Breaking the Poverty Trap in Africa: A Comparative Perspective on Poverty Alleviation

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Abstract

An increasing number of African countries have recently registered improved rates of economic growth. Translating economic growth into poverty reduction, however, requires putting into place policies and institutions that promote a sustainable and shared economic growth process. The degree of success in poverty reduction depends largely on balancing the process of economic growth and the judicious pattern of income distribution so that an increasing share of the population benefits from the growth process and engages in more productive endeavors. Building the necessary policy and institutional framework to promote sustainable and shared economic growth is central in breaking the poverty trap and in initiating sustainable economic development. This article develops a political economy argument and demonstrates how successful poverty reduction are closely linked with pursuing economic policies that engage in increasing a segment of economic agents and develop the essential institutional arrangements to initiate sustainable economic development.

Introduction

African countries have exhibited relative improvement in their economic growth in the new millennium. Sub-Sahara African economies have registered on average a 2.29 percent annual growth rate in real per capita income from the year 2000 to 2015. Given the average growth rate of their population at a rate of about 2.699 per annum during this period, the overall economic performance has been relatively robust. This is an important improvement compared to the long stagnation that economies in the region exhibited from the mid-1970s to the end of the 1990s. During this period, the economies in the region on average grew less than the growth of their population leading to a reduction in their real per capita income for an extended period of time with considerable cost to Africans and their hope of breaking the poverty trap.

Robust economic growth, however, is not new to African countries. Africa registered rapid economic growth during the 1960s but that initial push for sustainable growth and improvement in standard of living became no longer possible once economic policy mismanagement set in and the commodity price boom was busted (Van de Walle, 2001). In reality, the post-1960 average per capita economic growth rate of Africa was about 0.79 percent whereas the population growth was stable and held fast at an average rate of 2.69 percent per annum (World Bank, 2017).

The overall economic growth performance of the region in the post-independence period has been so moderate that it is not yet clear if the recent relative improvement is a new trend or a temporary recovery from the long recession of the economies in the region. Have African economies learned the appropriate lesson from their past experiences as well as lessons from other developing countries outside the continent to sustain their economic growth and more importantly to convert that growth into a steady reduction in poverty across the continent? These are some of the central issues that call for a critical and in-depth analysis of the current economic performance of Africa, and the efforts to break the vicious circle of chronic poverty and destitution across the continent.

The source of such economic growth, sustainability as well as differences across countries, are features that need further elaboration and systematic analysis of what factors should be emphasized in an effort to translate economic growth into sustainable development and poverty reduction. In light of the experiences of such economies in economic stagnation, demographic pressures, and worsening poverty situation, the recent performances are indeed remarkable in their magnitude as well as spread across countries. Whereas overall average economic growth performance has exhibited significant improvement, translating economic growth into steady improvement in the standard of living is the most challenging and often unachieved objective in a number of countries. Whereas the countries in the region registered better economic growth, this record should be contextualized in that the growth rate occurred from a distressingly low level of income. Despite the recent growth rate, the average real per capita income in sub-Sahara African countries is estimated at just \$1,652 in 2015 as compared to \$1,072 in 1960 measured in terms of the 2010 constant international dollar (World Bank, 2017). Overall, the observation of real income per capita over a longer span of time across African countries does not leave much room for optimism yet. As Figure 1 below graphically depicts, the most consistent and stable growth rate in the continent has been population growth and the economies struggle to stay barely above the forces of demography.

Economic recovery and growth provides economies new opportunities to restructure their economies and identify pathways that could lead to sustainable economic performance. If the recent economic recovery can be capitalized upon and national economies earnestly address structural bottlenecks and institutional and policy rigidities in sustaining the growth performance of their economic agents, they could create new momentum that could ensure sustainable economic growth and poverty reduction. The central policy issue is that given the current economic growth performance of most of the African countries, do they have the policy and institutional capacity to translate their economic growth into a sustained reduction in poverty? If not, what can be done about it? Breaking the low-level-equilibrium poverty trap requires both initiating and sustaining robust economic growth, raising the average income well beyond the subsistence level, and translating such dynamism into steady job creation, structural transformation, and reduction as well as eventual elimination of chronic poverty.

The overall improvement in the economic growth performance is a wider phenomenon and observed in diverse settings and situations across the developing world. African countries, as well as the wider family of developing countries, have improved their economic growth performance. Translating the improved overall economic growth performance into a steady reduction of chronic poverty across African countries requires putting in place institutions and policies that provide equitable opportunities to all the population and enabling economic agents to accumulate essential human and investment capital. This leads to sustained improvement in their productivity and sets the stage for further reduction or even elimination of chronic poverty. For the first time in its history, Africa now has more non-poor than poor populations with an emerging middle class that has significant potential power to transform the continental economy (Moges, 2014). This has tremendous implications for the prospects of African economies and the life of Africans in the coming decades.

Poverty reduction is the outcome of both growth and income distribution processes and these elements are closely linked with the pattern of economic growth. It is therefore critically important to understand the process and forces that give rise to a persistent decline in poverty across countries and draw policy lessons that would help to promote the capacity of national economies to further address the remaining poverty and inequality challenges. A number of African countries have exhibited a unique pattern where both the share and the number of poor people first increased and only recently have both started to follow a downward trend. A closer examination of the poverty indicators across African countries strongly suggests that the performance of countries in terms of addressing chronic poverty is not amenable to generalization, and there are both success as well as failure stories. Whereas the number of countries that have managed to reduce the poverty rate has been increasing, there are dominant cases with high concentrations of poverty and population that exert significant influence on the overall poverty situation in the continent. Despite the improved situation and performance of African countries, for the countries under our consideration and for which comparable data is available, the total number of poor people has increased by about 64 million since the turn of the millennium.

These features suggest that the process of poverty reduction exhibits unique characteristics, and that subsequent efforts to eliminate poverty should take into account these forces so as to enable the majority of the population to escape the poverty trap and achieve sustainable improvement in their standard of living. The inspiration of this article emerges from the unique and historic possibility that chronic poverty as we know it could be eliminated within a foreseeable future provided that African countries, which are the weakest spots in this effort, could draw practical lessons from other developing countries and coordinate their efforts to break away from the poverty trap.

The purpose of this article is to analyze the recent trends in the extent of poverty reduction across African countries, highlight the pattern and features of the poverty reduction process, and draw policy lessons for further poverty reduction efforts. To accomplish this purpose, we have made use of a unique set of new and revised poverty and inequality data across African countries for which consistent and reliable data could be found. The study focuses on the period since the year 2000 during which poverty reduction policies took center stage in a new political-economy and global policy environment. We identified the effort and achievement of developing countries in terms of promoting economic growth, breaking away from economic stagnation, responding in terms of the pattern of income distribution, and interacting to both growth and distributional forces in shaping the outcome in the incidence of poverty across countries.

