

# **ADDRESSING AFRICA'S TRIPLE CHALLENGES: TO WHAT EXTENT DO PHYSICAL AND INSTITUTIONAL INFRASTRUCTURES MATTER?**

## **Inaugural Lecture**

Presented by

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### **Summary**

Physical and institutional infrastructure remains an integral part of any economic system and forms the basis for overcoming Africa's triple challenges (poverty, inequality and unemployment). But many policy models design to tackle the challenges facing Africa today have not yet incorporated the effect of institutional/governance infrastructure in it. This lecture provides a thorough analysis of the triple challenges facing Africa and how physical and institutional infrastructure can provide a turnaround. The analysis highlights some important policy implications which suggest that an alternative or revamping of the physical and institutional structures is paramount to addressing the triple challenges facing the continent. This implies that, Africa does not need an alternative economic system to overcome its triple challenges but rather it needs alternative governance or institutional structures. In other words, institutions rule over all economic objectives. Therefore, economic theories and their applications may not be visible and implementable in Africa if the institutional and physical infrastructure constraints are still embedded in the system.

## **1. My Research Background**

My research activities during the past twelve (12) years have focused on the macroeconomic field, with the niche of linking fiscal, developmental and institutional objectives to macroeconomics performance. A significant aspect relies on the assessment of the growth-poverty gap and the effects of fiscal policy changes in a macroeconomic context. The locus of my research not only considers the general theories of growth, poverty and fiscal policies, but adapts them to the African context, by taking into consideration the socio-economic and institutional characteristics embedded in the economy. The premise of my research is that structural impediments existing within the economy could hamper the growth and development of the country and in the absence of good institutions (governance), economic activity will be retarded.

The early stage of my research career was devoted to the theoretical analysis and understanding of the interrelationships that exist between the different sectors of the economy. My doctoral thesis and article published focused on theoretical issues central to my research. My writings have since evolved and progressed to a point where I have been able to identify peculiar aspects of the macro economy, and propose policies for addressing these issues. Understanding these rigorous interrelationships, I have been able to investigate (post-doctoral) important macroeconomics questions/problems that face South Africa and sub-Saharan Africa as a whole.

Looking at my research outputs, there is a clear trajectory that has evolved over time, especially my post-doctoral research activities. Macro-econometric modelling has given me a well-rounded picture and understanding of the entire macroeconomic system and the interrelationships between the different sectors of the economy. With this capacity, I have been able to identify crucial research questions/problems and also envisage how these problems may affect different sectors of the economy. In addition, I have acquired different econometric methodological skills which have served as an important tool necessary in answering my research questions. I have also been able to apply my research and econometric skills to policy-oriented research projects.

Based on this premise about my research activities, the topic of this lecture was crafted. Many policy models design to tackle the challenges facing Africa today have not yet incorporated the effect of institutional/governance infrastructure in it. Although policy debates on the poor state of institutional/governance and physical infrastructure in the continent has been ongoing for decades but there have been rare scientific link as to what extent this have affected the triple challenges (poverty, unemployment and inequality). In this milieu, I present to you a thorough analysis of the triple challenges facing Africa and how physical and institutional infrastructure can provide a turnaround. This analysis highlights the important policy implications of my past and current research and also serves as a template for the book I am proposing to write.

Section 2 is the analysis of the understanding of the triple challenges facing the continent. Section 3 provides an analysis of the effects of physical and institutional infrastructures on the triple challenges. It also describes the data used in the studies and provides an analysis of the thresholds of the triple challenges derived from the estimated models. Section 4 concludes and provides further policy recommendations.

