‘TRENDS, CHALLENGES AND PROSPECTS: IMPACT OF FDI, IMPORTS AND REMITTANCES ON ECONOMIC GROWTH; THE ROLE OF INSTITUTIONS ON GROWTH IN SUB-SAHARAN AFRICA’

PhD THESIS

Charles MENSAH

Eskişehir, 2018

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PhD THESIS

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March, 2018

FINAL APPROVAL FOR THESIS

This thesis titled '**Trends, Challenges and Prospects: Impact of FDI, Imports and Remittances on Economic Growth; The Role of Institutions on Growth in Sub-Saharan Africa**' has been prepared and submitted by **Charles MENSAH** in partial fulfillment of the requirements in "Anadolu University Directive on Graduate Education and Examination" for the Degree of Doctor of Philosophy (PhD) in Economics at the Economics Department has been examined and approved on 12/03/2018

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ABSTRACT

‘TRENDS, CHALLENGES AND PROSPECTS: IMPACT OF FDI, IMPORTS AND REMITTANCES ON ECONOMIC GROWTH; THE ROLE OF INSTITUTIONS ON GROWTH IN SUB-SAHARAN AFRICA’

Charles MENSAH

Department of Economics

Anadolu University, Graduate School of Social Sciences, March 2018

Supervisor: Prof. Dr. Mustafa ÖZER

The study is a compilation of three linked articles focused on Africa. The first paper ‘Africa’s economy; trends, challenges and Prospects’ sought to achieve the following objectives; To identify the leading economies in Africa and the dynamics of their economies that are boosting growth, to identify the challenges of Africa’s development, and to identify prospects and opportunities in Africa. It was shown in this study that economic growth and capital formation exhibited similar trend movement and direction. Nigeria, South Africa and Egypt were considered as top three largest economies in Africa in terms of GDP size. These economies had a strong contributing sector like Service Sector, Agriculture Sector and Mining Sector. The study identified Corruption, Poor Infrastructure, Political Instability, Capital flight and Tax evasion as the major challenges of

Africa's development. Energy, Agriculture, and Infrastructure sectors in Africa were identified as having great prospects and potentials to enhance growth in Africa.

Also, the second paper 'A panel analysis of the impact of Foreign Direct Investments, imports and foreign remittances on the African economy; an ARDL approach' used a data of 30 African countries from the period of 2000 to 2015. The following were the specific objectives of this study: To examine the long run and short run effects of FDI, imports and remittances on GDP growth in Africa, to examine the existence exist a long run co-integration among economic growth, FDI, remittances, and imports, and to examine the causal relationships that exist between economic growth, FDI, remittances, and imports. A panel ARDL (2, 2, 2, 2) was selected to as the best fit model with the least AIC. One important finding was the presence of a long run cointegration that existed between economic growth, FDI, imports, and foreign remittances. Also, in the long run, FDI and imports had a positive impact on economic growth levels in Africa. Remittances, however, had a significant but negative effect on economic growth. The study also found a unidirectional causality flowing from growth to FDI, imports to growth, FDI to imports, and remittances to imports.

The third article 'The role of institutions in the economic growth of SSA' examined the role institutions play on economic growth in SSA. Using a sample of 36 SSA countries with data from 1996-2015, the study considered the effect of institutions on SSA as a whole and among LICs, LMICs, Upper Middle and High-income countries in SSA. The study applied the Difference GMM and found the following: institutions to be relevant in explaining economic growth in SSA and among LICs, economic institutions and political stability were necessary to foster growth. Also, Legal institutions, regulatory quality and corruption control have significant impacts on growth among LMICs. Interactions between institutions in some cases are needed for economic growth across the different income brackets. For Upper Middle and High-income countries, interactions between government effectiveness and rule of law are necessary for growth.

KEYWORDS: Africa, Growth, Panel Data, Institutions

DOKTORA TEZ ÖZÜ

‘AFRİKA EKONOMİSİNİN EĞİLİMLERİ, ZORLUKLARI VE BEKLENTİLERİ; DOĞRUDAN YABANCI YATIRIMLARIN, İŞÇİ DÖVİZİ GELİRLERİ VE İTHALATIN EKONOMİK BÜYÜME ÜZERİNDEKİ ETKİLERİ, KURUMLARIN BÜYÜMEDEKİ ROLÜ’

Charles MENSAH

İktisat Anabilim Dalı – İktisat Bölümü

Anadolu Üniversitesi, Sosyal Bilimler Enstitüsü, Mart 2018

Danışman: Prof. Dr. Mustafa ÖZER

Bu tez Afrika ekonomileri üzerine birbiri ile bağlantılı üç makaleden oluşmaktadır. Afrika ekonomisi; eğilimler, zorluklar ve Beklentiler başlıklı ilk makalede Afrika’nın önemli ekonomilerinin büyüme dinamikleri, büyümenin önündeki engeller ve bu ekonomilerin gelecekte sunabilecekleri fırsatlar değerlendirilmiştir. Çalışmada ayrıca Afrika ekonomilerinin kalkınmasının önündeki en büyük engeller olarak yolsuzluk, altyapının yeterli olmaması, politik istikrarsızlıklar, sermayenin kıta dışına kaçması ve vergi konusundaki yolsuzluklar ön plana çıkmıştır. Afrika ekonomilerinin büyüme potansiyellerinin arttırılabilmesi için enerji ve tarım sektörü yatırımları başta olmak üzere altyapı yatırımlarının arttırılması son derece önem taşımaktadır.

"Doğrudan Yabancı Sermaye Yatırımları, ithalat ve işçi dövizi gelirlerinin Afrika ekonomileri üzerindeki etkilerinin panel veri analizi: ARDL yaklaşımı”. Bu çalışmada 2000 ile 2015 yılları arasında 30 Afrika ülkesine ait yıllık verilerle ARDL sınır testi yaklaşımı kullanılarak

Doğrudan Yabancı Sermaye Yatırımları, ithalat ve işçi dövizi gelirleri ile Afrika ekonomilerinin büyümeleri arasında uzun dönemli bir denge ilişkisi olup olmadığı incelenmiştir. Çalışmanın en önemli bulgusu, Afrika ekonomilerinin ekonomik büyümesi ile Doğrudan Yabancı Sermaye Yatırımları, ithalat ve işçi dövizi gelirleri arasında eş bütünleşme ilişkisi olduğudur. Ayrıca, elde edilen sonuçlara göre doğrudan yabancı sermaye yatırımları ile ithalatın büyüme üzerindeki etkisi uzun dönemde pozitiftir. Bununla birlikte, işçi dövizi gelirleri, ekonomik büyüme üzerinde önemli ancak olumsuz bir etkisi olmuştur. Çalışma aynı zamanda büyümeden Doğrudan Yabancı Sermaye Yatırımlara, ithalattan büyümeye, Doğrudan Yabancı Sermaye Yatırımlardan ithalata ve ithalata yapılan işçi dövizi gelirlere akan tek yönlü bir nedensellik bulmuştur. Ayrıca, doğrudan yabancı yatırımın Afrika'daki ekonomik büyümeye neden olduğu tespit edildi.

Üçüncü makalede ise "Sahra Altı Afrika Ülkelerinin (SSA) ekonomik büyümesinde kurumların rolü", araştırılmıştır. Bu amaçla 1996-2015 arası 36 SSA ülkesine ait yıllık veri kullanılmıştır. Çalışmada hem bir bütün olarak SSA ülkelerinin, hem de LİC'ler, LMIC'ler, Üst Orta ve Yüksek gelirli ülkeler büyümesi üzerinde kurumların etkisi araştırılmıştır. GMM yöntemi ile yapılan tahmin sonucunda şu bulgular elde edilmiştir: her şeyden önce, iktisadi kurumlar ve siyasi istikrar büyümeyi hızlandıran temel etkenlerdendir. Ayrıca, LMIC için, yasal kurumlar, düzenlemeler ve yolsuzlukla mücadele büyüme üzerinde anlamlı etkilere sahiptir. Yüksek orta gelirli ve yüksek gelirli ülkeler için iktisadi büyümeyi artıran faktörlerden birisi de kurumlar arasındaki etkileşimlerdir. Örneğin, hukukun üstünlüğü ile kamunun etkinliği arasında etkileşime gereksinim vardır.

Anahtar Kelimeler: Afrika, Büyüme, Panel veri, Kurumlar

ACKNOWLEDGEMENT

I am grateful to God, the Creator and Protector of all mankind and to whom I owe my very existence. His direction, care and love kept me throughout the entire PhD programme. This research study could not have been successful without the help from the following; First, I extend a warm gratitude to the Graduate School of Social Sciences, Anadolu University, for providing me with superb lecturers who shared their time and resources with me.

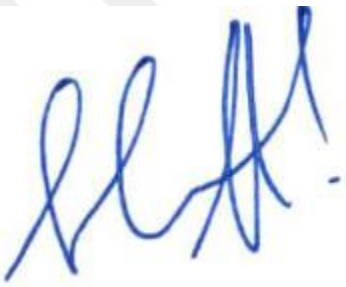
Second, I will like to show my profound gratitude to the entire Mensah family especially, Mr. F.K. Mensah Aborampah and Mrs. Philomena Buadoo. Their unflinching love and support throughout my education is highly commendable. God bless you all. My third acknowledgement goes to my thesis Advisor, Prof. Dr. Mustafa Özer for providing me insights that guided and challenged my thinking, and this helped to improve this thesis work. I am grateful to you for being a great lecturer, mentor and a good friend to me. Also, I am grateful to the thesis committee members for providing me with assistance in various forms that helped in the fruition of my study. Their constructive criticisms have helped in the success of this study.

To the entire Jury members, I say God bless you for being there to point out my errors and suggesting ways to make this work better. A big thank you also goes to the entire the Economics Department staff for all their various forms of assistance throughout my study.

I will also like to acknowledge a friend and brother, Mr. Ahmet Yiğittepe for all his support and encouragement during my stay in Turkey. To my friends and the entire PhD Economics class of 2014-2018, I say God richly bless you for making my stay a memorable one.

STATEMENT OF COMPLIANCE WITH ETHICAL PRINCIPLES AND RULES

I hereby truthfully declare that this thesis is an original work prepared by me; that I have behaved in accordance with the scientific ethical principles and rules throughout the stages of preparation, data collection, analysis and presentation of my work; that I have cited the sources of all the data and information that could be obtained within the scope of this study, and included these sources in the references section; and that this study has been scanned for plagiarism with "scientific plagiarism detection program" used by Anadolu University, and that "it does not have any plagiarism" whatsoever. I also declare that, if a case contrary to my declaration is detected in my work at any time, I hereby express my consent to all the ethical and legal consequences that are involved.