Success in poverty reduction is contextually defined in terms of sustained reduction in the share of the population of the countries under consideration that live on less than USD $1.90 per day chronic poverty line. An economy is considered successful in dealing with chronic poverty if it has managed to reduce their poverty index consistently below the 5 percent threshold and has set the stage for sustained poverty alleviation.

The paper contributes both to the theory of poverty analysis and the practical issues of development policy in the context of African countries and addresses the nexus between economic growth, income distribution issues, and poverty. A systemic analysis of the challenges and achievements in terms of poverty reduction provides a new insight into effective approaches, policy choices, and prospects in promoting sustainable and equitable economic growth that have a significant effect on the standard of living of the population and in terms of reducing the scope and depth of chronic poverty.

The rest of the paper is organized as follows. The next section develops conceptual arguments and deals with issues of poverty and the poverty reduction policy framework. Section three explores the argument in a broader analytical framework that attempts to link poverty reduction with growth performance with income distribution. Section four provides the evidence regarding the achievement in poverty reduction and its underlying forces. The paper concludes by drawing relevant policy lessons for countries where chronic poverty is still a formidable challenge.

Poverty: Conceptual Context and Measurement Challenges

Poverty is a multi-dimensional concept and as such requires a comprehensive policy approach to deal with it. Chronic poverty refers to the inability of households to provide sufficient subsistence and to lead a decent economic and social life. It is a pronounced and extensive deprivation in well-being of individuals, families, and communities.

From the conceptual perspective and current common perception, poverty and by implication, the policy of poverty alleviation have ambiguous and imprecise meanings (Chen and Ravallion, 2010; Deaton, 2005; Kanbur, 2005; Moges, 2013b, 2013c; Ravallion, et al. 2009; World Bank, 2005). Whereas researchers have widened the conceptual framework and context of poverty from consumption expenditure, capability, and freedom perspectives, the difficulty and inaccessibility of precise measurement of such concepts have led to the alternative focus on a narrow but more pragmatic identification of poverty indicators for public policy response purposes. This approach has limitations in understanding the full extent of the challenges individuals and families in the situation of the poverty trap face. This situation is not only related to material deprivation but overall lack of capability to change their situation. Breaking the impasse requires empowerment of the poor to address their situation coupled with effective intervention by the government sector or even external forces that have vested and rational interest in breaking the trap and making the escape permanent.

A poverty reduction policy involves measuring accurately the income of households relative to a reference poverty yardstick, counting the number of poor people, putting this figure in relation to the entire population, and characterizing the nature, underlying causes, and dynamics of their poverty. Each step is a difficult task and require considerable resources. Moreover, the lack of precision makes the concept vulnerable to political yard sticking in which actual poverty problems are not directly addressed or addressed obliquely (Deaton, 2005; Kanbur, 2005; Easterly, 2009; Jones, 2004). The headcount poverty index, for instance, could be reduced without necessarily reducing the absolute number of people in chronic poverty. This is particularly relevant in countries where population growth is fast, life expectancy is short and more children are born into poverty than those born in non-poor families. Moreover, who is poor and who is not largely depends on the poverty threshold the country adopts and when this yardstick is not realistic enough, the resultant poverty indicators would be misleading. Even when the benchmark yardstick is realistic enough, the poor are not homogenous. There is diversity within the ranks of the poor, and a concept of poverty would be partial if it fails to capture these essential features and develop ways to address them accordingly.

The conceptual context of chronic poverty is relevant especially in the poorest regions of the world as the situation might also involve generalized poverty where economies are simply not able to produce sufficient goods and services for the subsistence necessities of their population. It is important to note that the concept of poverty reduction might involve inter-temporal fallacy in that the poverty reduction strategy might become the victim of its own success. If one assumes that public policies reflect the will of the majority, at least in a democratic political setting, decline in the poverty index reduces the incentive for public policies to emphasize on further reduction measures especially when such measures are financed by contributions from the non-poor segments of the population or involve redistributive fiscal policy measures (Moges, 2013a). It is also realistic to acknowledge that not everybody has a vested interest in the elimination of poverty. As much as most of us want to overcome the humiliation that foreign aid and alms bring in the name of helping the poor, it is necessary to recognize the fierce resistance the powerful aid industry poses for radical changes in how countries implement anti-poverty measures.

It therefore becomes important to develop poverty elimination strategies that appeal both to the poor and the non-poor in society, empower the poor to make choices that affect their life, recognize the potential resistance that could emerge from vested interest groups, and mobilize support from a wide base while emphasizing the idea that eliminating chronic poverty is to the vested economic, social and political interest of the whole population of a nation. It is only under such comprehensive and broad based support that African countries can mobilize the necessary political, social, and economic resources to break the poverty trap once and for all.

The issues of poverty reduction could also be analyzed from the perspective of the process of economic growth and distribution of economic opportunities across economic agents and households. The level of poverty, as well as growth of mean income relative to the poverty line, is an important factor in reducing poverty. An economy might find itself in a situation of generalized poverty where aggregate output is not big enough to provide a decent living standard for all. In such a situation, average income falls short of the poverty line. This phenomenon emerges where economic agents and resources are underutilized, unemployed, underemployed or economic agents that do not have sufficient incentive, capital or technology to work for a number of institutional, policy, political, social and economic reasons. The first order of priority in such a situation is to unburden economic agents from such constraints and develop strategies to eliminate structural bottlenecks for the realization of the economic potential of the country under consideration. This in turn requires a thorough examination of the economic, social, political and behavioral factors and the institutions that give rise to such under-capacity utilization of natural and human resources in the economy.

Even when an economy improves its productive capacity and its average income is higher than the absolute poverty line, output may not or cannot be equally distributed across households. This is true partly because inequality and its root causes extend beyond economic forces. Observation of cross-country patterns of income distribution suggests that even the most egalitarian societies have an index of inequality in the range of 0.20 to 0.25, whereas the most unequal economies register about 0.60 to 0.66 (Milanovic, 2005). The pattern of wealth distribution across households, despite the limitation of the quality of such data, is turned out to be even more extremely unequal (Davies et al., 2010). However, not all inequality in a system reflects injustice. When the rewards that economic agents receive are adjusted relative to their effort, dexterity, and creativity so they are fairly balanced, it maintains the incentives for higher efficiency and robust growth in national income.

Economic growth is indeed the most powerful instrument to reduce poverty provided that it creates employment opportunities to the poor, increases the demand for factors that the poor own, and creates the condition in which the poor develop the capability to accumulate productive assets that prepare them for a productive and better life (Dollar & Kraay, 2002; Kraay & Raddatz, 2007; Moges, 2013b). Economic growth has twin effects both of which have important effects on poverty indicators. From an analytical perspective, economic growth could imply an increase in the average income of all households without necessarily changing their relative income. There is also a distributional effect in which the growth process is accompanied by changes in the relative income with ambiguous effects on the poverty indicators (Bourguignon, 2003; Dollar & Kraay, 2002). Nonetheless, the growth process might exhibit anti-poor elements when economic agents are not positioned to equally participate in and benefit from the growth process due to constraints of human capital, access to financial services, a weak business and investment climate, weak institutions, and restrictive economic policies (Alesina & Rodrik, 1994; Persson & Tabellini, 1994).