## **2. Understanding the triple challenges**

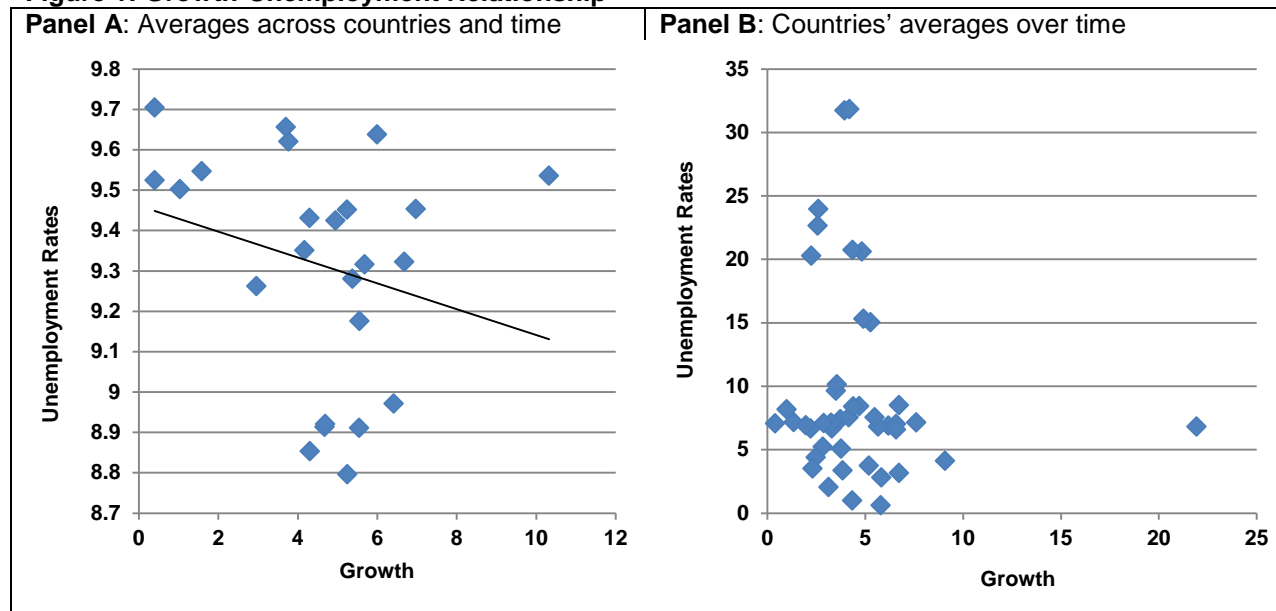
The 'triple challenges' often refer to the situation of high level of poverty, inequality and unemployment (non-inclusive economic growth), which have been classified as the major features of many developing countries and especially sub-Saharan Africa.

### **Beginning with unemployment challenge and its relation with growth.....**

Employment or unemployment rates have often been explained as the percentage share of the total number of employed or unemployed in the total labour force of a country. So, the dynamics of unemployment are largely dependent on a country's ability to generate employment and that also depends on the economic growth performance. This means that, as the economy records an increase in its economic growth/output, more employment opportunities should be created which should lead to lower unemployment rates (Okuns law). This scenario has been very weak over the years in most of the sub-Saharan African countries.

As depicted in Figure 1 (Panel A), high growth performance has not yet translated into substantial reduction in unemployment rates, giving rise to the popular term 'non-inclusive growth'. The growth-unemployment relationship as established by Okuns (1962) remains an empirical challenge for many sub-Saharan African countries. Looking at Figure 1 (Panel B), it is evident that many sub-Saharan African countries are still stuck in low growth and high unemployment rates – using the benchmark of 5 per cent as the natural rate of unemployment and above 5 per cent as the sustainable growth path.

**Figure 1: Growth-Unemployment Relationship**



Source: World Bank Databank and Author's Calculations

Given this, poverty clearly remains a big challenge to the development of Africa despite the United Nations' (UN) proclamation of overcoming this in its 2015 target of the millennium development goals (MDGs). Based on the MDGs definition, a person is considered poor when he or she lives on less than \$2 a day. This proclamation can be regarded as overcoming absolute poverty, yet many in SSA still do not earn \$2 per day. Therefore, relative and human poverty pose a huge challenge within the region.

In my view, relative poverty is the originator of inequality in society. Poverty becomes relative when incomes and living conditions of the next-door neighbour are being compared. For instance, in a society where the majority of the population live on less than \$2 per day and living conditions are similar across board, relative poverty may not be an important issue. The same applies to the level of inequality.

Human poverty can be described as the poverty of deprivation in the quality of life that is caused by other non-income factors. This type of poverty (as described in the UNDP Human Development Report, 1997) focuses on the essential elements of human life such as longevity, knowledge and a decent standard of living.

In addition, the society maybe absolutely poor, but the level of social cohesion may be very strong, given the high level of equality among the members of society. However, the relativity of poverty (in terms of income and living conditions) can be associated with the level of inequality in the society. This provides a strong justification of the link between poverty and inequality. The MDG target of eradicating absolute poverty has led to another disturbing global issue of rising relative poverty and inequality which is now part of the post-2015 sustainable development goals (SDG). The movement from MDGs

to SDGs has raised an important question, namely whether poverty causes inequality and vice versa.

The dynamics of inequality have also been the topic of a recent global discourse, especially in the policy arena. Income inequality has been the most popular measure of distribution of resources, leaving out the social aspect of inequality. In the quest for 'leaving no one behind' (has embedded in the SDGs), social inequality can be identified as one of the ways to strengthen social cohesion and achieve sustainable development. Social inequality in this context includes education inequality, health inequality and land inequality. All these are also associated with human poverty, making poverty and inequality an intertwined phenomenon.

Against this background, the nexus of the triple challenges facing Africa have revealed some important and interesting outcomes.