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(Signature)

Charles MENSAH

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SYMBOLS AND ABBREVIATIONS

β- Beta

σ- Sigma

ρ- Rho

FDI- Foreign Direct Investment

GDP- Gross Domestic Product

ARDL- Autoregressive Distributed Lag

GMM- Generalized Method of Moments

PPP- Purchasing Power Parity

JSE- Johannesburg Stock Exchange

MENA- Middle East and North African countries

MVA- Manufacturing Value Added to GDP

IVA- Industry Value Added to GDP

SVA- Service Value Added to GDP

HDI- Human Development Index

GNI- Gross National Income

ANRC- African Natural Resources Centre

OECD- Organization for Economic Co-operation and Development

VAR- Vector Autoregressive model

ODA- Official Development Assistance

CNN- Cable News Network

ICT- Information Communication Technology

IT- Information Technology

HDI- Human Development Index

TPLF- Tigray People's Liberation Front

UNICEF- United Nations Children's Fund

UNCTAD- United Nations Conference on Trade and Development

IFAD- International Fund for Agricultural Development

IMF- International Monetary Fund

CADF- Co-variate Augmented Dickey Fuller

DF- Dickey Fuller

LLC- Levin, Lin and Chu

IPS- Im, Pesaran and Shin

CIPS- Cross-sectional augmented IPS

PMG- Pooled Mean Group

MG- Mean Group

AIC- Akaike Information Criterion

ECT- Error Correction Term

CD- Cross-section Dependence

SSA- Sub-Saharan Africa

OLS- Ordinary Least Squares

LIC- Low Income Countries

LMIC- Lower Middle-Income Countries

NGO- Non- Governmental Organizations

AR- Autoregressive Process

VA- Voice and Accountability

PS- Political Stability

GE- Government Effectiveness

RQ- Regulatory Quality

RL- Rule of Law

COR- Control of Corruption

EF- Economic Freedom

K- Physical Capital

H- Human Capital

AB- Arellano- Bond

REM- Remittance

CHAPTER ONE

1. INTRODUCTION

The continent Africa in recent times has been hailed as one of the fastest growing continents in the world (Mensah and Özer, 2016). As a result, this has brought tremendous attention to Africa's economic growth dynamics, challenges, prospects and several types of research on how to sustain and enhance its growth to end poverty.

The aim of this dissertation is to take a holistic view on the dynamics of growth, identify its challenges and prospects, examine the impact of Foreign Direct Investment (Inflows), imports and foreign remittances in Africa, and also examine the role institutions play in contributing to its growth. To achieve this, the study was divided into three (3) separate but interlinked articles and applied different panel methodologies. The first paper (Chapter One) which has been published focuses on the topic '' Africa's economy; trends, challenges and Prospects'' seeks to achieve the following objectives-; To identify the leading economies in Africa and the dynamics of their economies that is boosting growth, to identify the challenges of Africa's development, and to identify prospects and opportunities in Africa. This chapter is arranged in six sections. Section one (1) entails the introduction, research questions and research objectives. Section (2) also talks about the leading economies in Africa whiles section three (3) details on the factors that enhance Gross Domestic Product (GDP) growth in Africa. Section four (4) touches on the impact of corruption in Africa, poor infrastructure, capital flight, tax evasion and tax avoidance as some of the major challenges that impede Africa's growth and development. The prospects in the energy, agriculture and infrastructure sectors of the economy are largely discussed in section five(5) whiles section (6) summarizes and gives policy recommendations

The second paper (Chapter two) takes a look at the impact of FDI, imports and remittances on Africa's economic growth. To achieve this, the study applied a Panel Autoregressive Distributed Lag (ARDL) approach on a data of 30 African countries from 2000-2015. The objectives of this paper are as follows: To examine the long run and short run effects of FDI, imports and remittances on GDP growth in Africa, to examine the existence exist a long run co-integration among economic growth, FDI, remittances, and imports, and to examine the causal

relationships that exist between economic growth, FDI, remittances, and imports. This paper applies the second-generation unit root test based on the confirmation of cross-sectional dependency from the Pesaran Cross Dependency (CD) tests, Pesaran scaled LM test and Breusch-Pagan LM tests. The panel ARDL was used to examine the long run and short-run dynamics of the model and some policy measures were suggested based on the findings of the study. The paper also describes the step by step approach to the methodology used. The Dumitrescu Hurlin Panel causality test is also applied to establish the causal relationship existing between the growth, FDI, imports, and remittances in Africa. The paper ends with a conclusion and policy recommendations based on the research findings.

The third paper (Chapter three) of this thesis examines the role of institutions in the economic growth of Sub- Saharan Africa (SSA). The paper makes a unique contribution to literature by looking at the effect of the various institutions (political, economic, and legal) on economic growth and at various level of income brackets (low income, lower middle, upper middle and High-income countries) in SSA. With data from 1996-2015, a panel data of 36 SSA countries were considered and the Difference Generalized Method of Moments (GMM) was applied. Institutions-augmented Solow model developed by Tebaldi and Mohan, (2008), and revised by (Kilishi, *et al.*, 2013; Combey, 2017) was used as the model framework. The paper ends with results presentation, conclusion and policy recommendations based on the findings from the study.

The last chapter (Chapter four) of the thesis comprises of the general summary, conclusion and a consolidated list of the policy recommendation from all the articles.

1.1. Africa's Economy; Trends, Challenges, Prospects and Potentials

In recent times, Africa, the continent once branded as the ''*Dark Continent''* is now considered as the fastest growing continent in the world (AfDB, 2013). In a world that has been severally hit by the global crisis, Africa has remained resilient and has shown great promise of improvement. Though there are some challenges facing the continent, macroeconomic indications make bare the fact that the African continent is full of opportunities.

The early 1960s was a fresh start for Africa as some of the countries gained political freedom from colonial rule that existed for more than 100 years. This saw the people of Africa take charge

of their economy in order to provide good governance and manage resources efficiently for growth to take place. Since then, all nations in Africa have been pursuing economic growth with the aim of increasing the capacity to produce goods and services, which will have a positive impact on national income and improve the level of employment resulting in higher living standards. The average real growth rate for the world for the past 53 years (1962-2014) stood around 3.8 whiles Africa's real Gross Domestic Product (GDP) rate was recorded as 3.9 for the same year period (World Economics, 2016).

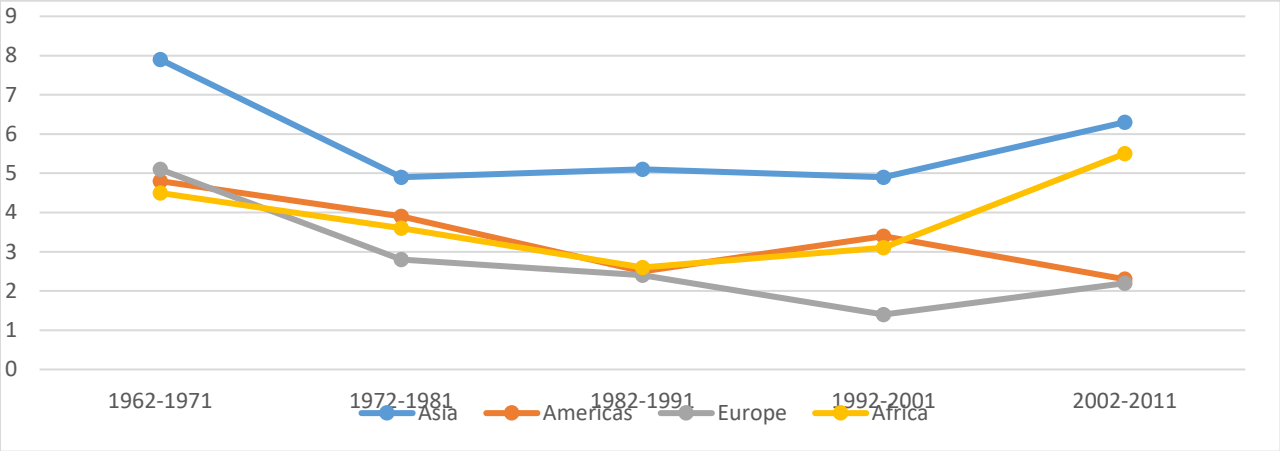

Figure 1.1: *Real GDP Growth of Continents from 1962-2011*
Source: (World Economics, 2016)

Out of about 18 nations in West Africa, about 8 of them (Ghana, Nigeria, Togo, Benin, Cote d'Ivoire, Liberia, Sierra Leone and Gambia) grew at a growth rate above 5% in 2013. Except for Uganda, all the other East African nations grew above 4.5% in 2013 with Tanzania's economy growing exceptionally at 7.2%. The story of economic growth was a bit different in the Northern zone of Africa in 2013 as a result of the political instability that had arisen in most Arab nation. With Morocco being the only outlier of growth about 4.7%, the other countries in North Africa recorded growth of about 2-3% in 2013. South Africa, Africa's most industrialized country recorded an economic growth of about 2.21% whiles Botswana led the sub-region in terms of rate of growth with about 9.3% in 2013. This scenario perfectly fits what economists term convergence or ''catch-up''. This literally means that poorer countries have a tendency of growing faster than richer countries (Barro and Sala-i-Martin., 1992). In 2012, most low-income countries had output growth that was more than 4.5%. A study by the Africa Development Bank indicated that 26 out

of 54 countries in Africa have earned the middle-income status and there are projections by the World Bank that if current trends continue, most African nations will earn middle -income status by 2025 (AfDB, 2013; Devarajan and Fengler, 2012)