Is economic growth distribution neutral? There are strong tendencies that cast doubt on the distributional neutrality of growth. The growth of income of a national economy does not benefit all economic agents equally for a host of reasons including differences in resource endowments; inputs in market imperfections, government policies, institutions, and social relationships. Economic growth benefits mostly those who have the capability to initiate growth, and it eventually reaches those economic agents who get employment opportunities and those who produce factor inputs in the production processes. This process is gradual and its flow does not necessarily involve a significant portion of the population. It is possible that economic growth could be driven by a sector that has very weak linkage with the rest of the economy and with inconsequential effect on employment generation. Such a growth process can give rise to deterioration in the distribution of income and worsen the inequality situation leaving the majority of the population behind.

Poverty reduction could be achieved by the growth in the income of the poor or improvement in the distribution of income. These two features of the growth process and its implication on poverty indicators are an important analytical approach to decompose the relative importance of the growth and distribution components in the process of poverty reduction (Bourguignon, 2003). The relative importance of these forces influences the extent to which growth can be translated into poverty reduction on a sustainable basis. The dynamics of economic growth and its impact on the poverty situation in a country hence largely depends on the political economic forces that shape the nature and dynamics of the economic and socio-political forces within the country.

Analytical Framework for Poverty Analysis

The level and change in the indicators of poverty of a country are closely linked to the degree to which economic agents utilize all of their economic resources in the system for the production of goods and services at a given state of technology. Productive efficiency and technological progress are engines of economic growth. Given the production process, the distribution of output across households involve political economic, market, demographic, and institutional forces. As such, the process of production and distribution of economic resources ultimately influence the prevalence and persistence of poverty in the system. From such a perspective, the stage of economic development as measured by per capita or per household income, the growth rate of the average income, pattern of income distribution, and population growth are the main forces that shape the level and changes in the indicators of poverty.

The measurement of poverty and its dynamics over time depends on computing the aggregate output of the nation and its growth rate, the distribution of income across households, the size and growth rate of the population, and a realistic poverty yardstick. These factors in isolation as well as in combination influence the level and dynamics of poverty of a nation over time and across households.

Poverty Indices

The measurement of poverty as defined above could take various approaches and practical twists. The most commonly used approaches involve establishing a distribution function of the aggregate output of an economy, arranging the distribution of income or purchasing power with respect to the distribution of the population and with the help of a separately determined poverty line to divide the population into poor and non-poor classes. This process is conceptually simple but could be misleading unless it is used precisely and interpreted from the perspectives of distribution, dynamics, and responsiveness to policy initiatives.

Accurate measurement of poverty starts with a reliable measurement and ordering of income at the household level and national level as well as computing accurately the size and growth of the population in a country. These features could be captured in a conceptual framework that reflects various perspectives of poverty.

Consider that the income or consumption expenditure level of a total of n-households in a nation is arranged in an ascending order and take the following notation:

$$\mathbf{y} = \left(\boldsymbol{y_1}, \quad \boldsymbol{y_2}, \cdots, \boldsymbol{y_d}, \cdots, \boldsymbol{y_m}, \cdots, \boldsymbol{y_n}\right) \qquad (\mathbf{1})$$

The aggregate value of income of households approximates the size of the national output that is available for consumption which closely approximates the disposable income in the national income computation plus public services and goods that household members receive from the government. Hence the aggregate size of output is critically important.

If the average income of a nation falls short of the threshold poverty line, by necessity, the majority of its population would be suffering from chronic and endemic poverty. This is a situation where the poverty threshold income level is higher than the average income of the entire economy, $y_d > y_m$. This is an exceptional situation of generalized poverty. It captures the central challenge of a failed system that could not generate enough goods and services to provide the necessities of economic life. As we will discuss this issue later on, a number of African countries currently find themselves in generalized poverty that describes a low-level-equilibrium-poverty trap. This is an equilibrium trap conditioned by institutional, political, demographic, environmental, and technological forces that reinforce each other for stability. Breaking such a stable equilibrium requires radical reforms that break the rigidities, constraints, and limitations on economic agents from making decisions and responding to incentives so as to engage in productive endeavors and earning in the process a decent standard of living.

It is only when the total output that the economy generates is large enough that sufficient resources can be available for addressing poverty objectives. Income per household hence measures what could be available, on average, for members of households and is measured by dividing national income by the total number of households, n. Income per capita, which depends on the average family household size, is equivalent to the aggregate output divided by the size of the national population. Note that the aggregate output is produced by a productively employed segment of the population and its productivity whereas this total output should support the consumption expenditure of the entire population. Therefore, the aggregate size of output and the total size of the population are two fundamental determinants of how many goods and services could be available on average for individuals to consume and invest for further production.

The average income is an important indicator in a sense that it shows the value of goods and services that a typical household and its members can command if income and consumption capabilities were fairly and equally distributed. However, income is rarely distributed equally across households or economic agents. Households and their members have inherent inequality in age, productive capacity, incentive to work, education, health, dexterity, and the like that are reflected partly on their capacity to earn income. The dispersion of household income relative to the average income captures the distribution of income. However, the extent of inequality is a matter of public concern, especially when differences in income do not reflect differences in productive attributes of households and their members. It is also possible that inequality might have functional influences on the growth rate of income of households and hence the inter-temporal dynamics of income and poverty indicators.

The simplest and quite obvious indicator of inequality is the gap in income between the richest households and the poorest. In our ordered ranking of households by their income level, this is depicted by $(\boldsymbol{y_n - y_1})$. The relative concentration of households towards the highest, the middle, or the lowest on the income ladder generates the most obvious form of income and consumption expenditure gap in a country. This gap and its behavior over time would have important bearings on the relative poverty index.

There is a stylized tendency of economic resource distribution which suggests that households tend to concentrate nearer to the lowest income, somewhere below the average income level, giving the overall distribution of income a skewed structure. The level of income that most of the households generate and consume - the modal income - is a typical barometer of interest in economic analysis for it reflects the most representative feature of a household and its members. In this context, it is also relevant to take into consideration the magnitude of $(y_d – y_1)$ which shows how much income of the poorest households fall below the poverty line. The smaller the gap the better, whereas a larger gap suggests more daunting challenges in addressing the problem especially if those falling below the poverty line constitute a higher share of the population.

The next issue of interest is related to the distribution of income of households relative to the average income of households. If we consider $\mathbf{y_m}$ in equation (1) above as the average income of households, the deviation of individual household income relative to the average indicates how income and expenditure capabilities are distributed across households.

