003)	(0.002)
Broadband subscription per 100 people			0.196*			
			(0.096)			
Internet users per 100 people				0.015*		
				(0.008)		
lbrahim Index of African Governance					0.007*	
					(0.004)	
Mineral-poor (=1)						0.154**
						(0.070)
Constant	1.922**	0.513	0.491	0.816	0.245	0.670
	(0.885)	(0.770)	(1.055)	(0.824)	(0.758)	(0.745)
Observations	38	32	29	32	32	32

*Note:* Standard errors in parentheses, \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. The dependent variable is inclusive growth.

Significant and positive effects of natural resource rent on inclusivity of growth were observed. A percentage point rise in the rent from natural resources could improve inclusive growth by a 0.057 percentage point.

Mineral-poor countries are more inclusive in instituting growth than mineral-rich countries on the continent. Countries that are mineral-poor have better inclusive growth of approximately 0.154 percentage points higher than mineral-rich economies. This may be due to relatively more productive employment opportunities created in mineral-poor economies, given that such economies with strong policy environment have significantly diversified into manufacturing and services (Collier, 1997), and these sectors provide more productive employment opportunities than in the mineral sector.

#### Robustness checks and estimation challenges

To complement the cross-country regression, an unbalanced panel of 48 African countries was estimated (see table 5.2). The result corroborates some of the findings in the cross-country analysis. A significant effect of investment was observed in fostering inclusive growth. Similarly, significant and positive effects of expansionary fiscal and monetary policies on inclusive growth were observed. ODA encourages inclusive growth. A positive correlation was found between alternate measures of institutions and inclusive growth. In an alternate specification in table 5.2, column (I), government consumption, encourages inclusive growth, while tax revenue (percentage of GDP) negatively affects inclusive growth. The implication of the latter may be that the tax system (progressive or regressive) intervenes in both the pace and the distribution of growth (the distribution of growth benefits). In the panel regression, the structure of the economy correlates with inclusivity of growth. Industry value added (percentage

of GDP) positively and significantly affects inclusive growth. No significant effect of education on inclusivity of growth was found, which possibly reflects the few observations in the data.

In sum, the authors' econometric results provide evidence of the role of macroeconomic policies (fiscal and monetary) and the role of institutions and governance and other factors, such as ICT and natural resource rent, in affecting the inclusive growth in Africa.

Table 5.2: Determinants	s of inclusive	growth:	panel	regression
-------------------------	----------------	---------	-------	------------

	1	II
Investment	0.017	0.038***
	(0.026)	(0.013)
Government consumption	0.077**	0.021
	(0.034)	(0.016)
Tax revenue	-0.045**	-0.015
	(0.022)	(0.013)
Trade openness	0.045*	-0.016
	(0.026)	(0.014)
GDP volatility	0.012	
	(0.014)	
Inflation	-0.001	0.001***
	(0.001)	(0.001)
Domestic private sector credit	-0.018	0.011
	(0.015)	(0.007)
Gross enrolment rate (secondary education)	0.008	
	(0.015)	
Industry value added		0.001**
		(0.000)
Urban population		-0.000
		(0.000)
ODA		0.010*
		(0.006)
Ethnic and language fractionalization		0.082**
		(0.033)
Constant	-0.275**	-0.167***
	(0.125)	(0.056)
Observations	26	48

*Note:* Standard errors in parentheses, \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. The dependent variable is inclusive growth.

Owing to data limitations, mainly income inequality data and some macroeconomic indicators (such as education), it was not possible to estimate the model in Eq. (8.1) in several alternate specifications by including more regressors. Therefore, Eq. (8.1) was estimated as a cross-country regression model using least squares. Then, the analysis was complemented by estimating an unbalanced panel model in Eq. (8.1) using random effects.

In the cross-country regression model, observations used ranged between 29 and 38, depending on the regressors included in the specification. Given the small number of observations and a few explanatory variables, the authors' estimates could suffer from small sample bias. The authors' results are therefore suggestive of possible evidence of a correlation between the explanatory variable and inclusive growth. In the panel regression, there are a relatively good number of observations relative to the number of regressors used, which is 48. The authors' finding indicates that the results are almost same with cross-country results, which suggests the robustness of the authors' estimates.