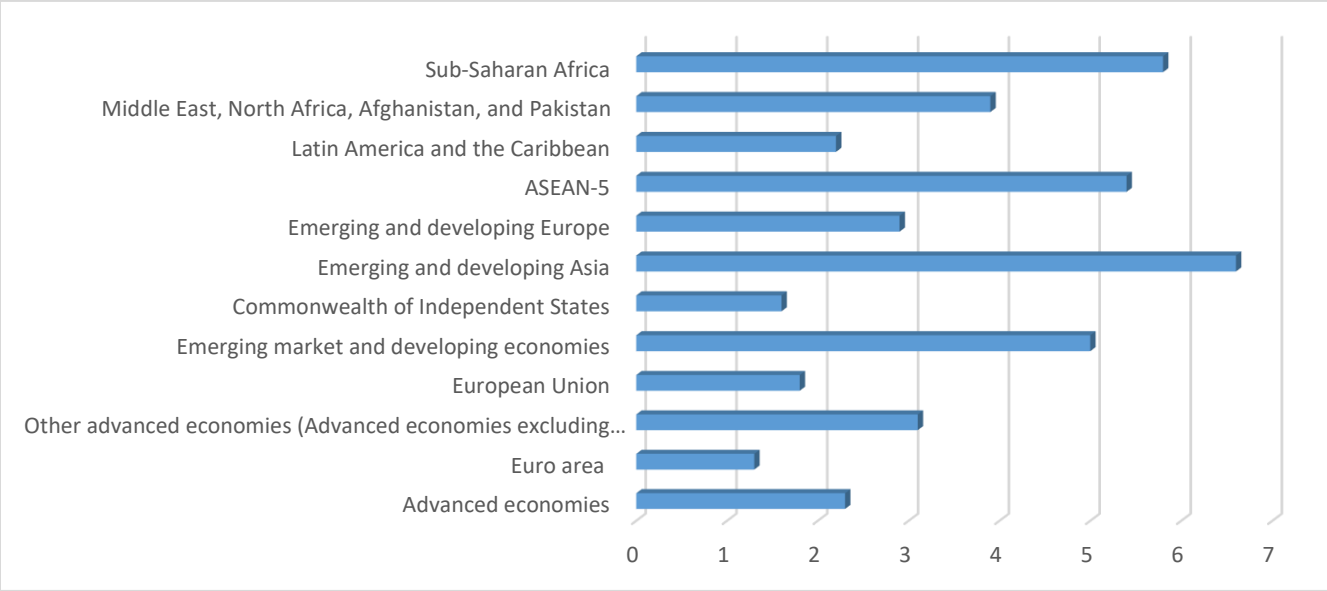

Figure 1.2: *GDP Growth in 2015*
Source: IMF Outlook

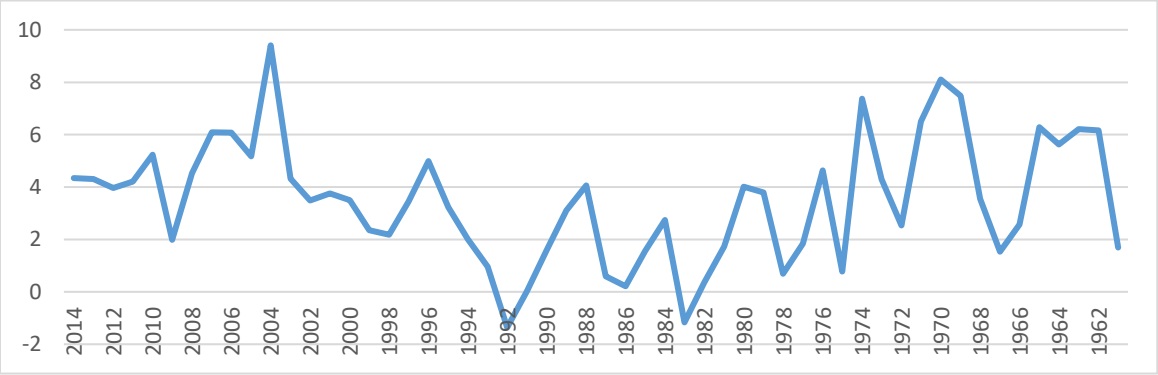

Figure 1.3: *Growth Trend in Sub- Sahara Africa (SSA) from 1962-2014*
Source: World Bank Development Indicators

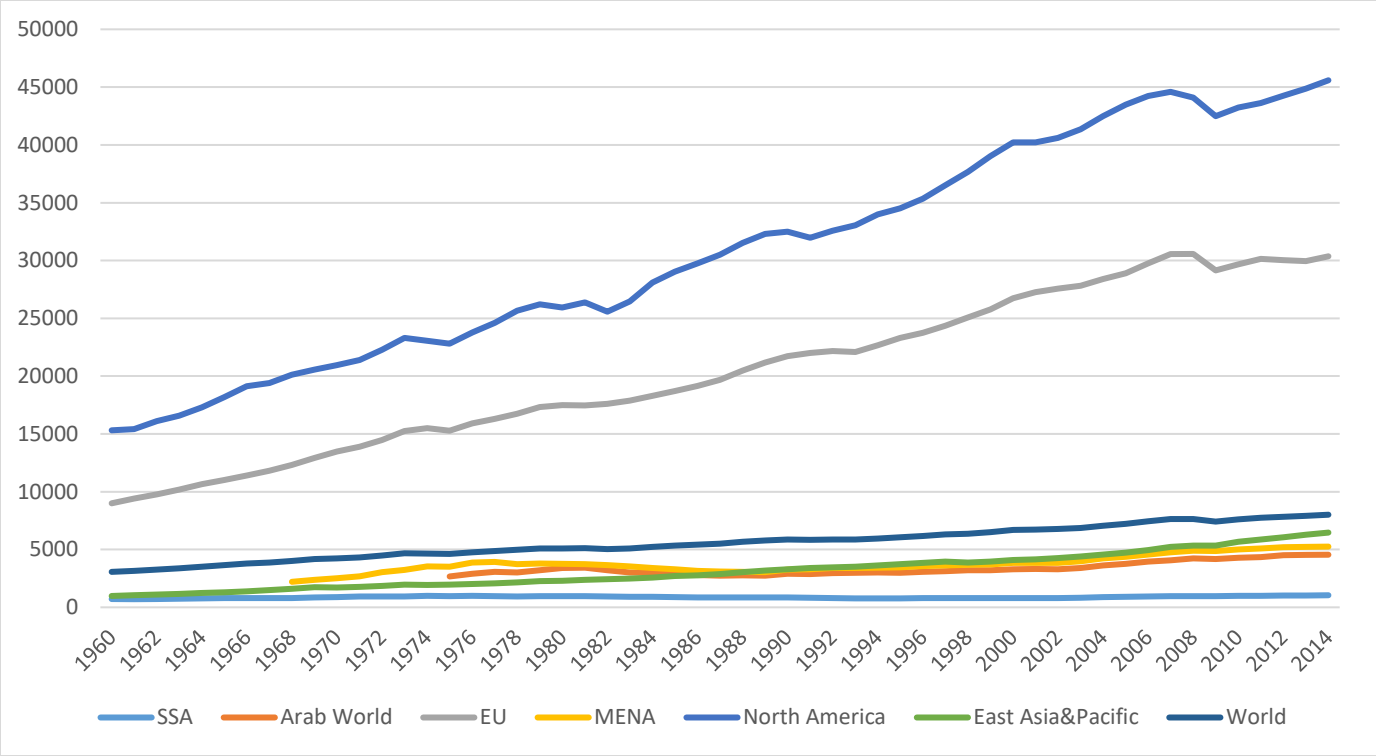

Figure 1.4: *Global Trends of Per Capita Income*
Source: World Bank Development Indicators (GDP per Capita- Constant 2005 $USD)

The GDP per capita line graph (Figure 4) above tells the story of how SSA and other regions of the world have fared in terms of dividing output with the mid population over the years. Since 1960, SSA has been the least GDP per capita contributor. With a total population of about 228 million people, SSA's GDP per capita stood at $707.4 whiles the world average per capita income was about $3000 (a difference of roughly $2358). Though other continents like North America were outliers with per capita income starting from $15312 in 1960, it is important to note that SSA has been gradually rising in per capita income. Currently, with a population of about 970 million, when SSA's income is shared amongst the populace, every African will averagely earn $1044 according to the World Bank (2014) which is still about 87% below the world average but a significant improvement since 1960. From 1960 to 2014, SSA has increased about 47.67% in terms of output per capita (World Bank, 2015)

Trade, Industry expansion, Agriculture, Natural resource and Human Capital has been the backbone of the enviable economic growth of Africa in recent years. Most countries are shifting from traditional methods of farming to industrialized agriculture. Also, trade liberalization in

Africa and inter-trade with other continents of the world has also increased the capital stock of the continent. Africa can also boast of it being the richest continent in terms of natural resource abundance. However, the radical growth of the economy has been spearheaded by some ''*Giant*'' economies of Africa through the increase of trade, telecommunication, banks, agriculture and production of goods and services.

Table 1.1: *Largest Economies In Africa By GDP Estimations*

	GDP (Nominal)					GDP (PPP)				
Country	2013	2014	change	Africa rank	World rank	2013	2014	change	Africa rank	Word rank
Nigeria	521.82	573.652	51.84	1	21	972.646	1049.091	76.445	1	21
South Africa	366.236	350.082	-16.154	2	33	683.962	704.514	20.552	3	29
Egypt	271.427	286.435	15.008	3	39	909.823	943.052	33.229	2	25
Algeria	208.764	214.08	5.316	4	48	522.314	551.809	29.495	4	33
Angola	124.169	128.564	4.395	5	61	166.105	175.641	9.536	6	64
Morocco	103836	109.201	5.365	6	62	241.677	252.366	10.689	5	56
Sudan	66.481	73.816	7.335	7	69	151.693	159.123	7.43	7	69
Kenya	55.241	60.77	5.529	8	74	123.965	132.406	8.441	9	72
Ehiopia	46.643	52.335	5.692	9	79	129.131	144.57	15.439	8	72
Tunisia	46.995	48.553	1.558	10	82	119.734	124.274	4.54	11	77

Source: IMF World Economic Outlook 2015

From now onwards, the paper refers to SSA as countries with the exclusion of the Northern Arab African countries and Africa as the encapsulation of all countries in the continent.

1.2. Research Questions

The study seeks to find solutions to the following research questions;

1. What are the economic sectors that are driving output growth in the leading economies in Africa?
2. What are some of the factors positively affecting economic growth in Africa?
3. What are the challenges causing setbacks in Africa's development?
4. What are the prospects and opportunities Africa hold?

1.2.1. Research Objectives

The main objective of this paper is to identify the trends of economic activities and growth after colonial rule in Africa.

The specific objectives are;

- To identify the leading economies in Africa and the dynamics of their economies that is boosting growth
- To identify the challenges of Africa's development
- To identify prospects and opportunities in Africa

The study is structured according to the following: Section 2 describes the three leading economies in Africa, Section 3 elaborates on the trends of factors of production, Section 4 expatiates on the challenges facing economic growth in Africa, Section 5 expatiates on the prospects and opportunities in Africa, and Section 6 elaborates on the summary, conclusion and policy recommendations.

1.3. Leading Economies in Africa

Based on the size of GDP in nominal terms, this section categorizes the three largest economies in Africa. Also, it talks about the sectors driving growth in these countries and their various characteristics.

1.3.1. Nigeria

With about 87% of the population being under age 50, Nigeria is the most populated country in Africa. In 2014, Nigeria's population stood around 178 million (AfDB, 2013). It is currently the largest continent in Africa with a GDP of $568.5 million and a GDP per capita of about $2,970 in 2014 (World Bank, 2014). Annual GDP growth hovered around 6%, the non -oil sector of the economy continues to be its leading force. Services is the highest contributor of economic growth in the non-oil sector with a contribution of about 57% whiles sectors like the manufacturing and agriculture contributed 9% and 21% respectively (Barungi *et al.*, 2015). With recent unrest at the oil drilling centres and the decline in oil prices, the non-oil sector is projected to lead the medium and long-term economic growth in Nigeria.

According to National Bureau of Statistics (Nigeria), (2010), the agricultural sector employs about 30% of the working populace in Nigeria. Cassava, Yam maize, Sorghum and Rice are some of the crops grown in the country. From the Food and Agriculture Organization (Statistics division), Africa produced about 54.7% of the average total cassava production from 2010 to 2014 (FAOSTAT, 2016). Nigeria leads cassava production in Africa by producing about 40 million tonnes of cassava out of the 141 million tonnes of cassava produced in Africa from 2010-2014. The country is also the second largest producer of Cashew nut from 2010-2014 with an average production of 878,000 tonnes in that period. Even though Africa produced an average of about 70 million tonnes of maize which constitute 7.5% of the average total population of maize from 2010-2015, Nigeria produced about 8.8 million. The country also falls fourth place in the production of oil palm from 2010-2014 after Indonesia, Malaysia and Thailand. Though Nigeria has a huge meat production impact in Africa, its insignificant in comparison to other countries like Brazil, China, Germany and USA.