Measuring income distribution and inequality is a notoriously difficult and inaccurate business. In practice, nations gather vital information on the distribution of income by conducting national household surveys on income or expenditures but for a long list of reasons such sample surveys fail to provide accurate indicators of the pattern of income distribution. Moreover, the surveys are conducted infrequently, and their outcomes largely deviate from national income accounting based estimates of aggregate output and income. It is therefore customary to rely on expenditure surveys to derive indicators of income distribution and inequality and rely more on national income accounts to gauge the level of national economic activity and growth rate.

Based on the level and distribution of aggregate output of a nation across the population, indicators of consumption deprivation are computed by applying a poverty threshold line. A class of poverty measures, following the general framework of the Watt index, were commonly used in poverty analysis (Foster et. al., 1984, Morduch, 1998). This class of poverty index summarizes the level of poverty and its extent for a given distribution of income and the poverty line and the corresponding average exit time to eliminate poverty from the system. It can be summarized as follows:

$$\boldsymbol{P_\alpha(y\,;\,z) = \frac{1}{N}\sum_{i=1}^{d}\left(\frac{z - yi}{z}\right)^{\alpha}} \qquad (\mathbf{2})$$

Where $\mathbf{P}_\alpha$ $(\boldsymbol{i = 0, 1, 2})$ is the poverty index and is the function of income $(\mathbf{y})$ of poor households and the poverty line $(\mathbf{z})$. As indicated earlier, there are **n** households arranged in increasing order from the lowest to the highest income per household, and household **d** has an income exactly equal to or below the poverty line.

P_0 is the indicator of the headcount poverty index (HPI), which measures the total number of people in households with an income below the poverty line expressed as a share of the total population in all households, **N**. Households and their members whose income falls short of the poverty line would constitute the poor.

This is useful and yet it is highly dependent on the choice of the poverty line yardstick that is used to designate households as poor or non-poor. The poverty line is drawn using a set of commodities that are dominantly used and affordable by poor households. However, one has to be aware of the problems of picking an arbitrary threshold for it may not realistically reflect the choices that are available for poor households to allocate their limited resources (Chen et al., 2010; Ravallion et al., 2009). Poverty involves lack of choice and vulnerability to different shocks that are outside the control of the members of the household. This is particularly the case in chronic poverty even if relative poverty also invokes a considerable lack of freedom of choice. The way the poverty threshold is chosen and determined affects the classification of households in the two broad categories of the poor and the non-poor. This could take quite an arbitrary bend if those near or above the threshold are still deprived of the basic necessities of life and choices that would make their status of non-poor almost trivial (Deaton, 2005).

There are two related measurement approaches of poverty that measure how poor households fall short of the poverty line - the poverty gap index (**P_1**) - as a percentage of the poverty threshold level. This approach is sensitive to the distribution of income among the poor households for it measures the average deviation of income of poor households from the poverty line threshold. This suggests that anything that helps the poorest households relative to the rest would improve the overall extent of poverty. This might involve income transfers, welfare programs, or income boosting approaches that would benefit the poorest segments of the society. And yet it does not directly address the extent to which households with an income level higher than the poverty threshold would be vulnerable. This is quite an important concern particularly when the non-poor are concentrated just above the poverty line but not far enough to be comfortable about their current and future economic status.

Consider a family of four whose current consumption expenditure is such that they are considered a non-poor household, and yet they barely make it. If a child is born, the family size expands by 25 percent while income most likely remains somewhat the same at least in the short run. In such a case, the family may soon be in poverty unless it compensates its purchasing power with a corresponding rise in their real income.

These two concepts of poverty index, headcount poverty index and the poverty gap, are the most commonly used, popular, and relatively simple approaches to describe the absolute poverty of a nation.

The third concept is the measure of the severity of poverty which is the square of the poverty gap that attaches more weight for those households that fall far below the poverty line than those near the threshold line:

$$\boldsymbol{P_2(y\,;\,z) = \frac{1}{N}\sum_{i=1}^{d}\left(\frac{z-yi}{z}\right)^2}$$

However, its practical application in poverty analysis and policy has been marginal. In this study, we focus on the first concept and its implications in the analysis of poverty.

Growth in the average income of the poor and the aggregate economy without a corresponding deterioration in the pattern of income distribution generate the most promising path out of poverty. However, there are complex sets of issues that might hamper members of poor households from benefiting and contributing to the growth of income, productivity and employment in the economy. The capacity of an economy to address the challenges of poverty, hence, depends on how much it can mobilize and invest in the productive capacity of its population and generate employment opportunities to most of the economically active population and especially for those from the poorest segment of the population. The elimination of poverty apparently translates into pushing the average income of the poorest segments of households, y_1 to y_d, beyond the poverty line, z. The process of shared economic growth would have the best chances of eliminating poverty on a sustainable manner, and yet in most cases, some form of social safety net would be necessary to ensure that all families enjoy the basic necessities of life.

Nonetheless, there are possibilities in which national economies find themselves where the poverty threshold line, defined within an acceptable level of bare necessities of life, might be higher than the average income of households $(z > y_m)$. This is a typical situation of generalized poverty where chronic poverty is widespread and almost every family is in a poverty trap. This situation calls for an entirely different approach in addressing the challenges of poverty and overall economic underdevelopment. Even in such a dire situation, there would be a minority of households that are rich and yet their relative prosperity would have limited impact on the overall poverty situation of the national economy. Apparently, income redistribution policies would have very limited influence on the dynamics of poverty in this situation since the overall population has an egalitarian distribution of deprivation and poverty for its citizens. The challenge for policy here is a radical and comprehensive reform that would change the very nature of how households and their family members engage in productive economic activities and benefit from their endeavors. It would take radical institutional, political, and social reforms that break away from the bottlenecks and bad institutions that have deprived the population from earning a decent economic life and participate productively in the economic activities of their country.

Poverty Exit Time

The accurate conceptualization and measurement of poverty is the first step in dealing with poverty reduction efforts. The pace and extent of poverty reduction is dependent on a combination of factors that involve overall economic growth of the national economy, the growth rate of the average income of poor households, the distribution of income across households, the growth rate of family size across the income distribution pattern, and the extent to which vertical mobility is feasible for individuals from poor families to join the ranks of the non-poor.

The concept of poverty exit time is used to describe what it takes in terms of the growth rate of income for poor households to eliminate their income shortfall from the poverty line. Given the poverty gap, growth rate of income for the poor would translate into closing the income gap and joining the ranks of the non-poor. A concept of an average exit time that makes use of a modified version of the Watts measure, sensitive both to distribution of income and decomposable across subgroups of the population, is used for our analysis (Murdoch, 1998). The Watts index has a common notation of:

$$W = \frac{1}{N}\sum_{i=1}^{d}[\ln(z) - \ln(y_i)] \qquad (3)$$

where there are i individuals in the population indexed from 1 to N in increasing order of income and d captures the number of people with income y_i below the poverty line z.