## 6. Conclusions and policy implications

The main objective of this study was to measure the level of inclusive growth in Africa and examine the main factors that drive inclusive growth. There is increasing focus on the issue of inclusive growth, both in the academic and policy circles, with several definitions and alternate measurements suggesting a lack of unanimity. Inclusive growth is defined as broad-based growth in income, which is shared by every member of the society, (i.e., growth benefitting everyone in the economy) or growth that reduces inequality, or a combination of both.

In contrast with a few previous studies in Africa (Ncube, 2015; Hakimian, 2013) that relied on a composite index based on several indicators, this study provides the first set of results on the inclusivity of growth in Africa, which was measured using a unified measure of inclusive growth developed by Ali and Son (2007) and adapted in Anand and others (2013). Importantly, empirical evidence is presented on the factors that drive inclusive growth on the basis of a cross-country regression model to ensure shared prosperity and promote stability. This study can be compared with similar works in Asia that have used a similar approach in measuring inclusive growth (e.g., Anand and others, 2013; Aoyagi and Ganelli, 2013).

In Africa, an average annual growth rate of 4.8 per cent was observed during the period 2000-2015. Owing to this record growth, the continent is the second-fastest growing region, following East and South Asia, which has rekindled hope for prosperity. Africa, however, also has the second-highest level of income inequality in the world, following Latin America. From 2000 to 2014, the Gini index fell slightly, from 44.73 to 42.51. The current high level of inequality necessitates attention to address the problem. On average, inequality increased in 20 countries, whereas it fell in 17 countries in the sample that includes countries with at least two observations between 2000 and 2014. This implies that the rapid growth achieved during 2000-2015 did not translate into effectively reducing income inequality. The authors also examine the Kuznets (1955) hypothesis of an inverted U relationship between economic level of development and inequality in Africa and find no evidence that supports the hypothesis. Instead, they find a positive relationship between the two, with a correlation coefficient of 0.45. This suggests the link between recent growth and inequality, which raises the concern that improvements in economic growth may not reduce inequality.

Using the unified measure of inclusive growth, the level of inclusivity of growth in Africa is computed. The authors' findings indicate that growth in Africa is slightly inclusive, with an inclusive growth rate of 0.246. The inclusivity in growth was driven in large part by growth in income (GDP per capita growth of 0.215) and slight improvements in income distribution (0.031). This is consistent with the remarkable growth but slight decline in income inequality observed in Africa. There are variations in inclusive growth results at the country level, in which five countries (Burundi, Côte d'Ivoire, Guinea-Bissau, Madagascar and Togo) registered reduction of inclusive growth at various levels.

The authors' results indicate that investment, government spending, loose monetary policy, competitive and efficient financial institutions, better ICT infrastructure and better institutions foster inclusive growth in Africa. Consistent with the conditional convergence hypothesis, which implies that poorer economies tend to grow faster than richer ones, negative and statistically significant effects of initial GDP per capita on inclusive growth are found.

The authors' analysis shows that investment is an important factor that affects inclusive growth in Africa, which suggests the importance of promoting investment. Enhancing investment requires economic and institutional reforms, improving the business environment and tackling investment constraints such as infrastructure and human capital. In addition, it requires an increase in domestic resource mobilization through domestic savings, optimal taxation, cost sharing in the provision of public goods and enhancing public expenditure productivity.

The significant positive effect of government consumption on inclusivity of growth suggests the positive role of fiscal policy in fostering inclusive growth. This calls for an increase in government expenditure on capital, transfers on social sectors such as education and health and effective subsidies, while carefully calibrating the tradeoff between efficiency in spending and the source of its financing. An increase in government expenditure on capital raises the provision of infrastructure and other public goods that complements the private investment and that are necessary for economic growth. In addition, the rise in government expenditure on transfers to local governments for education and health could improve human capital, which will affect growth positively. In terms of distribution, government spending that effectively targets the poor through subsidies could reduce inequality. While raising government consumption, countries should be careful, both in the source of finance (tax and deficit financing) and the efficiency and effectiveness of the spending. Taxation or deficit financing could imply a high level of distortion in resource use or more crowding out of private activities. Government transfers and subsidies could also distort prices in the economy, which will adversely affect growth, and, if not effectively targeted to the poor, could worsen inequality.