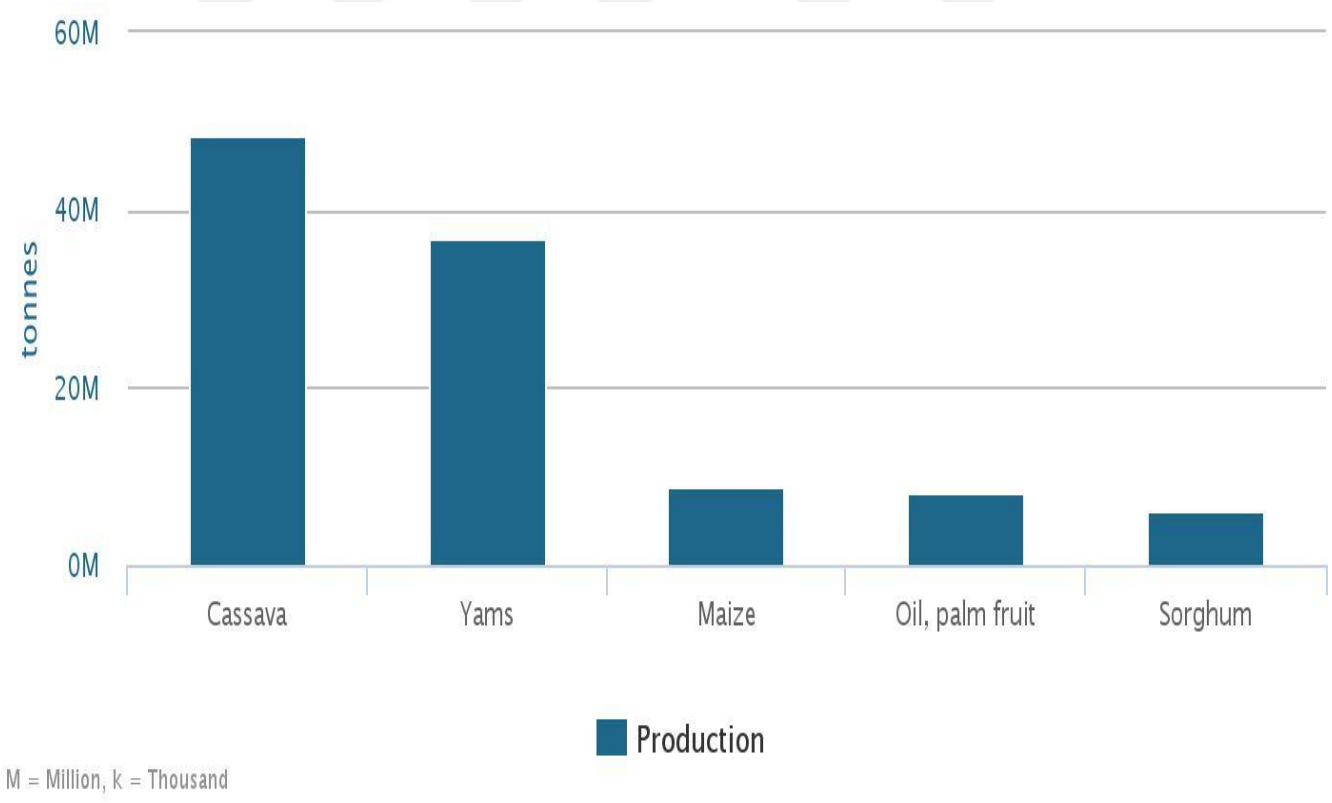

Figure 1.5: *Highest Crop Produced From 2010-2014 In Nigeria*
Source: FAOSTAT (2016)

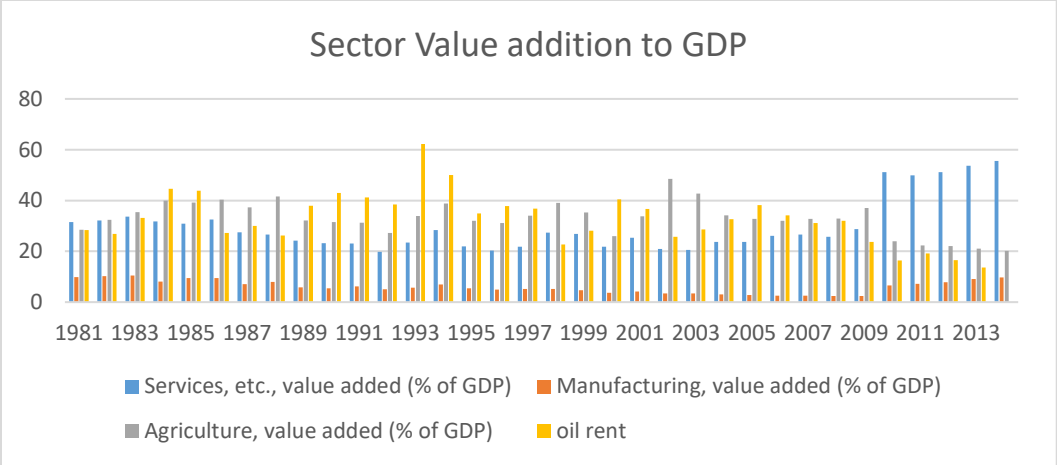

Figure 1.6: *Share of Value Added to GDP in Nigeria*
Source: Author's computation from World Bank Development Indicators

Figure 1.6 above clearly indicates the trend in value added by agriculture to GDP from 1980-2014. Agriculture contributed about 28% of value addition to Nigeria's GDP in the early 1980s and kept rising to about 41% in the late 1980s. It started to decline steeply in the 90s as a result of the civil wars and rose to its highest peak of about 49% value addition to GDP in 2002. Since 2010, the agriculture sector value addition has declined greatly because of the fall in commodity prices. In 2014, the value added as a percentage of GDP stood at 20% but there is hope for improvement as there are investment in machinery lately. The oil sector also contributes about 28% to GDP in the early 1980s and rose to its ultimate height of above 60% share to GDP in 1993. However, the story has changed in recent times with drastic decline in world oil prices. For instance, in 2013, the oil sector contributed about 14% to Nigeria's GDP. Nigeria also prides its self with the recent boom in the service sector contributing well above 50% to GDP since 2010 after the rebasing. Telecommunication, Commercial Banks and other service providers have strongly characterised the present economy of Nigeria. This mixed nature of Nigeria's economy makes it robust and buoyant.

1.3.2. South Africa

With a population of about 54 million people, South Africa is the second largest economy in Africa and can boast of GDP of about $350 million making it 33rd in the world (World Bank, 2014). South Africa accounted for 12.8% of Africa's Gross Domestic Product (PPP) in 2014 and is currently considered as an upper-middle income country (World Economic Outlook, 2015). It

is an economy strongly characterised by the Mining sector, Agricultural sector, Manufacturing sector, Tourism sector and the Service sector. After attaining Independence in 1994, South Africa's economic growth has been undulating. Starting with a GDP growth rate of 3.2 % in 1994, it had its ups and downs and later increased to its all-time highest record of 5.5% in 2006. However, as a result of labour unrest coupled with world economic crises, South Africa recorded its lowest growth rate of -1.5% after independence in 2009. Though there was significant growth from 2010 to 2013, the growth of the economy has been on a slower pace with 2014 recording a growth rate of 1.5%. The declining growth rate is partly because of sector shrinkages in recent times, fall in commodity prices and major strikes in the manufacturing sector (SouthAfrica.info, 2016).

Agriculture represents about 7% of formal employment in South Africa (South African Government, 2016). Crop production is a very strong hold of agriculture and over the period of 2010-2014, Mixed Grasses and Legumes have been the highest crop produced with about 18 million tonnes. Sugarcane, maize, forage and silage, and potatoes in the subsequent order have been the highest crops produced in tonnes. According to the Food and Agriculture Organization, South Africa is the 4th largest producer of Chicory root producing about 27,150 tonnes (FAOSTAT, 2016). For the last five years of 21st century, South Africa remained the largest producer of Grapefruits and the 5th producer in the world. From 2010-2014, South Africa produced an average of 347,226 tonnes. Milk that is skimmed from Cow top as the highest produced commodity in the animal sector of agriculture in South Africa (FAOSTAT, 2016) Value added to GDP by Agriculture has been shrinking since independence in 1994. For example, agriculture value addition to GDP in 1994 stood at about 4.6% and currently in 2014, the value has shrunk to about 2.48%.

The Industrial sector, which is the second largest sector comprises of sub-industries like Mining, Manufacturing, Construction, Electricity, Water and Gas. South Africa is the largest producer of Platinum and Africa's largest producer of Gold (U.S. Geological Survey, 2015). The Industry sector also partakes in automobile assembly, metalworking, textiles, etc. A current survey by the World Bank indicates that South Africa is ranked 73rd in terms of ease of doing business and 4th in Sub-Sahara Africa (World Bank, 2016). Industry value added to GDP has been very as compared to the Agriculture value addition to GDP. In 1994, it stood at 35% value added to GDP and it has gradually been falling and in 2014, it was 29% value added to GDP (World Bank, 2015).

The Service sector has been a true success story to South Africa in terms of added value to GDP. The sector has been the driving force of the economy since the 90s. The service value added to GDP was 60.39% in 1994 and this has steadily risen to an ultimate height of 68% in 2014 (World Bank, 2015). The telecommunication sector, tourism and the banking industries have well positioned the Service sector as the highest contributor to GDP in South Africa. The JSE Securities Exchange is the largest stock market in Africa (JSE, 2013)

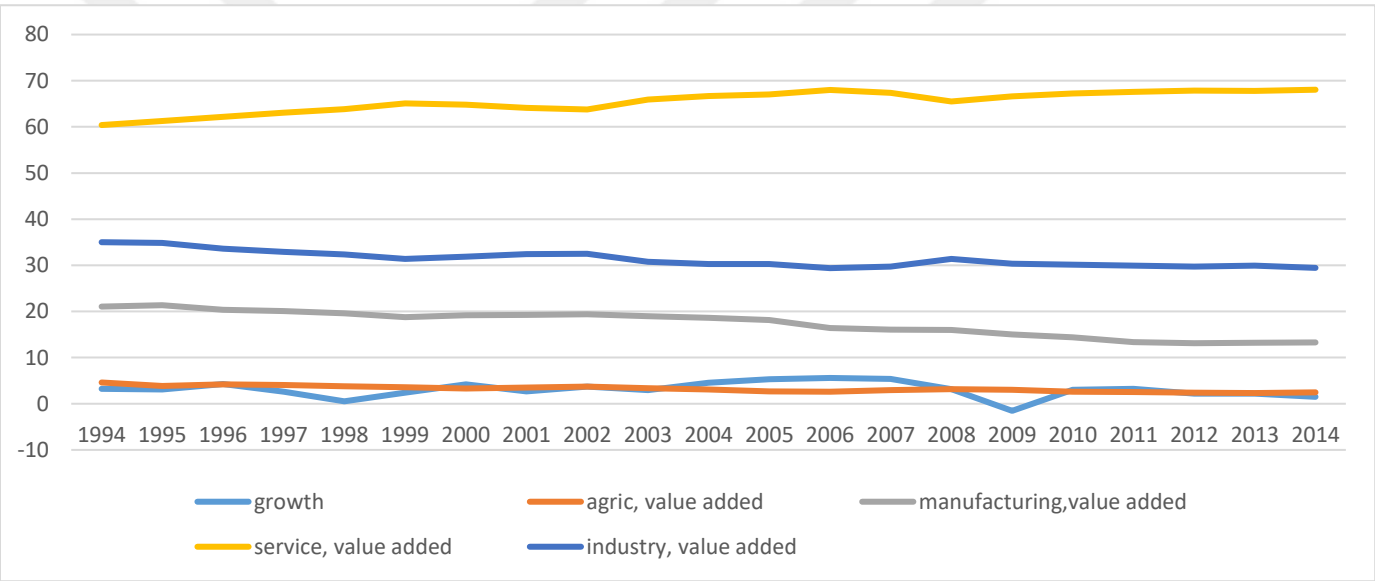

Figure 1.7: *Sector Contribution to GDP in South Africa*
Source: Author's computation from World Bank Development Indicators

1.3.3. Egypt

With a GDP of about $286.5 million, Egypt is the 3rd largest economy in Africa (World Bank, 2014). It has a mixed economy with a population of about 89.5 million (World Bank, 2015). In 2014, the country's economy grew at a rate of 2.2% and World Bank projects it to grow at 3.8% in 2016 and 4.4% in 2017 respectively. The fertile areas around the Nile River make Egypt's agricultural sector flourish with the production of cotton, rice corn, beans, fruits and vegetables. Egypt also engages in livestock rearing like Cattle, Water Buffalo, Sheep and Goats (CIA, 2016). The most produced crop commodities from 2010 to 2014 has been Forage and silage clover,

Sugarcane, Tomatoes and wheat in their respective order (FAOSTAT, 2016). During the same year period, milk, skimmed from cow and cheese have been the most produced product from livestock.