To develop a measure that captures the expected time for a poor household to exit poverty if its income grows at an average rate of g per annum is depicted as the relationship between the current income of the household, y_i , and the target of the poverty threshold level, z. This could be depicted as follows:

$$\boldsymbol{z = y_i e^{(t_g^i g)}} \qquad (4)$$

Taking the logarithm on both sides of the equation and solving for t^i_g results in:

$$\boldsymbol{t_g^i = \frac{\ln(z) - \ln(y_i)}{g}} \qquad (5)$$

Given that there are d households with an income at or below the poverty line and (n-d) households with an income at least equal to the poverty line, the average exit time for households, T_g, is hence the average time for the entire population to eliminate poverty. It is given by:

$$\boldsymbol{T_g = \frac{1}{N}\sum_{i=1}^{N} t_g^i} \qquad (6)$$

Note the fact that out of these households, n-d households have zero exit time because they have already achieved the target level of the threshold income. Some households may be barely above the threshold, and yet, they and their family members would be included in the class of the non-poor. This would suggest that the effective average exit time is:

$$\boldsymbol{T_g = \frac{1}{N}\sum_{i=1}^{d} \frac{[\ln(z) - \ln(y_i)]}{g}} \qquad (7)$$

This is closely related to a class of Watts index above in that:

$$\boldsymbol{T_g = \frac{W}{g}} \qquad (8)$$

The essential feature of this formulation is that provided that the income of the poor is assumed to grow at an average rate of g per annum, the short fall of income of the poor from the poverty line could be eliminated within a span of time that is equal to the total amount of the gap divided by the growth rate of income of the poor. Therefore, if there are policies that promote the growth of income of the poor, then the poverty in a nation could be reduced or eliminated within a specific period of time. This perspective, of course, assumes that income among the poor could grow equally or that the poor have equal opportunities to improve their income. With this qualification, the exit time provides an important point of focus for poverty policy.

Regarding a closely related issue particularly in terms of mobilizing the necessary resources to address the problems of chronic poverty, it is important to estimate what would be the cost of such an objective relative to national income. Since we can estimate the average income shortfall of households below the poverty line, by aggregating the shortfall of the relative burden to the size of the national economy, we get:

$$\boldsymbol{P_{burden}} = \frac{\sum_{i=1}^{d}[\boldsymbol{ln}(\boldsymbol{z}) - \boldsymbol{ln}(\boldsymbol{y_i})]}{\boldsymbol{GDP}} \tag{9}$$

This estimate provides the cost burden to the national economy to eliminate poverty from the system, and it also serves as a yardstick by which households whose average income falls below the poverty line could be directly supported. The cost of such support could be unaffordable in economies where the majority of the households are poor, and the economy is rather weak. However, countries with an HPI within a range of 5-10 percent of their population should be able to mobilize the necessary funds domestically to absorb the financial burden of poverty alleviation measures.

Analysis of Poverty Reduction in African Countries

The measurement of poverty and its dynamics over time depend on computing the aggregate output of the nation and its growth rate, the distribution of income across households, the size and growth rate of the population, and a realistic poverty yardstick. These factors in isolation as well as in combination influence the level and dynamics of poverty of a nation over time and across households.

Poverty has been deep and widespread across the developing countries of the world. This is the manifestation of both the low level of income and productivity of national economies as well as the inequitable access to productive opportunities and hence income. Low productivity and lack of access to educational and employment opportunities in more productive sectors have reduced the opportunities to realize the potentials of millions of poor people from earning decent living standards and escaping from the poverty trap. This has also deprived economies from benefitting from the potential productive contribution of poor people in improving the overall welfare of the total population.

Table 1 summarizes the regional poverty indicators across African regions and over time. It exhibits features that provide both the challenges and prospects of addressing poverty in the context of African countries. First, there is a continental trend which indicates that both the absolute number of poor and their share in the total population first rose and then started declining. The headcount index of poverty first increased from 56.75% in 1990 to about 57.1% in 2002 and then declined over the years to reach 40.99% in 2013. Second, chronic poverty is concentrated in some countries and regions within the African continent. Increasingly, East and West African countries are where both economic and demographic forces are pushing up a higher concentration of poverty indicators. Third, despite the overall tendency, there are significant variations in terms of the scope and rate of poverty reduction across countries.

Table 1

Poverty Indicators in Sub-Sahara Africa

	1990		2002		2013	
	HPI (%)	Poor (mil.)	HPI (%)	Poor (mil.)	HPI (%)	Poor (mil.)
Developing Countries	42.01	1840.1	30.04	1588.12	12.55	766.01
Sub-Sahara Africa	54.28	276.08	55.58	391.28	40.99	388.72
East Africa	62.94	130.6	58.53	160.4	40.90	159.1
West Africa	56.34	101.4	59.28	147.0	43.19	145.6
Central Africa	56.46	39.5	67.38	68.7	54.46	75.3
Southern Africa	32.81	13.8	36.05	19.1	17.88	10.9

Source: World Bank, 2017. Poverty Database and World Development Indicators. *Note:* HPI measures the share of the population with less than $1.90 per day poverty line in terms of adjusted 2011 PPP. Author's computation on the basis of data source.

Fourth, the poverty reduction performance of countries has been highly influenced by demographic forces. Whereas the overall tendency of the demographic transition is manifest in several African countries, there are countries that face considerable demographic pressure. The demographic challenge expressed in terms of high and stable growth rate of the population has made the task of addressing poverty more daunting. Fifth, whereas the number of poor people has declined across the continent in recent years, there are more Africans in poverty now than in 1990. In total, there are still nearly 389 million Africans living in chronic poverty, which is about 113 million more poor people than in 1990. Sixth, whereas the successes in reducing the number of the poor and their share in the population is widespread across the continent, those countries that have failed to make a significant reduction in poverty are dominant in terms of population and economic size which increases their influence on the overall assessment of the poverty situation in the continent.

Understanding variation in terms of the poverty reduction process and drawing policy lessons for those countries and regions that still face considerable challenges in addressing the problems of chronic poverty requires examining the forces behind variations in performance. Figure 1 depicts the average growth performance of Sub-Sahara African countries since 1960. It is notable that not only has economic growth been modest, it also has been very erratic and unsteady over time. Growth in real per capita income is also constrained significantly by the steady and rapid population growth rate of the region. As the figure graphically depicts, it is the struggle between the growth efforts of the economies and the power of the demographic forces that have shaped how economies have managed to generate sustainable or weak economic growth over time.

It is indeed a big deal to cope with the growth of the population, and yet steady improvement in the standard of living necessitates the growth of economic activity faster and more steadily than population.