Using data for South Africa, the long-run relationships and causal effects existing between growth (unemployment), poverty (income and human), and inequality (income, education and land) were established in my recent study (Akanbi 2016). The existence of a long-run relationship between growth, poverty and inequality was confirmed for all of the different measures that were used in the study. Similarly, the causality tests revealed both bidirectional and unidirectional effects. The results confirm a bidirectional relationship between growth and income poverty, suggesting that growth can lead to a reduction in income poverty and vice versa, although the growth-elasticity of income poverty was found to be larger than the income poverty-elasticity of growth. With a unidirectional relationship between growth and non-income poverty, the importance of a sustainable growth path was confirmed, given that rising economic growth will lead to a reduction in human poverty. Bidirectional causality exists between growth and income inequality and therefore suggests that growth has not been promoting an equal distribution of income in society. However, as income distribution began to equalise, economic growth tends to pick up (known as 'growth-inequality disconnect').

With regard to other types of inequality, the causality indicated that growth causes land and education inequality and revealed that a rising level of growth will lead to a reduction in both education and land inequality. A unidirectional causality exists between income poverty and income inequality and suggests that a rising level of income poverty can lead to a decrease in income inequality in society. This sounds counterintuitive, but strongly suggests that even in the midst of a rising income poverty level, equality in income can still be achieved if the little wealth that is available is shared equally among the populace. At the same time a unidirectional causality exists between income poverty and education inequality. This implies that rising income poverty could hinder the majority of the populace from accessing education facilities. Another notable result from the study reveals that when income inequality increases,

human poverty declines. This implies that in the midst of rising income inequality, lower human poverty can still be achieved if the necessities of life are adequately provided.<sup>1</sup>

### **3. The effects of physical and institutional infrastructure on the triple challenges**

Based on the above general background on the nexus between poverty, inequality and unemployment, it is evident that the causes of the persistence of the triple challenges facing Africa today are similar. Over the years, many conventional policy models designed to tackle the triple challenges have not been able to address the peculiar socio-economics and institutional conditions facing the countries or regions. However, physical and institutional infrastructure have been one of the most important policy issues being debated both at a national and global level, although institutional infrastructure is also needed in achieving high-quality physical infrastructure. This situation has also been investigated and confirmed in one of my previous studies – Akanbi (2013) entitled '*Does governance matter in infrastructure: Evidence from sub-Saharan Africa*'.

But empirical studies on the effects of physical and institutional infrastructure on poverty, inequality and unemployment are limited. The analysis that follows, however, revealed the impacts of these two (physical and institutional infrastructures) variables on poverty, inequality and unemployment based on the findings of my previous and current research. These studies use a panel of selected major SSA countries and the model/estimations control for other major determinants of poverty, unemployment and inequality. The variables controlled for are GDP, human capital, financial and social inclusion, real interest rates, labour productivity, fiscal policy, human development, openness and domestic investment. The studies use a two-stage least square panel data estimation technique. To derive robust and valid coefficients, all possible estimation problems (i.e. endogeneity problem) were corrected.

#### **3.1. Data issues**

Physical infrastructure is represented by a composite index (PII), which is based on three infrastructure pillars of (i) roads, (ii) telecommunication, and (iii) electricity. The physical infrastructure, as defined in the studies, ranges from -2.5 to +6.5. Categorising the physical infrastructure index at different levels, the range between -2.5 and 0 corresponds to 'poor' infrastructure, between 0 and +3 corresponds to 'average' infrastructure and between +3 and +6.5 corresponds to 'good' infrastructure.

The worldwide governance indicators developed by Kaufmann et al. (1999) were utilised in these studies as a measure of institutions. The indices cover a broad range of policy and institutional outcomes for a large number of countries, and include the rule of

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<sup>1</sup> Result analysis is rephrased directly from Akanbi (2016).

law, corruption control, government effectiveness, regulatory quality, voice and accountability, and political stability. Institutions are captured in a broader context by taking the average value of the six elements in the governance indicators. The governance scores range from -2.5 to +2.5, and in order to categorise governance at different levels, the range between -2.5 and -1 corresponds to 'poor governance', between -1 and +0.5 corresponds to 'average governance' and between +0.5 and +2.5 corresponds to 'good governance'.

Due to the relativity and multidimensional nature of poverty, the studies adopted two common (income and non-income – human) measures from the literature. The basic Foster-Greer-Thorbecke (FGT) index (severity of poverty) is adopted as a measure of income poverty (Foster et al. 1984). The second measure of poverty (non-income measure) was adapted from the Human Poverty (HP) index developed by the United Nations Development Programme (UNDP) – Human Development Report (HDR) (1997).<sup>2</sup> Other variables used in the studies are taken directly from the World Bank Databank; African Development Indicators. Where necessary, interpolation and extrapolation of series were carried out due to missing data points.