The Industry Sector, which consists of textiles, clothing, chemicals, leather products and several others have been a strong contributor to the country's GDP. It has also performed well in comparison to the Middle East and North African (MENA) countries (Hawash, 2007).

From the Sector graph below, the service sector has been the strongest wing in-terms of value added to GDP since 1974. Since 1993 to 2002, the service sector has contributed more than 50% in value addition to GDP (World Bank, 2015). Though there have been falls in the sector value addition as a result of the recent Arab unrest and political stability, it is important to note that, services provided in Egypt like Tourism, Trade, Banking, Shipping Services and Transport services have contributed immensely.

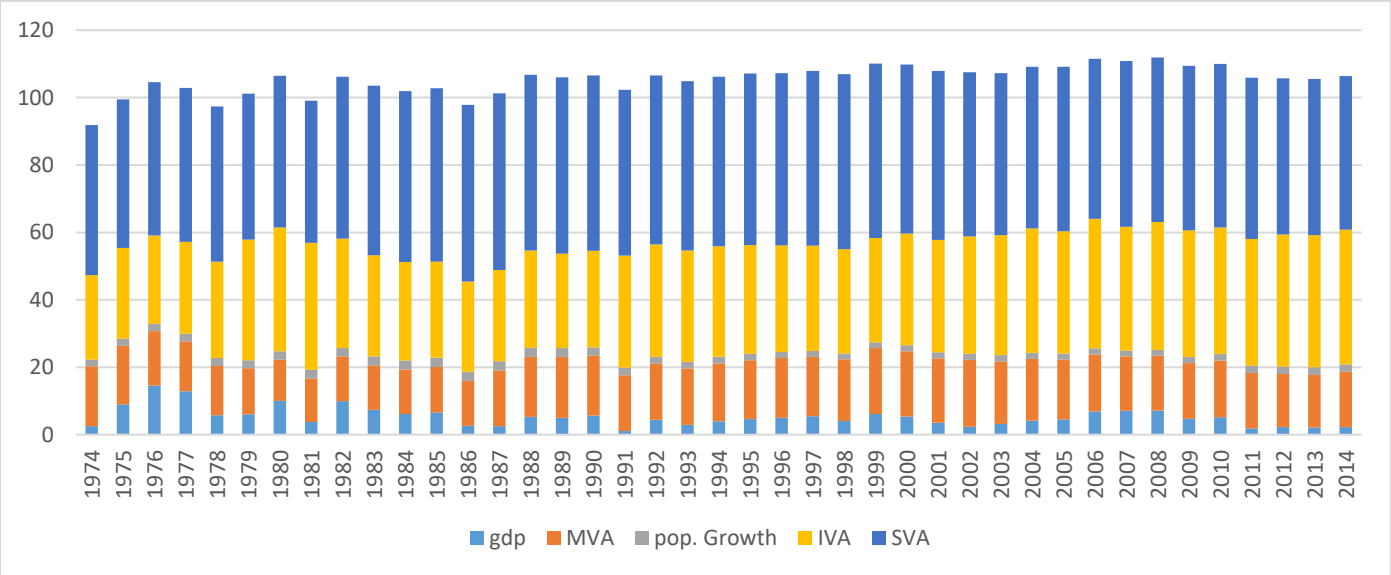

Figure1. 8: *Sector Value Added to GDP in Egypt*
Source: Author's computation from World Bank Development Indicators
MVA- Manufacturing Value added to GDP, IVA- Industry Value added to GDP, SVA- Service Value added to GDP

1.4. Economic Drivers Influencing Growth in Africa

1.4.1. Capital Formation

As the global GDP growth continues to be dwindling after the global economic crises in 2008/2009, Africa's economic growth story has been stunning. For instance, in 2010, when the global growth rate was about 4.1%, Africa rate of economic growth stood at 5.2% (World Bank, 2015). Also, capital formation has been on the rise since 2010. A recent research examining the relationship between capital formation and economic growth in Sub-Saharan Africa established that there was a bi-directional causality (Uneze, 2013). This means that increasing capital formation increases the rate of economic growth in Sub-Sahara Africa and vice-versa. Gross Capital Formation, formally known as Gross Domestic Investments consist of outlays on additions to the fixed assets of the economy plus net changes in levels of inventory (World Bank, 2015). Fixed assets include land improvements, plants, machinery, road construction, schools, hospitals, and both commercial and industrial building. The inventory stock also consists of stock of goods held by firms. As capital formation increases the capital per worker, capital intensity (ratio of capital to labour) increases. This consequently increases the labour productivity and ultimately affecting economic growth positively as output increases.

A critical look at the trends in capital formation and economic growth in SSA indicates that the average percentage contribution of capital formation to GDP from 1970-1975 was 25% and its corresponding growth was 4.9%. However, from 1976-1980, capital formation share to GDP fell to 24.6% and the continent's average growth for that season also fell to 2.99%. A further decline in the average capital formation from 1985-1990 led to a slower growth of about 1%. The slow growth has been attributed to high population growth, poor export performance, war and ethnic conflicts, and low level of capital formation (Uneze, 2013). The speed of economic growth tripled from early years of the 90s (1990-1995) as capital formation share to GDP increased by 1%. With a reduced number of conflicts and a strong service sector performance, average GDP growth increased to 5% with a 1% increase in capital formation contribution to GDP from 1995-2000. Though the continent felt the heat of the 2008/2009 global crisis which led to a continental growth rate of 1.9% in 2009, the dynamic nature of the economy led to a quick recovery and a 5.2% growth rate was recorded in 2010. Also, since 2007, capital formation share has been increasing above

20% and if this should continue, the continent is expected to get a growth rate of above 5% in 2016 (Barungi *et al.*, 2015).

Comparing the gross capital formation per GDP of Africa to that of the world, Sub- Sahara Africa's capital formation to GDP was 4.8% lower to the rest of the world in 1970-1979. However, there was a 37.85% further gap in Sub-Sahara gross Capital formation in relation to the world's gross capital formation to GDP in the next two decades (1980-1999). As Africa's economy continues to grow at a rate above 4% since 2010, the gap between the SSA Gross capital formation to GDP and World's Gross capital formation to GDP had declined to about 3.9% from 2010-2015 (World Bank, 2015).

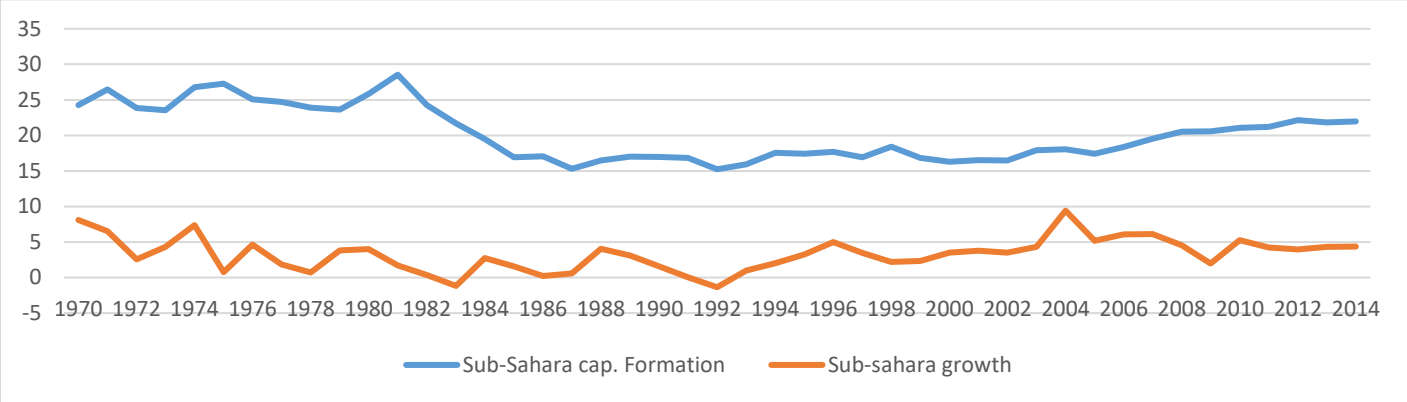

Figure 1.9: *Trend of GDP Growth and Capital Formation in SSA from 1970-2014*
Source: World Development Indicators 2015

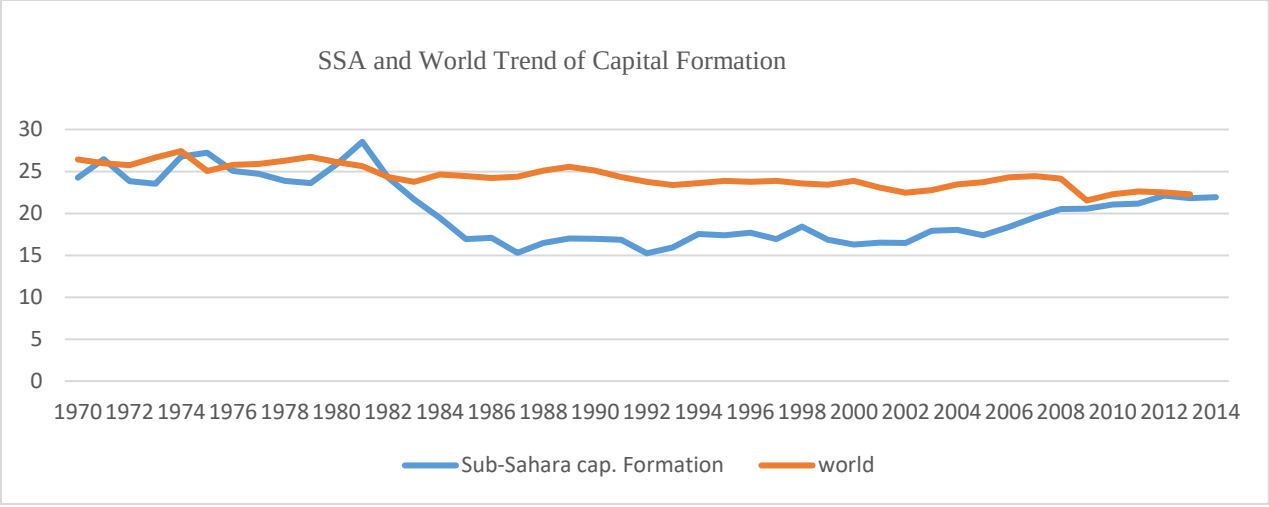

Figure 1.10: SSA and World Trend of Capital Formaation
Source: World Development Indicators 2015