The authors' findings indicate a positive and statistically significant effect of inflation on inclusive growth. Intuitively, loose monetary policy (low policy rates) encourages investment, given that affordable credit is widely available, which could have an impact on growth. Thus, the findings suggest that loose monetary policy is helpful in fostering inclusive growth. Caution should be taken in interpreting this result, however, given that a higher inflation level beyond a certain threshold negatively affects growth, leading to economic slowdown. The significant negative correlation between interest rate spread and inclusive growth indicates the importance of efficient and competitive financial institutions in the economy. The efficiency and competitiveness of the financial institutions could result in financial innovations that reduce informational asymmetries and foster the efficient allocation of financial resources and the monitoring of investment projects in growth-enhancing activities. African countries should therefore promote the development of a financial sector that fosters efficient and competitive financial institutions. Interestingly, a significant positive effect of ICT on inclusive growth has been observed. ICT accessibility can contribute by opening economic opportunities, improving information flows that enhance efficiency and helping isolated communities to engage in commerce and generate higher incomes. This suggests that the ICT infrastructure should be expanded and the use of ICT promoted.

The authors' findings indicate significant positive effects of institutions and governance on inclusive growth in Africa, suggesting the significance of establishing and promoting good institutions and governance. Efforts to address market failures (e.g., governance reforms to strengthen property rights) facilitate competition in the markets and ensure the rule of law will enhance investment and increase employment and productivity, which will eventually increase growth. African Governments, through their institutions, could enact policies that promote sustained growth and curb economic inequalities.

Overall, the econometric results provide evidence on the role of macroeconomic policies (fiscal and monetary), good institutions and governance and ICT in promoting inclusive growth in Africa. This implies that fostering inclusive growth is amenable to macroeconomic policies and other development interventions. Further research is recommended in order to focus on disaggregating the channels through which both fiscal and monetary policies affect inclusive growth.

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## **Appendix A**

#### Income mobility curve of individual countries

In the figures below, the inclusivity of growth is shown over time for individual countries included in the study using an income mobility curve. The vertical axis shows per capita income (in hundreds) and the horizontal axis indicates the cumulative share of population.



















Source: Authors' computation based on data from the 2015 World Development Indicators of the World Bank.

#### Approaches to measuring inclusive growth

#### Dashboard indicators

It should be recalled that the United Nations Development Programme (2015) considers growth to be inclusive if it takes place in the sectors in which the poor work (e.g., agriculture) and in places where the poor live (e.g., undeveloped areas with few resources), uses the factors of production that the poor possess (e.g., unskilled labour) and reduces the prices of consumption items that the poor consume (e.g., food, fuel and clothing). Similarly, Klasen (2010) suggests that an inclusive growth episode requires the following:

- (a) Positive per capita income growth rates;
- (b) Primary income (pre-tax earnings and self-employment income) growth rates for predefined, disadvantaged groups (e.g., ethnic minorities, backward regions, the income poor, rural areas and women) at least as high as growth rates for per capita incomes, indicating that such groups have been able to participate in the growth process at least proportionately;
- (c) Expansion of non-income dimensions of well-being that exceed that average rate for predefined disadvantaged groups. Non-income dimensions include schooling achievements; improvements in survival rates (e.g., inverse mortality rates for children under the ages of 1 and 5 years), improvements in nutritional status and access to transport, communications and household services (e.g., clean water, electricity and refuse removal). This would ensure that an income growth episode reduces disadvantages.

The above suggests that inclusive growth is a multidimensional concept. To measure this phenomenon, several indicators capturing the various dimensions must be used. Dashboard indicators, parallel to the dashboard in a car, are a set of indicators that are used to show these dimensions.

A positive aspect of this approach is that it captures both income and non-income dimensions. The negative aspect is that, owing to the large set of indicators required to measure and evaluate inclusive growth, the approach becomes scattered and data-demanding. In addition, often one may choose to focus only on some indicators, implicitly assigning zero weights to some of the dimensions/variables.