### **3.2. Deriving the thresholds from estimated models of poverty, inequality and unemployment**

The estimated models of poverty, inequality and unemployment show that changes in the abovementioned determinants matter for the alleviation of poverty, reduction in inequality and unemployment. At the same time, institutional and physical infrastructure matter for reducing the level of poverty, inequality and unemployment; thus thresholds for the triple challenges are derived as a function of governance/institutions and physical infrastructure. Due to unavailability of data on social inequality for most of SSA countries, this study only captured income inequality dynamics.<sup>3</sup>

To derive these thresholds at a given level of institution and physical infrastructure ratings, averages across time and cross-sections for the entire dependent and independent variables were taken. These averages are substituted into the estimated equations of poverty, inequality and unemployment and repeatedly for the varying institution and physical infrastructure ratings. Therefore, for a given average GDP level ranging from US\$8 to US\$33 billion (Figure 2 to 4), countries with poor institutions and poor physical infrastructure ratings will sustain a higher level of poverty, inequality and unemployment, while those with good institutions and good physical infrastructure ratings will be able to sustain a lower level of poverty, inequality and unemployment.

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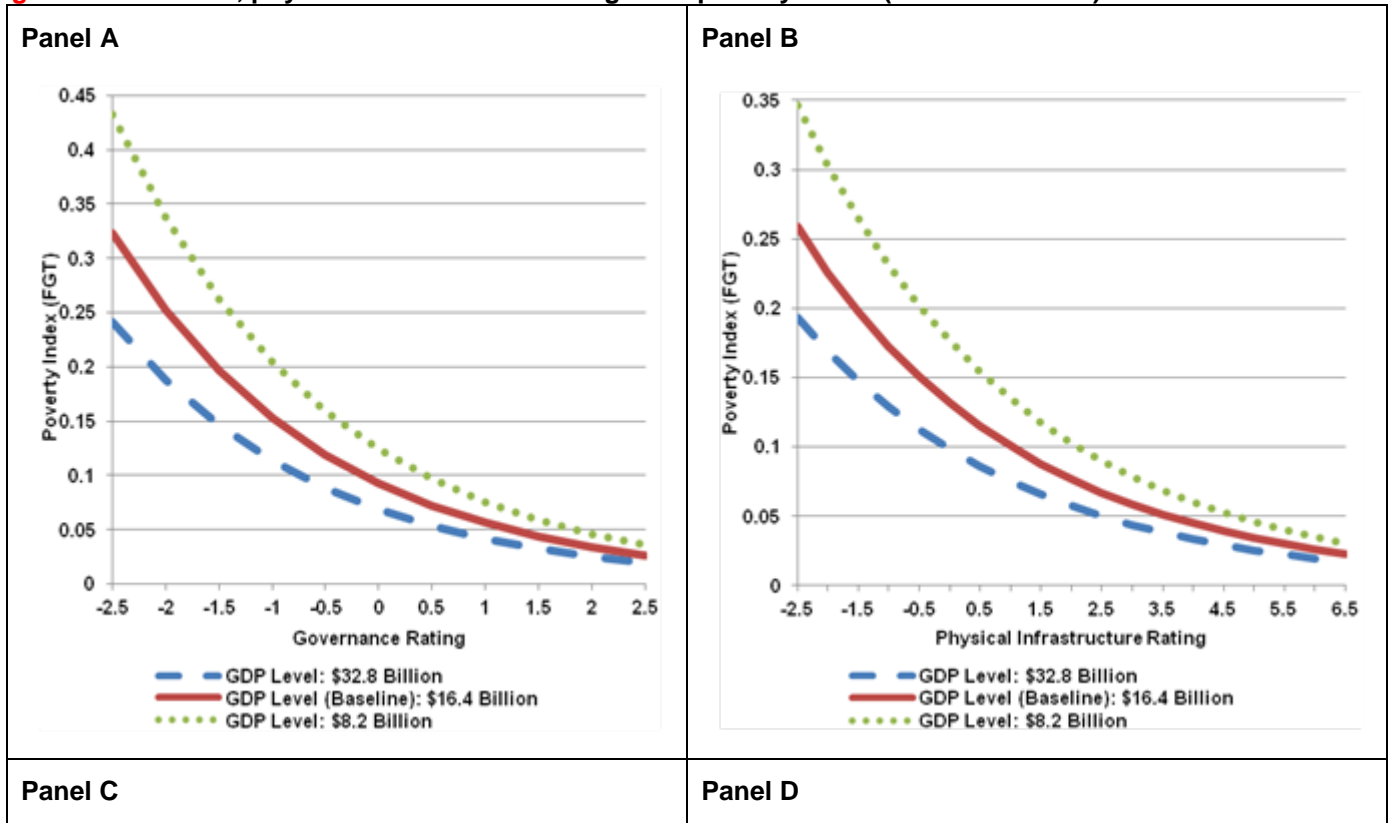
<sup>2</sup> See Akanbi (2013 and 2015) for detailed analysis of the derivation of physical infrastructure, institutional infrastructure and poverty measures.

<sup>3</sup> The social (education and land) inequality was captured for South Africa in one of my co-authored papers (Omilola and Akanbi, 2014).