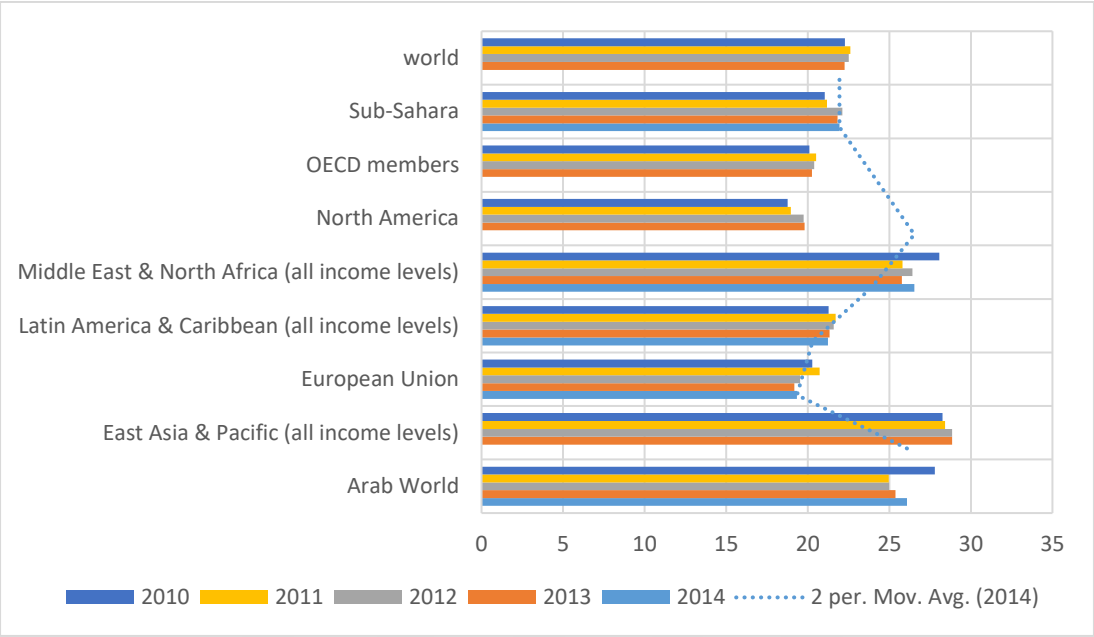

Figure 1.11: *World Chart of Capital Formation: 2010-2014*
Source: World Development Indicators

1.4.2. Human Capital

Human development has been viewed by some economist as a way of expanding people's choices in which helps them to live longer, healthier and fuller lives (Boozer *et al.*, 2003). Others also view it as that which tends to improve the quality and productivity of labour (Daisi, 2011). Several studies have supported the argument that human development indeed enhances economic growth (Eigbiremolen and Uchechi, 2014; Boozer *et al.*, 2003; Daisi, 2011; Banks. B, 1996). Though Human Capital is of great importance, there is no exact measure of it and researchers hence use several proxies like education enrolment, expenditure on education, and the Human Development Index(HDI). The latter was developed based on Barro and Lee (2013) and has been adopted by the United Nations Development programme as the closest proxy to human capital. It consists of life expectancy at birth, knowledge (mean years of schooling and expected years of schooling) and a decent standard of living measured by Gross National Income per capita.

According to the HDI ranking for 2013, the top ten countries with a very high human development are from Europe, Australia, North America and Asia. It is therefore not surprising that these countries also are the wealthiest economies in the world.

Table 1.2: *Human Development Index Performance for 2013*

Continent	Number of Countries	Ranking Position
Europe	6	Norway (1st) Switzerland(3rd) Netherlands(4th) Germany(6th) New Zealand(7th) Denmark(10th)
North America	2	USA(5th) Canada(8th)
Asia	1	Singapore(9th)
Africa	-	
Australia	1	Australia(2nd)
Antartica	-	

Source: United Nations Development Programme

Out of the 49 countries in the group of Very High Human development, Europeans formed the majority with about 65.3%. The continent of Asia also had a representation of about 22.4% whiles Latin America had 6.1%. As Africa recorded no representation in this group, North America and Australia recorded 4% and 2% respectively. The value of the HDI for very high human development group falls within 0.808 to 0.944 in 2013. The average life expectancy at birth for these group of countries is 79.4 years and the average of the mean schooling years is 15.9 years.

Libya and other North African countries like Algeria and Tunisia had HDIs higher than 0.7. Seychelles and Mauritius also are part of this group with HDI 0.75 and 0.77 respectively. With an average life expectancy of 74.1 years, expected years of knowledge acquisition to be 13.7 years, the people from nations in this group are able to work and produce more goods and services with an average GNI per capita of $14,432. Libya, a country with a population of 6 million and life expectancy at birth of 72 years had a 104% GDP annual growth rate in 2012 and a corresponding HDI of 0.789. However, with the increase in political instability, killings of citizens as a result of the war, close down of many shops, factories, and schools, there was a negative growth rate of 13.5 in the economy and a corresponding decline of HDI (0.784) in 2013. As Seychelles also increased in HDI from 0.755 in 2012 to 0.756 in 2013, annual GDP growth also increased from 6.% in 2012 to 6.62% in 2013.

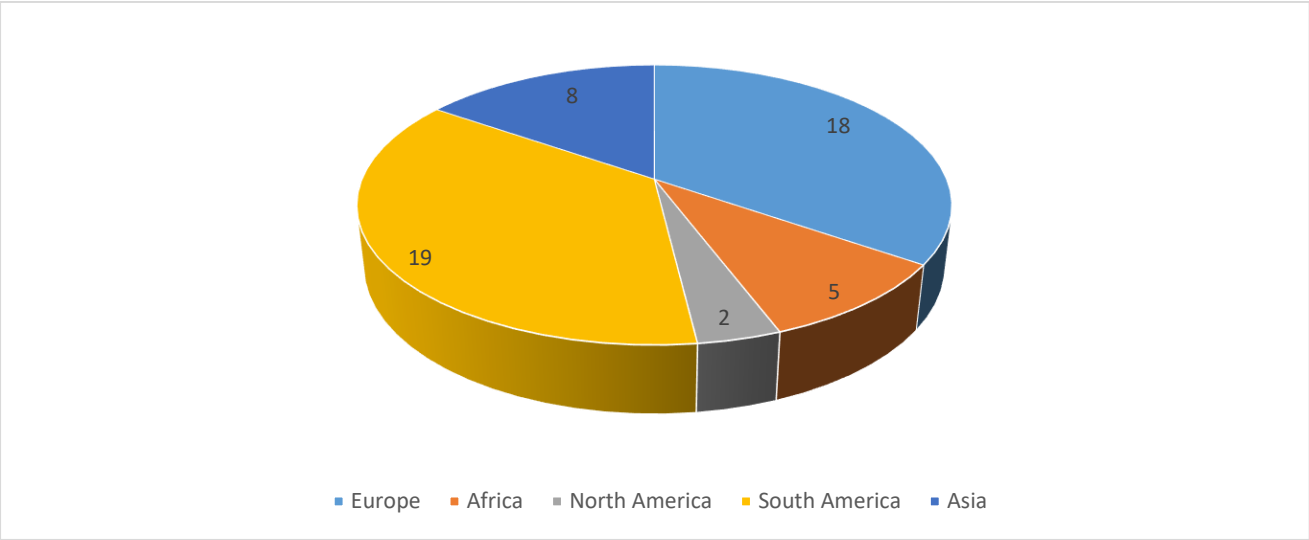

Figure 1.12: *Number of African Countries with High HDI*
Source: United Nations Statistics 2013

Eleven African nations (Ghana, Botswana, Egypt, Gabon, South Africa, Cape Verde, Namibia, Morocco, Congo, Zambia and Equatorial Guinea) out of the 41 nations belong to the group of medium HDI forming about 26.8%. The remaining African countries fall in the group of low HDI and therefore if Africa wants to increase production and services, the living standards, access to education and easy access to capital must be made a policy priority for most African states so that as we improve our HDI, output will also increase.

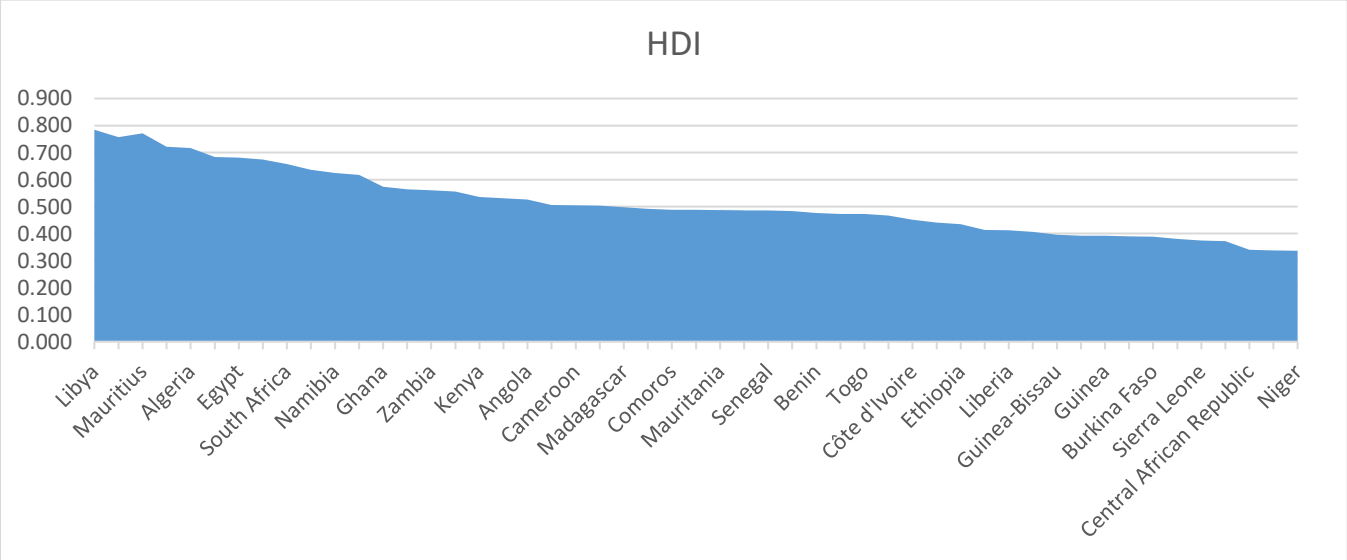

Figure 1.13: *HDI Performance for Africa in 2013*
Source: United Nation Data source

1.4.3. Natural Resources

Africa is blessed with an abundance of natural resources. Africa's natural resources have been one of the backbones of the continent's economy. In 2012, about 77% of Africa's total export was accounted for by natural resources and 42% of government revenues (ANRC, 2016). The continent is blessed with the longest river in the world called River Nile. The second largest and the world's deepest river called River Congo is also found in Africa. There are about 63 international basins in Africa and this takes about 64% of the continent's land area. (AfDB, 2015). ANRC also reports that the continent has the second largest tropical forest and about $ 24 billion was the total value added by the fisheries and aquaculture sector in 2014.