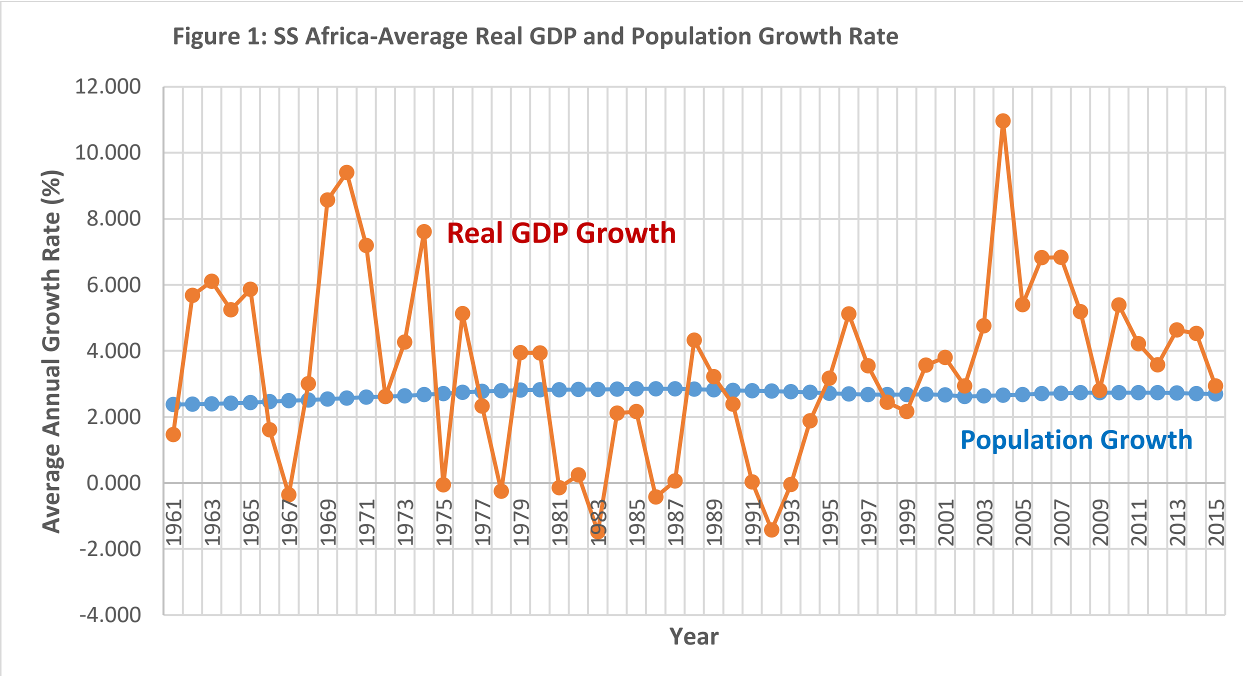

Figure 1. Sub Saharan Africa – Average real GDP and population growth rate.
Source: World Bank, 2018

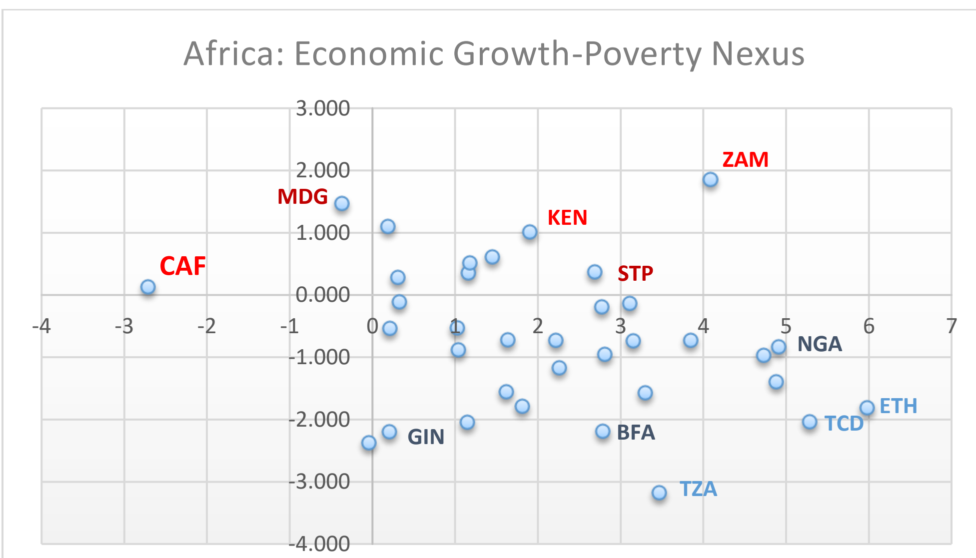

Figure 2. Africa: Economic Growth-Poverty Nexus

Figure 2 relates graphically the relative performance of 35 African countries for which comparable data could be secured both on poverty, growth rate in real income, and demographic indicators. The growth rate and poverty nexus reflect a clear tendency, and yet there are more forces in operation that affect the degree of poverty reduction in the sample countries. Whereas economic growth remains the main force that enable countries to address the problems of chronic poverty on a sustainable basis, economic growth does not necessarily translate to poverty reduction. Economic growth is only a potential power that could be used for effective and sustained reduction in poverty.

It is evident that countries with robust economic growth have registered significant reduction in poverty. Countries with a fast growth rate in real per capita income on average managed to reduce the share of their population living in chronic poverty. On the other side, countries with contracting economies could not reduce poverty even in a seemingly egalitarian situation. It is also clear that countries in our sample are concentrated in the low-growth-low-poverty reduction loop. This suggests that without robust economic growth, economies find it very difficult to make a sustainable dent in chronic poverty.

A number of countries registered positive growth in average income and yet failed to translate that into tangible poverty reduction. This phenomenon tends to prevail in countries where growth is not shared broadly, and income distribution deteriorates. These features suggest that economic growth is necessary and critical for poverty reduction but without enabling a pattern of income distribution economic growth does not necessarily translate into steady poverty reduction.

Table 2 below summarizes the descriptive statistics of the data on variables under consideration in our sample of 35 African countries. The data reported here is only a conservative estimate of the problems of poverty and other attributes of life in Africa. Countries for which data is not available are usually with deeper poverty problems and failed economic growth. Whereas the 35 countries in the sample provide some picture of the situation in the sub-continent, the missing data is partly a symptom of deeper economic, political, and social problems.

Table 2

Sub-Sahara Africa- Descriptive Statistics on Poverty Indicators

Variable	Obs.	Mean	Std. Dev.	Min	Max
Change in HPI	35	-.6779	1.1791	-3.1783	1.8575
Population growth	35	2.5555	0.6698	0.9126	3.8022
GDPc growth	35	2.1256	1.8701	-2.7092	5.9836
ChangeinIncomeshare	35	-.4402	2.2846	-6.49	3.21
GDPc2000	35	854.47	1148.78	136.6	4854.5
HPI2000	35	53.51	20.62	19.64	91.21
Population 2000	35	16.692	23.791	.137164	122.87
Bottom40%share2000	35	26.298	2.955	17.53	30.88
Poor Population2000	35	9.696	15.507	.04047	78.026
Poor Population2012	35	11.52	18.323	.06315	94.896
Change in # Poor	35	1.825	4.558	-6.545	16.86

Source: World Bank. 2016. World Development Indicators and Poverty Database.