#### Single score index: the inclusive growth index

Another approach used in measuring inclusive growth is to construct an inclusive growth index (Ncube, 2015; Ramos and others, 2013; McKinley, 2010). Ncube (2015) computes the inclusive growth index ( $IG_i$ ) for each country as a geometric mean for that country of the standardized values for various indicators given in Eq. (A1):

$$IG_{i} = \sqrt[n]{S_{1i} + S_{2i} + \dots + S_{ji}}$$
(A1)

Where (i = 1, ..., m: country *i* included in the dataset), (j = 1, ..., n: indicator *j* included in the dataset) and is a standardized score for the rankings obtained in respect of indicator *j* for country *i*. Standardized scores are obtained using Eq. (8) for each indicator for each country.

$$S_{ji} = 100 * (\frac{m_j - r_j}{m_{j-1}})_i$$

(A2)

Where  $r_j$  is a country's rank in respect of indicator j in (descending order) and  $m_j$  is the total number of countries for which data for indicator  $S_j$  are available. This takes into account the variable number of countries for which data are available for specific indicators. Standardized scores obtained from the equation above take a maximum value of 100 (for the highest ranked) and 0 (for the lowest ranked) for each country for each indicator. All indicators are given equal weights (1/n) when computing the overall inclusive growth index ( $IG_i$ ).

An advantage of this approach is on its broader coverage of the inclusive growth outcome and process. The disadvantage is the difficulty in obtaining an informative interpretation of the result or the index. There are also elements of arbitrariness in selecting indicators and assigning weight for each indicator. For a critique on aggregating a set of indicators into a single index, see Ravallion (2001).

#### Inclusive growth analytics

As indicated above, for lanchovichina and Lundstrom (2009), inclusive growth is synonymous with absolute pro-poor growth<sup>6</sup> owing to improved productivity and new employment opportunities. They do not offer a specific measure of inclusive growth but rather focus on providing a framework to analyse the sources and constraints to sustained high growth for all economic groups. Their inclusive growth analytics involves three steps. First, undertake a background analysis that assesses the sources of growth and poverty and productivity and employment dynamics. Second, describe the profile of economic actors at various levels of disaggregation. Third, identify the constraints to inclusive growth for each economic actor. This approach is beneficial for identifying and prioritizing country-specific binding constraints to sustain high growth and reduce poverty. It does not allow for measuring the extent of inclusivity of growth and making comparisons among countries. In addition, it neglects the distributional aspects of income contrary to findings in Berg and Ostry (2011) that sustained growth also requires income equality.

Although each approach has its own merits, the inclusive growth measure based on utilitarian social welfare function that integrates both the growth and equity dimension in a unified framework is more appealing (see section 3), given that the other approaches are too broad and could be considered measures of inclusive development. In addition, the unified measure is less data intensive and can easily be used for comparison across countries.

<sup>&</sup>lt;sup>6</sup> Absolute pro-poor growth is growth that benefits the poor in absolute terms, which means an increase in income for the poor. Relative pro-poor growth is defined as growth that benefits the poor more than the non-poor. This occurs when the income of the poor increases faster than the non-poor. Detailed reviews of the concept of pro-poor growth are found in Ravallion and Chen (2003).