Non- renewable natural resources also contribute massively to Africa's GDP. It is estimated that Africa as a continent holds about 30% of all global mining reserves. The percentage share of Africa's oil reserves is about 9.5% with Sub- Sahara Africa contributing about 4.9% (Katsouris, 2011). Also, on gas reserves, Africa holds about 8% of the world's share. Africa Development Bank has estimated that the continent will benefit about $30 billion per annum in government revenue from extractive resources (AfDB, 2015). Minerals like Gold, Manganese, Copper, Platinum, Diamonds, Bauxite and Uranium are all found in Africa and African countries serve as the leading producer of most of these precious minerals.

Table 1.3: *Africa's Bauxite Production*

Country	2005	2010	2011	2014[e]	2016[e]	2018[e]
Ghana	727	600	1500	1500	1500	1500
Guinea	14600	15300	15300	17000	31100	39000
Mozambique	10	11	10	11	11	11
Sierra Leone	-	1090	1457	1500	7500	11500
Tanzania	2	130	130	130	130	130
Total	15300	17100	17300	20100	40200	51800

Values are in thousand metric tons, e- Projected estimates.

Source: United States Geological Survey 2011 (Bauxite)

Table 1.4: *Africa's Aluminium Production*

Country	2005	2010	2011	2014[e]	2016[e]	2018[e]
Cameroon	87	60	69	70	70	70
Egypt	244	539	540	500	500	500
Ghana	-	-	35	200	200	200
Kenya	2	6	6	6	6	6
Mozambique	555	557	562	560	560	560
Nigeria	-	21	18	30	96	96
South Africa	846	807	809	810	810	810
Total	1700	2000	2000	2200	2200	2200

Values are in thousand metric tons, e- projected estimates.
Source: United States Geological Survey 2011 (Aluminium Production)

Table 1.5: *Africa's Copper Mine Production*

Country	2005	2010	2011	2014[e]	2016[e]	2018[e]
Congo(Kinshasa)	97	430	540	850	980	1000
Botswana	31	21	22	40	48	58
Eritrea	-	-	-	81	33	17
Mauritania	-	37	40	40	40	40
Morocco	4	14	13	14	14	14
Namibia	10	-	4	7	11	11
South Africa	89	103	97	96	83	93
Tanzania	4	5	5	6	7	7
Zambia	447	686	668	900	1000	1600
Zimbabwe	3	5	6	6	6	6
Total	690	1300	1400	2000	2200	2800

Values are in thousand metric tons, e- projected estimates.
Source: United States Geological Survey 2011 (Copper mine Production)

Table 1.6: *Africa's Refined Copper Production*

Country	2005	2010	2011	2014[e]	2016[e]	2018[e]
Congo (Kinshasa)	-	265	366	670	790	870
Egypt	3	3	3	4	4	4
South Africa	99	81	86	79	68	77
Zambia	399	530	516	600	600	600
Zimbabwe	7	5	4	5	5	5
Total	510	880	980	1400	1500	1600

Values are in thousand metric tons, e- projected estimates.
Source: United States Geological Survey 2011 (Refined Copper Production)

Table 1.7: *Africa: Historic and Project Gold Mine Production (2005-2018)*

Country	**2005**	**2010**	**2011**	**2014[e]**	**2016[e]**	**2018[e]**
Algeria	-	723	340	500	500	500
Benin[2]	-	20	20	20	20	20
Botswana	4	1800	1800	1800	1800	1800
Burkina Faso[3]	625	22939	31774	40000	41000	43500
Burundi	-	750	750	750	750	750
Cameroon[2]	1000	1800	1600	1800	1800	1800
CAF[4]	15	60	53	4000	6400	6400
Chad	150	100	100	50	50	50
Congo(Brazzaville)	120	150	150	200	200	200
Congo(Kinshasa)	7200	3500	3500	23500	27500	28000
Cote D'Ivoire[3]	1335	5310	9871	14800	18000	20000
Egypt	-	9847	7000	8000	15500	15000
Equatorial Guinea	200	200	200	150	150	150
Eritrea	25	21	11800	2100	4400	3800
Ethiopia	4376	5936	10700	10900	13100	13200
Gabon[2]	300	300	-	1200	1200	1200
Ghana[3]	66852	76332	82993	100000	110000	110000
Guinea	25097	15217	15695	16100	18600	19000
Kenya	616	2035	2100	2100	2100	2100
Liberia[2]	27	666	469	2000	3700	3700
Madagascar	10	70	-	-	-	-

Mali[3]	44230	36360	35728	49200	49000	45000
Mauritania	-	8305	8172	10500	31000	31000
Morocco	1786	650	520	600	600	600
Mozambique	63	106	111	111	111	111
Namibia	2703	2683	2053	2700	5800	5800
Niger	4962	1929	1879	2000	2000	2000
Nigeria	30	100	100	600	600	600
Rwanda	10	3	3	5	5	5
Senegal	600	4381	4089	11800	19800	20000
Sierra Leone[4]	53	270	164	200	5800	5800
South Africa	294671	188702	180184	196000	215000	220000
Sudan	3625	26317	23739	28000	27000	26000
Tanzania	47270	39448	44000	39000	44000	48000
Togo	6179	10452	16469	16500	23000	23000
Uganda	46	-	-	-	-	-
Zambia	440	3400	3500	3500	4000	5000
Zimbabwe	14024	9100	12824	20000	20000	20000
Total	528644	479982	514450	610686	714486	724086

Values are in kilograms
[1]Estimated data and total are rounded to no more than 3 significant digits
[2]From artisanal mining
[3]Excludes production from artisanal mining
[4] From artisanal mining for the years 2000, 2005 and 2010 only
Source: United States Geological Survey 2011

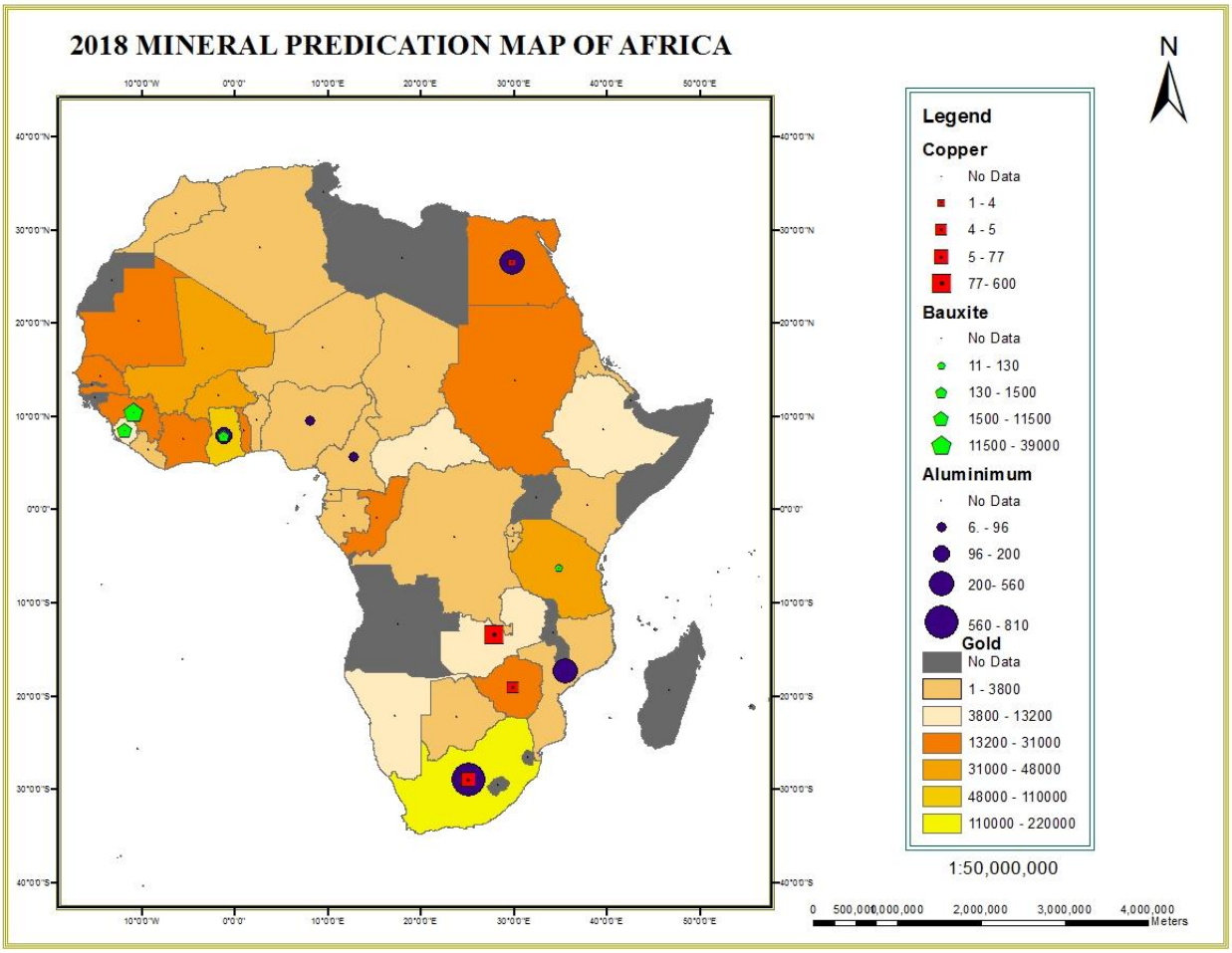

Figure 1.14: *2018 Mineral Production Predictions In Africa*
Source: Author's thematic design based on the US Geological Survey (2011)

1.5. Challenges Facing Africa's Economy

1.5.1. Corruption

Corruption has been noted to be worse than prostitution because it endangers the morals of the entire society (Campos and Bhargava, 2007). According to World Bank, corruption has become the greatest obstacle to economic and social development (World Bank, 2011). Though corruption is a global issue, it is highly visible in Africa. In 2015, it was estimated that 75 million people paid bribe that year (Transparency International, 2015). With most of the African governments failing to fight corruption, 58% of African claimed there is little being done to stop it. According to the research by Transparency International, 4 out of 5 South Africans believe corruption has been on the rise recently and this clearly shows the level of trust citizens have in their government. The report further stated that out of 28 Sub- Sahara African countries which were considered for the

study, the Police and the Judicial system are the most corrupt. Theses public institution are responsible for the protection and enforcement of the rule of law. The Private sector was also perceived to be strongly corrupt in the region. In Africa, 1 out of every 5 African is affected by bribery and this further increases the poverty gap since the poor masses are mostly affected. Basic amenities like provision of water, fertilizer supply, electricity, Justice, police protection by governments have been tarnished with corruption in the region. 22% of the people in Sub-Sahara Africa had to engage in corrupt activities before the above listed basic ammenities which they have paid tax was provided to them by their government. Some of Africa's economic giants like South Africa, Nigeria and Ghana had the highest number of citizen claiming corruption has increased with 83%,76% and 75% respectively.