### 3.2.1. Physical and institutional infrastructure and poverty dynamics<sup>4</sup>

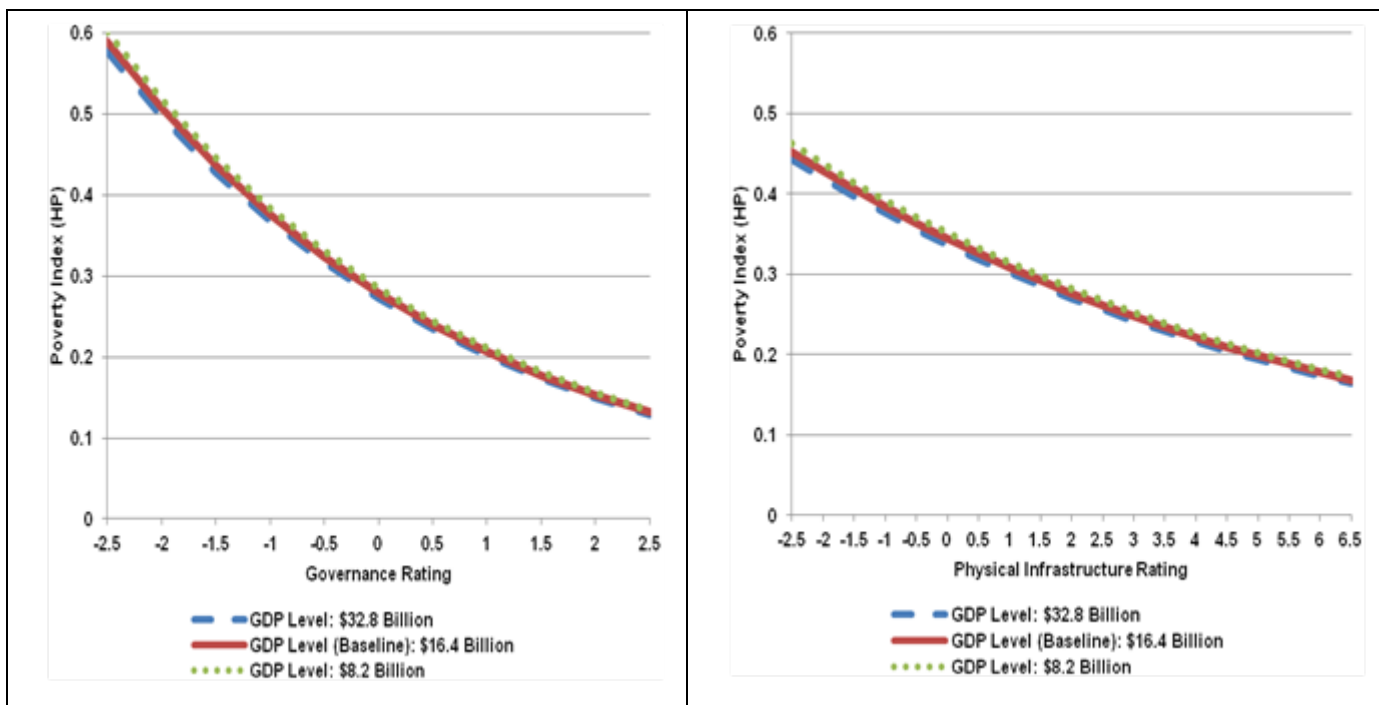
From Figure 2 it is clear that operating at a higher level of GDP will bring about a lower poverty level. In relation to income poverty (FGT measure), institutional and physical infrastructure in Panels A & B, there seems to be an existence of convergence in poverty as institutions and physical infrastructure improve. In these panels, irrespective of the level of GDP, poverty levels tend to converge at their lowest levels as good governance/institution and physical infrastructure are attained. The distinctive difference between Panels A & B is the fact that higher levels of poverty are feasible when a country is experiencing a deteriorating level of institutional infrastructure rather than decaying physical infrastructure. With the baseline GDP level, the poverty index will fall from 0.32 to 0.03 as better institutions are being pursued, while this will only fall from 0.26 to 0.02 with improved physical infrastructure (Panels A & B).