It is evident from the performance of the countries in the sample that overall poverty has declined by a modest rate, but intra-continental variations have been such that there is a net increase of about 113 million chronically poor people in the region since the year 2000. This is particularly true in countries where per capita income was extremely low to begin with, economic growth was modest, and population growth was fast. In the year 2000, for instance, only 10 out of the 35 countries in our sample had an income per capita higher than the poverty threshold level which suggests that technically, these countries were in generalized poverty. By the year 2012, the situation improved modestly so that 16 out of the 35 countries registered a level of per capita income beyond the threshold level of chronic poverty. In effect, more than half of the countries in the sample are still in generalized poverty, and under such a situation, sustainable poverty reduction would be practically impossible unless radical reforms are undertaken that break away from structural and systemic bottlenecks for economic activity and productivity of factors of production.

Table 3

SS Africa- Regression Result on Poverty Index 2000-2013

Variables	Coefficient	Std. Error	P-value	[95%Conf.	Interval]
GDPc growth rate	-0.1579	0.0864	0.077	-0.334	0.0183
Average change in Bottom 40% Income share	-0.2169	0.0716	0.005	-0.363	-0.0709
Population growth rate	0.2938	0.2036	0.159	-0.121	0.709
HPI 2000	-0.02286	0.008911	0.015	-0.041	-0.0047
Dependent Variable: Average annual change in HPI					
Observations: 35					
Adj. R-Squared= 0.4919					

Incorporating the different attributing factors in shaping the outcome in poverty indicators in the sample countries, Figure 3 portrays concisely the various channels by which progress in poverty reduction, as measured by change in the HPI, is influenced or related to the variables that are discussed in the conceptual framework section. Whereas economic growth is an important force that countries can use to address the problems of chronic poverty, the nature and inclusiveness of the growth process is found to be an important element in translating economic growth into robust poverty reduction.

This aspect of the growth process is closely linked with the pattern of income distribution and the extent to which the share of income goes to the relatively poor segment of the population. Even if there are various indicators of inequality and a pattern of income distribution, for the purpose of this research, we make use of the share of national income that goes to the bottom 40 percent of the income quintile. Economies that manage to improve a share of the bottom segment of the income distribution and hence enabling more and more of the population to benefit from the growth process have made significant strides in poverty alleviation efforts.

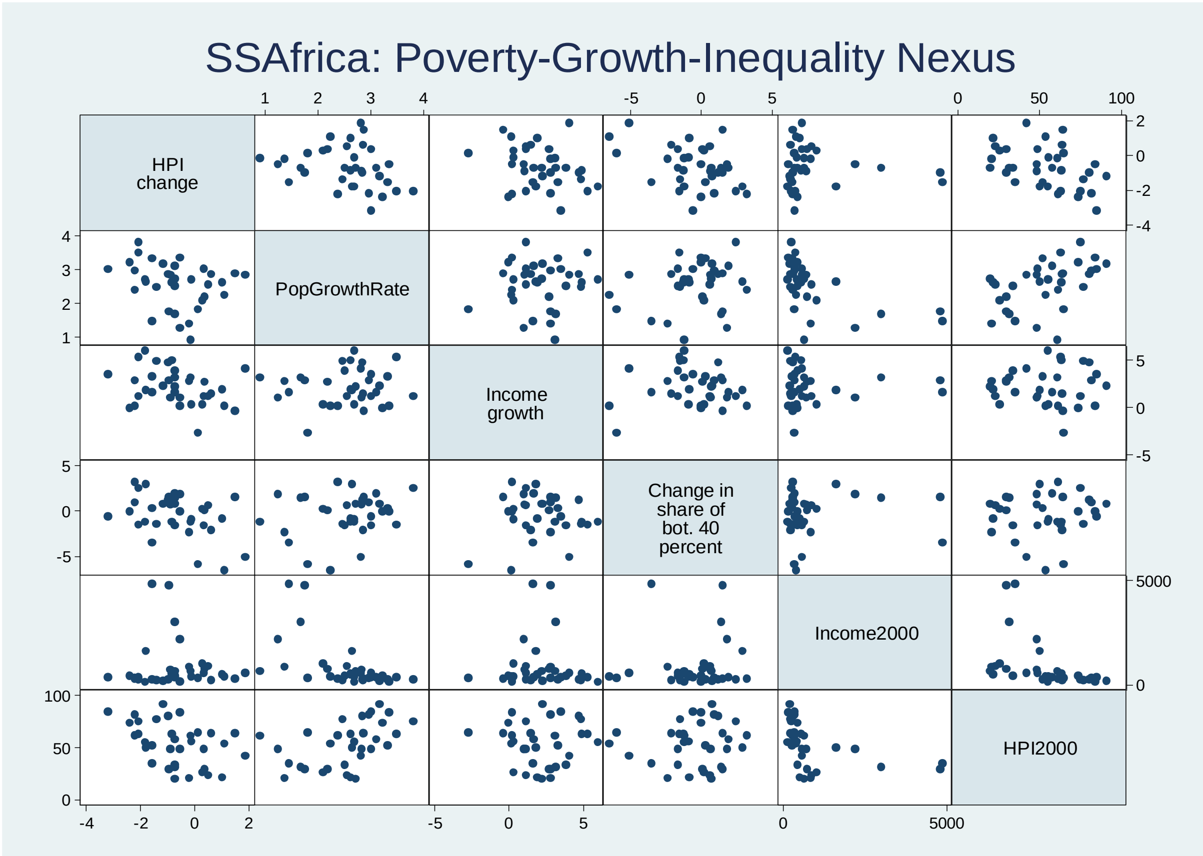

Figure 3. Spectrum of Influences in Poverty Reduction Process

It is clear from the cross-country observation that a number of countries failed to translate economic growth into poverty reduction because of a deteriorating pattern of income distribution that effectively excluded the poor from improved income. Such economies have also failed to reduce the poverty index on a consistent manner even though they had the opportunity and capacity to address the problems of poverty through their improved economic growth performance. Countries seem to find that changing the pattern of income distribution is very difficult to accomplish without undertaking fundamental changes in their political economy and institutional environment. This constraint, in turn, has influenced the extent to which countries can translate economic growth into a corresponding poverty alleviation outcome.

Growth, Inequality, and Poverty Nexus

The situation and change in poverty indicators are highly influenced by the growth rate of national income and the pattern of income distribution which effectively determine who benefits from the growth process. Whereas economic growth is a necessary condition for sustainable reduction in poverty and improvement in standard of living, it is not a sufficient condition for such an outcome. It takes more than economic growth to bring about sustainable growth of job opportunities, employment of the labor force into more productive and growing sectors, and assurance that the next generation of the labor force is getting the necessary training and preparation to move to a higher career ladder in the production process. This would create economic growth that is shared, comprehensive, and sustainable in that an increasing share of the labor force and the population would become both the source and beneficiaries of the improved economic growth process.