## Table A1: List of countries and inclusive growth and its components, 1990-2014

Country name	Income growth	Income equity growth	Inclusive growth	Remark
Angola	0.067	0.013	0.080	Inclusive
Benin	0.004	-0.007	-0.003	Inclusive
Botswana	0.384	-0.008	0.376	Inclusive
Burkina Faso	0.604	0.137	0.742	Inclusive
Burundi	-0.430	0.002	-0.428	Not inclusive
Cabo Verde	0.067	0.010	0.077	Inclusive
Cameroon	0.239	-0.031	0.208	Inclusive
Central African Republic	0.054	0.083	0.136	Inclusive
Chad	0.050	-0.005	0.045	Inclusive
Congo	0.019	-0.003	0.016	Inclusive
Côte d'Ivoire	-0.102	-0.040	-0.143	Not inclusive
Djibouti	0.328	-0.045	0.283	Inclusive
Democratic Republic of the Congo	0.026	0.000	0.026	Inclusive
Ethiopia	0.625	0.110	0.736	Inclusive
Gambia	0.011	0.003	0.014	Inclusive
Ghana	0.263	-0.047	0.216	Inclusive
Guinea	0.090	0.155	0.245	Inclusive
Guinea-Bissau	-0.140	-0.077	-0.217	Not inclusive
Kenya	0.013	0.097	0.109	Inclusive
Lesotho	0.424	0.122	0.546	Inclusive
Madagascar	-0.066	0.019	-0.047	Not inclusive
Malawi	0.183	0.192	0.376	Inclusive
Mali	0.574	0.184	0.758	Inclusive
Mauritania	0.263	0.173	0.436	Inclusive
Mauritius	0.039	0.000	0.039	Inclusive
Morocco	0.401	-0.011	0.390	Inclusive
Mozambique	0.628	-0.011	0.616	Inclusive
Namibia	0.037	0.005	0.042	Inclusive
Niger	0.103	0.016	0.119	Inclusive
Nigeria	0.529	0.031	0.559	Inclusive
Rwanda	0.640	-0.020	0.619	Inclusive
Sao Tomé and Principe	0.029	0.001	0.030	Inclusive
Senegal	0.153	0.154	0.307	Inclusive
Seychelles	0.302	-0.034	0.268	Inclusive
Sierra Leone	0.026	0.008	0.034	Inclusive
South Africa	0.253	-0.053	0.200	Inclusive
Swaziland	0.177	0.096	0.273	Inclusive
Тодо	0.006	-0.009	-0.003	Not inclusive
Tunisia	0.619	0.044	0.663	Inclusive
Uganda	0.746	0.000	0.746	Inclusive

Country name	Income growth	Income equity growth	Inclusive growth	Remark
United Republic of Tanzania	0.417	-0.021	0.396	Inclusive
Zambia	0.373	0.084	0.457	Inclusive
Total	0.215	0.031	0.246	Inclusive

Source: Authors' computation based on data from the 2017 world development indicators of the World Bank.

## Table A2: Summary statistics of the key variables used in the inclusive growth model

Variables	Mean	Standard deviation	Minimum	Maximum	Count
Inclusive growth	0.25	0.29	-0.43	0.76	41.00
Initial GDP per capita in purchasing power parity	3 150.85	3 605.31	454.88	18 340.83	41.00
Broadband subscription per 100 people	0.48	1.39	0.00	6.28	37.00
Spending on education (percentage of GDP)	17.04	5.08	6.90	26.23	39.00
External balance (percentage of GDP)	-7.66	10.98	-32.67	25.92	38.00
Foreign direct investment (percentage of GDP)	4.44	4.03	0.15	16.73	41.00
Fixed telephone	3.40	6.39	0.21	29.89	41.00
GDP per capita growth	2.21	2.09	-2.83	6.76	41.00
GDP per capita in purchasing power parity	3 575.10	4 080.15	646.29	19 664.95	41.00
Gross fixed capital formation (percentage of GDP)	19.89	7.13	7.12	44.23	38.00
Gini index	45.00	7.40	31.48	62.15	41.00
Government consumption (percentage of GDP)	15.33	5.73	6.03	34.25	38.00
Inflation rate	11.17	14.45	1.59	87.69	41.00
Net ODA (percentage of GDP)	10.76	7.75	0.32	31.10	41.00
Real effective exchange rate)	108.81	18.64	70.21	158.67	16.00
Tax revenue (percentage of GDP)	16.55	7.80	3.18	43.97	32.00
Index of African governance	57.53	10.40	37.07	84.57	41.00
Domestic private credit (percentage of GDP)	19.38	17.94	3.39	84.85	41.00
Internet use per 100 people	4.24	7.05	0.14	27.93	41.00
Interest rate spread	12.86	9.45	4.02	42.65	35.00
Natural resource rent (percentage of GDP)	12.15	14.94	0.01	68.23	41.00
Trade openness (percentage of GDP)	72.67	30.46	31.37	171.16	41.00
GDP volatility	3.79	2.32	0.73	10.95	41.00
Mineral-poor countries	0.51	0.51	0.00	1.00	41.00

Source: Authors' computation based on data from the 2017 World Development Indicators of the World Bank.