**Figure 2:** Institution, physical infrastructure ratings and poverty levels (FGT & HP Index)



<sup>4</sup> Analysis taken from Akanbi (2015)





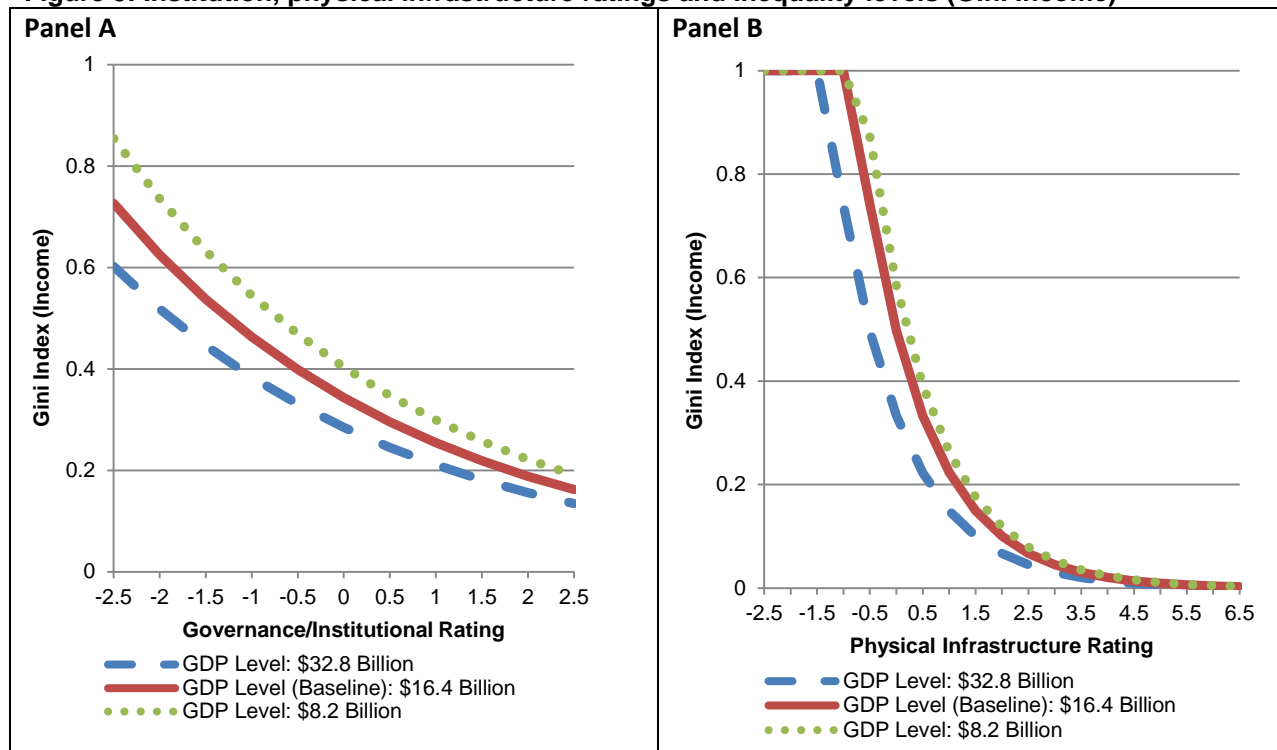
Source: Author's calculation and analysis of data from EViews 8 (Published in Journal of Human Development and Capabilities 2015)

With regard to human poverty (HP measure), institutional and physical infrastructure in Panels C & D, convergence could not be achieved. Instead, poverty levels seem to remain the same as GDP differs. Countries with higher levels of GDP will continue to alleviate poverty at the same rate even when physical infrastructure improvements and better institutions are the same as others. In contrast to income poverty in Panels A & B, a country with the best institutions will be operating at a lower human poverty than those with best physical infrastructure, and the rate of decline in human poverty level is faster when good institutions are pursued. With the baseline GDP level, the population that will be deprived (human poverty) will fall from 60% to 13% as better institutions are being pursued, while this will only fall from 45% to 17% with improved physical infrastructure (Panels C & D).

### 3.2.2. Physical and institutional infrastructure and inequality dynamics

In general, income (GDP) seems to matter in achieving lower inequality, especially at poor governance/institutions ratings and poor physical infrastructure ratings, but inequality tends to converge at zero when good physical infrastructure ratings are established.