It should be noted, however, that the process of economic growth does not follow sector neutral, economic agent neutral, or policy neutral pathways. The process of economic growth involves creative innovation of entrepreneurs and the policy and institutional environment in which economic decisions are made. This usually leads to sequential changes in economic activities, first in limiting industries or sectors and then eventually in reaching the entire economy. Entrepreneurs allocate their limited investment resources in areas that promise the most in terms of risk-adjusted real return which involves a selective approach towards areas of investment to be provided with priorities. Those sectors and activities receive the initial investment allocation and employ the factors of production in the flow of sequential economic activities. In this framework, growth in employment and income accrues to those ready and able to benefit from the initial investment process and translate their employment into higher output and income. Economic growth hence is characterized by such discontinuous processes that reshape the scope and intensity of utilization of economic resources in the system.

If national economic growth is driven by industrial sector growth, it is natural that investment resources and employment opportunities expand in the industrial sector attracting more resources from the rest of the economy and eventually reallocating these factors towards the sector. Those who are actively employ and engage in the industrial sector would be the first beneficiaries of the process with subsequent effects on the rest of the economic sectors. In the meantime, income and employment opportunities grow relatively faster in the industrial sector which leads perhaps to changes in the pattern of income distribution in favor of the industrial sector and workers, followed by those economic sectors that have direct and strong links with the industrial activities. In this way, the growth process disrupts the prevailing pattern of economic activities as well as the distribution of employment and income across economic sectors. The challenges and efficiency in economic policy making in the context of developing countries revolve around identifying the potentials of the economy and redirecting collective efforts towards such endeavors, and in the process, benefiting those involved in the growth of the new opportunities. Countries that have managed to generate sustained, steady, and inclusive economic growth were able to register drastic reduction in chronic poverty and set the stage for further development of their national economies. The experiences of such successful developing countries clearly indicate that addressing the challenges of poverty requires combining both the growth and income distribution approaches along with continuous effort to balance the two forces.

Concluding Remarks

The contours of success in poverty alleviation across African countries are closely related to economic growth performance, the initial level of income, the level and changes in the distribution of income, and the extent to which the political-economy of these countries facilitates the opportunities for sustainable and shared economic growth. While African countries have registered modest progress in their fight against poverty, the challenge remains daunting, and those who escape chronic poverty are still vulnerable to fall back into the poverty trap. Generalized poverty is prevalent in a number of African countries where aggregate output of these economies is simply not large enough to provide the necessities of life for their population. In such a situation, the first order of priority is to enable the economy to break away from the structural bottlenecks in which it finds itself due to hostile policy, institutional, demographic, and environmental pressures.

The improvements in recent years both in growth rate and poverty indicators are mainly driven by better economic growth whereas further progress highly depends on addressing inequality concerns and improving the political-economy environment of the countries. Success in poverty reduction in African countries has been very uneven and the overall picture conceals critical challenges in a large number of countries that have limited capacity to initiate and sustain economic growth. Inequality remains a serious challenge in a number of countries and reform measures to address the problem have been moderate. With a few exceptions, there is an apparent deterioration in the pattern of income distribution. The evidence suggests that improving the pattern of income distribution in favor of the poor has significant impact on reducing the depth and scope of poverty and sustaining economic growth.

The objective of eliminating chronic poverty within the framework of global sustainable development faces its weakest point in the context of African countries and requires addressing the remaining hurdles in these countries to sustain and create growth inclusive of the poor. Access to education and health services to the poor generates long lasting human capital capabilities among the poor that would enable them to earn decent standards of living. Addressing the problems of inequality has considerable potential to moderate the problems of chronic poverty in Africa. Building the political economic environment and institutions necessary for mobilization of support for poverty alleviation are important to translate economic growth into sustainable poverty reduction. It is therefore vitally important for African countries to focus their effort to initiate and sustain shared economic growth so that an increasing share of their population escapes chronic poverty.

References

Alesina, A., & Dani R. (1994). Distributive policies and economic growth. *Quarterly Journal of Economics, 109*(2), 465-490.

Chen, S., & and Ravallion, M. (2010). The developing world is poorer than we thought, but not less successful in the fight against poverty. *Quarterly Journal of Economics, 125*(4), 1577-1625.

Davies, J. B., Sandstrom, S., Sharocks, A., & Wolff, E. (2010). The level and distribution of global household wealth. *The Economic Journal, 121*, 223-254.

Deaton, A. (2005). Measuring poverty in a growing world (or measuring growth in a poor world). *Review of Economics and Statistics, 87*(1), 1-19.

Dollar, D., & Kraay, A. (2002). Growth is good for the poor. *Journal of Economic Growth,* 7, 195-225.

Easterly, W. (2009). Can the West save Africa? *Journal of Economic Literature*, *47*(2), 374-447.

Jones, S. G. (2004). *An end to poverty? A historical debate*. New York, NY: Columbia University Press.

Kanbur, R. (2005). Growth, inequality and poverty: Some hard questions. *Journal of International Affairs*, 58(2), 223-232.

Kraay, A., & Raddatz, C. (2007). Poverty traps, aid, and growth. *Journal of Development Economics 82*. 315-347.

Milanovic, B. (2005). *World apart, measuring international and global inequality*. Princeton, NJ: Princeton University Press.

Moges, A. G. (2013a). The elusive war on poverty: Public policy issues and concerns. *Journal of International Public Policy, 31*, 25-48.

Moges, A. G. (2013b). Economic growth, inequality and poverty in developing countries: Policy issues and challenges. *International Journal of Economic Policy Studies*, *8*(3), 41-66.

Moges, A. G.. (2013c). The Political Economy of Poverty Reduction. *International Journal of African Development, 1*(1), 19-39.

Moges, A. G. (2014). The African middle class: Some uneasy poverty and inequality arithmetic. *Journal of International Public Policy, 34,* 49-65.

Morduch, J. (1998). Poverty, economic growth, and average exit time. *Economics Letters, 59,* 385-390.

Persson, T., & Tabellini, G. (1994). Is inequality harmful for growth?" *American Economic Review*, *84*(3), 600-621.

Ravallion, M., Chen, S., & Sangraula, P. (2009). Dollar a day revisited," *The World Bank Economic Review, 23*(2), 163-184.

Van de Walle, N. (2001). *African economies and the politics of permanent crisis, 1979-1999*. New York, N.Y: Cambridge University Press.

World Bank. (2005). *Pro-poor growth in the 1990s: Lessons and insights from 14 countries,* Washington, D.C.: World Bank.

World Bank. (2017). World development indicators database. Washington, D.C.: World Bank. Retrieved from http://www.worldbank.org.