**Figure 3: Institution, physical infrastructure ratings and inequality levels (Gini Income)**



Source: Author's calculation and analysis of data from Eviews 9

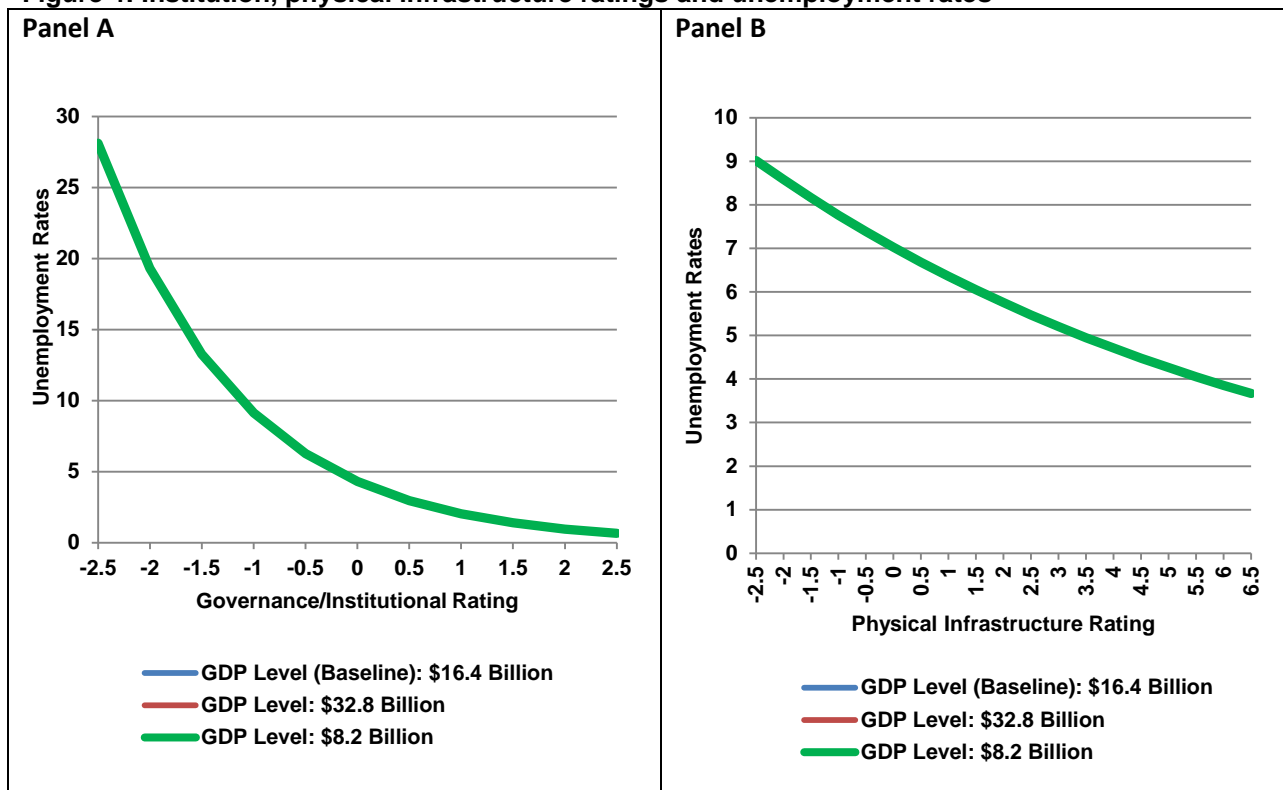
From Figure 3, operating at a higher level of GDP will bring about a lower inequality level. In relation to governance/institutions and physical infrastructure in Panels A and B, a convergence in inequality seems to exist as physical infrastructure improves, but convergence cannot be established as governance/institutions improves. In other words, irrespective of the level of GDP, income inequality tends to converge at a lower level as good physical infrastructure is attained, but at different levels when good governance/institutions is pursued. This means that income (GDP) matters in reducing income inequality through enforcement of good governance, but as good physical infrastructure is being established, lower inequality can be achieved irrespective of the level of income (GDP).

The distinctive difference between Panels A & B (operating from the baseline scenario) is the fact that inequality will start declining as soon as institution/governance rating begin to improve, while on the other hand, a country must have achieved some level of physical infrastructure development before experiencing a declining inequality. But inequality drops significantly as a country approaches an average physical infrastructure rating. In addition, given the baseline GDP level, the income inequality indices will fall from 0.76 to 0.16 as better governance is being pursued, while this will fall from 1 to 0 with improved infrastructure (Panels A & B).

### 3.2.3. Physical and institutional infrastructure and unemployment dynamics

From Figure 4, higher unemployment is associated with poor governance/institution and poor physical infrastructure ratings. In both panels (A & B), convergence could not be achieved; instead, unemployment levels seem to remain the same as GDP differs. Countries with higher levels of GDP will continue to reduce unemployment at the same rate even when physical infrastructure improvements and better institutions are the same as others. This outcome is similar to the human poverty dynamics analysed previously. An important feature of this unemployment threshold is that a country with the best institutions will be operating at a lower unemployment rate than those with best physical infrastructure, and the rate of decline in unemployment level is faster when good institutions are pursued. Unemployment could fall from as high as 30 per cent with the worst institutions rating to 0.67 per cent with the best institutions rating, whilst unemployment will only fall from a high of 9 per cent with the worst physical infrastructure to 3.7 per cent at the best physical infrastructure level.

Figure 4: Institution, physical infrastructure ratings and unemployment rates



Source: Author's calculation and analysis of data from Eviews 9

#### **4. Conclusion and policy recommendations**

The models of poverty, inequality and unemployment (triple challenges) have confirmed that institutional and physical infrastructures are required in addressing the persistently high levels of poverty, inequality and unemployment in Africa. The thresholds deduced from the studies show that both income and human poverty and the unemployment rate respond more swiftly to changes in governance/institutional performance than changes in physical infrastructure performance. Unemployment and poverty will approach a near-zero level when governance/institutional rating are at its best level. The response of inequality to changes in governance/institutional performance is slow when compared to its response to changes in physical infrastructure. Apart from not achieving a convergence, some level of inequality will still exist even when the governance/institutional rating is at its best level. On the other hand, inequality may be totally eradicated when the physical infrastructure rating is at its best level. This indicates that if good governance/institution can be translated into good physical infrastructure, inequality can be eradicated within society.

To address the triple challenges of high levels of poverty, inequality and unemployment in Africa, and in particular sub-Saharan Africa, it is evident that institutional and physical infrastructure not only matter, but that their improvement should be the necessary first step taken by policymakers. Africa's developmental agenda needs a paradigm shift from the conventional policy focus on macroeconomic objectives to firstly embedding strong and effective institutional and physical infrastructures within its economic system. This is not to say that macroeconomic objectives should be undermined, but rather that institutional and physical infrastructure are the key ingredients to achieving the macro objectives which will eventually address the triple challenges.

Rodrik, Subramanian and Trebbi (2004) affirm that institutions rule over all economic and social objectives of any nations. Therefore, without a solid institutional framework it may be almost impossible to address the triple challenges. I strongly believe in this line of thought and to eradicate poverty, inequality and achieve a low level of unemployment in Africa, institutional infrastructure, as highlighted below, needs to be embedded in the economic system:

- i. Corruption in society needs to be rooted out. (In other words, the extent to which public powers are exercised for private gain – either through petty and grand form of corruption or through state capture by the elites – needs urgent attention so that corruption could be eradicated from the system)
- ii. Citizens' voice should be heard and taken into account in decision-making. (To what extent are the citizens of a country able to participate in selecting their leaders, have freedom of expression, association and a free media?)

- iii. The rule of law needs to be properly established and practiced. (Citizens should have confidence in and abide by the rules of society, i.e. enforcement of contract, property rights, the police and the court)
- iv. The regulatory system must be strong and of high quality. (Government should be capable of formulating and implementing sound policies and regulations that will allow and promote private sector development.)
- v. Government must be effective and the people must feel its impact. (Government must ensure efficient delivery of public and civil services to its citizens and must make sure that policy pronouncements are independent of any political pressure);
- vi. There must be an assurance of political stability in the system (that is, an assurance that the government will not be destabilised or overthrown by unconstitutional or violent means).

Addressing the above institutional issues is paramount to addressing the triple challenges facing the continent and this has been confirmed by these empirical studies.

Africa does not need an alternative economic system to overcome its triple challenges but rather it needs alternative governance or institutional structures.

Africa needs both a good government and institutional structures but good government/leaders is only a necessary condition (but not sufficient) for overcoming the challenges facing Africa. The sufficient condition is entrenching better institutional structures. Strong institutions will create better government/leaders and at the same time, it is only a good and visionary government/leader that will strengthen the institutional structures.

### **Practical Instances.....**

Everyone is scared that Trump won the US election but with the strong institutional structures embedded in the US economy, the question then is 'is it about Trump, or about the US economy itself. It should be about the economy where transparency and accountability are part of day-to-day existence and or an economy where adherence to the rule of law is cultural. Therefore, trump may have ulterior motives but the system is there to check him. Since Trump won the election a week ago, we are all beginning to see some softness in his voice. This is beginning not to look like TRUMP but the system and the establishments speaking through him.

Another instance is Nigeria. President Buhari was elected into office on the basis that he is an upright and no nonsense man. But poor institutional structure has been failing President Buhari –as reflected from the corrupt establishment through which he came to power and the choice of his cabinet Ministers. This is President Buhari's second year in office and Nigerians are confused and cannot even deduce whether they are moving forward or backward. Poor institutions and or corruption has put the country into a halt

(current recession) to the extent that the citizens are now clamouring for the return of the corrupt governments (life was better during corruption) but not recognising that it was that corruption that took them to where they are today. President Buhari may have good intension for Nigeria but he will need more than a decade to clear the institutional mess and thereafter economics will begin to make sense.

Coming closer to home, –South Africa. Thanks to the relatively strong institutions that have been built into the economy. These have been the life safer for South Africa. Am sure President Zuma will wish he should have been the President of any other African country. South Africa is currently fighting a war against institutional destruction which many other African countries (i.e. Nigeria) do not have the opportunity to fight for because institutions were destroyed by the power of the gun (the military). So there was no opportunity for dialogue in these countries when the military were systematically destroying the judiciary and the universities –intellectual think tanks. But South Africa is in a better position (better political climate) today not to allow this to happen. If institutions are destroyed the economy is destroyed....

#### **Final conclusion.....**

My unequivocal conclusion is that economic theories and their applications may not be visible and implementable in Africa if the institutional and physical infrastructure constraints are still embedded in the system.

I end with this: institutions rule over all economic objectives. Therefore, Africa needs an alternative institutional structure and not alternative economic system.

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