The logical question now is, what is corruption and how has it affected affected our economy? Corruption can be considered to have social, economic, legal and political effects on communities. Generally and for the purposes of narrowing on the broad topic of corruption, it can be defined as the use of public office for private gains (Bardhan, 1997). Corruption includes bribery,embezzlement and nepotism or state capture (OECD, 2014). Africa annually loses 40% of Africa's annual GDP to corruption (Lumumba, 2010). This figure is by far greater than the 2.7 % of Foreign Direct Investment (FDI) contribution in 2014 and 3% contribution of Official Development Assistance (ODA) to Gross National Income in 2013.

In the nutshell, corruption undermines democracy and the rule of law, lead to human right violations, distorts markets and serves as a breeding ground for terrorism. This, in the long run, reduces the quality of life in the society (United Nation, 2004)

1.5.1.1. *Impact of Corruption*

i. Lack of Quality Services

As individuals pay taxes to enjoy basic social amenities like electricity, water, Justice, roads and schools, they are denied quality service because of the corrupt system. People pay bribes to get the quality care they have all been taxed. Sick people pay bribes to see the doctor. In some situations, they even pay bribes to get a bed in a government hospital. The Police take bribes and the allow drivers without a licence, vehicles that are not road worthy to go without been stopped

and arrested. This in-effect has increased the number of accidents killing other road users and pedestrians and the destruction of properties running to millions of dollars. The few good educational institutions are always reserved for the rich and not for hard working students. In most universities in Africa, slots are taken from the hardworking students and given to the student who pay bribe.

In Liberia, CNN reports that 7 out of 10 people alluded to the fact that they had to pay bribes to get good healthcare and education (Veselinovic, 2016).

ii. Improper Justice

The democracy of a country is strong when the Executive, Parliamentary and the Judiciary arms of government are independent and void of corruption. According to the 2015 report on corruption by Transparency International, the Judicial Service departments in Sub-Sahara Africa are the second most corrupt public institution. Law offenders have been left off the hook as a result of corrupt Judges and corrupt Policemen.

In August 2015, an investigative journalist (Anas Aremeyaw Anas) exposed how corrupt the Ghanaian Judicial System was with video evidence showing Judges demanding bribes and sex to influence judgement. One Hundred and eighty officials from the judicial service were indicted in this corruption scandal. Twenty Judges from the Magistrate and lower courts have been sacked as a result and 12 High Court judges have been suspended and are been investigated. In the 2012 Presidential elections of Ghana, the Supreme Court decided the winner for the election after the main opposition party suspected foul play from the Electoral Commission. Therefore, if the judicial system is this corrupt, people will no longer have faith in the rule of law and this may lead to chaos and war.

1.5.1.2. *Possible ways of combating corruption*

The study attempts to suggest possible ways of fighting corruption in the context of Africa.

- Move from manual to electronic office operations

Most of the office related jobs are done and recorded manually and this gives corrupt people the power to manipulate figures. A typical example is the electronic procurements that can be used by governments to reduce collusion among bidders and corruption. Corruption is mitigated by

drastically reducing the degree to which government officials withhold information from non-favourable bidders (Pande and Olken, 2016). E-governance helps citizens to communicate with public official and avail public services through online or other information technologies. This reduces corrupt employee's discretionary powers when using the traditional paper system (Baniamin, 2015)

- Political Will to Fight Corruption

African leaders across the continent should champion corruption eradication by having the political will to fight corruption. The agreement reached by African Heads of States to fight corruption must be strictly adhered to and they are as followed;

1. Strengthening national control measures to ensure that foreign companies operating in member countries respect the national legislation in force.
2. Establish, maintain and strengthen independent national anticorruption authorities or agencies.
3. Adopt legislative and other measures to create, maintain and strengthen internal accounting, auditing and follow-up systems in the public income, custom and tax receipts, expenditures and procedures for hiring, procurement and management of public goods and services.
4. Adopt legislative and other measures to protect informants and witnesses in corruption and related offences, including protection of their identities.
5. Adopt measures that ensure citizens report instances of corruption without fear of consequent reprisals.
6. Adopt national legislative measures to punish those who make false and malicious reports against innocent persons in corruption and related offences.
7. Adopt and strengthen mechanisms for promoting the education on of populations to respect the public good and public interest, and awareness in the fight against corruption and related offences, including school educational programs and sensitization of the media, and the promotion of an enabling environment for the respect of ethics (AU, 2004; Olaniyan, 2004)

- Educating citizens on their legal rights will also empower them and prevent officials from taking advantage of them.

Also, asset declaration by politicians and top businessmen before assuming office is also another way of reducing corruption since they will also account for any asset gained whiles in and out of office. This has served as an effective tool to prevent corruption in Eastern Europe and Central Asia (OECD, 2011). An effective income and asset declaration regime can increase public accountability and transparency, reduce corruption and abuse of power. Also, it can strongly increase public trust in institutions and government legitimacy. Studies have shown that areas with strong adhesiveness to asset declaration laws by public officials have a low corruption rate (Chêne, 2008). As at 2006, 28 African nations require assets and income declaration disclosure by public officials. Twenty-three (23) countries out of these 28 countries require that public officials declare their assets to an anti-corruption agency or other government institution like the Auditor- General's Office. The remaining five countries (Cape Verde, Central African Republic, Sao Tome and Principle, and South Africa) request publication of asset declared to the public (Chêne, 2008). There are however challenges faced by this practice like who should declare what, and to whom this declaration should be done. The filing frequency has also become a challenge for this policy implementation. For example, Cameroon law requires all public officials to declare assets, but this has poorly been executed over the years because of lack of capacity and political will. Practicalizing this policy is difficult since the government does not have the capacity to subject all public official to asset declaration. Such measures should target some level of senior officials for efficiency. Kenya, Tanzania, Uganda and Nigeria require state or public officials to declare the assets of their wives and children to prevent corrupt officials from transferring stolen monies to their family members. In Ghana, Article 286 (1) of the 1992 Constitution and Public Office Holders (Declaration of Assets and Disqualification) Act, 1998 (Act 550) enshrine the President, Vice President, the Speaker and Deputy Speakers of Parliament, and all Ministers to declare their assets to the Auditor- General but not public disclosure (Bokpe, 2016). Though this measure exists, it has served as a ''white elephant'' with no government having the political will to enforce the policy. This study suggests that just as it is compulsory for every senior state official to be sworn into office before commencement of work, asset and income declaration policy must be a requirement before a state official assumes or leaves office.

1.5.2. Infrastructure

After the struggle for independence, many African countries inherited some infrastructure from the colonial rulers which sustained the economies during the 1960s until the oil shock of the 1970s (Estache, 2006). As population growth and urbanization increased over the years, the industrial and household demand for infrastructure also increased in the continent. This has led to large infrastructure deficit to the continent. It has been estimated that the sum of investment and maintenance expenditure needs to be around 9% of GDP from 2005-2015 (Estache, 2006). World Bank estimates indicate that Sub-Saharan Africa (SSA) required over $90 billion annually to maintain and improve on infrastructure (The Economist Corporate Network, 2015). Road access rate in Africa is 34% as compared to 50% in other parts of the developing world. Also, the cost of transport in this continent is 100% higher than in other parts of the world. Whiles other continents have about 70% to 90% access to electricity, only 30% of African population have access to electricity and even with this, there is the continuous erratic power supply (The Economist Corporate Network, 2015). Forty-eight (48) Sub-Saharan African countries with a population of 800 million generate the same amount of power as Spain with a population of 45 million. With the issues of road infrastructure, only one-third of Africans living in rural areas are within two kilometres of all-seasoned roads as compared to two-thirds of the population in other developing regions. (Banks, 2013). Though the continent is engulfed with lots of water bodies, only 5% of agriculture use irrigation (PIDA, 2012). Mauritius is one of Africa's most developed infrastructure and SSA would increase GDP per capita by 2.2% if the continent were to catch up with Mauritius (World Bank, 2013). The World Bank asserts that, for most countries in Africa where infrastructure is a major challenge to doing business, productivity by firms is depressed by about 40%. It is exciting to note that in the area of Information Communication Technology (ICT), Africa is catching up with the world. In 1999, only 5% of the populace had access to the internet but by 2006, it had increased to 57% with over 100 million subscribers (World Bank, 2013).

The question now is, how does low infrastructure developments serve as a challenge to the economy? It is estimated that, for every $1 spent on public infrastructure development, GDP of an economy rises between $0.05 to $0.25 (World Economic Forum, 2012). Recently improved infrastructure is said to have been responsible for more than half of Africa's economic growth performance lately. (Foster and Briceño-Garmendia, 2010). Closing the infrastructure deficit is

essential in propelling Africa's economic growth. An improved infrastructure will increase intra-regional and international trade. Also, the cost of doing business will reduce attracting Foreign Direct Investments (FDI) inflows and enhance the continent's global competitiveness which will cause the cause the continent's economy to grow (PIDA, 2012).

1.5.3. Capital Flight, Tax Evasion and Tax Avoidance

All economies run their developmental projects through financing. One of the major constraints of Africa's economic growth is shortage or scarcity of financing (Fjeldstad and Heggstad, 2014).

AfDB and GFI (2013) analysis of illicit flow and problems of net resource transfer has made Africa a net creditor to the world. The continent has suffered from a capital flight for over 3 decades and has heightened during the periods of accelerated growth in Africa recently (Boyce and Ndikumana, 2012)

Capital Flight can be explained as the transfer of assets abroad in order to reduce the loss of principal, loss of returns, or loss of control over financial wealth due to government sanctioned activities. Government sanctioned activities like wealth confiscation, increase in taxes on wealth or imposition of regulations that limit the privileges of wealth holders sometimes causes fear to business owners thereby resulting to capital flight (Epstein, 2005).

Tax evasion may be explained as the commission or omission of an act knowingly with a strong intention to deceive so that the reported is less than the tax payable under the law. (Somorin, 2010). Tax avoidance though similar to tax evasions takes advantages of the legal loopholes in the system to pay less tax.

Recent reports jointly written by AfDB, OECD and UNDP indicates that from 2003 to 2012, Africa has been losing an annual average of $60.3 billion and this forms about 4% of Africa's annual GDP. This figure clearly outweighs the Foreign Direct Investments (FDI) inflows and Official Development Assistance (ODA) for that same year period which was $43.8 billion and $42.1 billion respectively. Since the 1980s, Africa has always been a net provider of resources to the world with net resource transfer estimates ranging from $597 billion to $1.4 trillion but the continent has always suffered from lack of funds to finance developmental projects. Boyce and

Ndikumana (2012) indicated from their finding that, 33 SSA which were understudied lost about $814 billion from 1970-2010 and oil-rich countries accounted for 72% of the capital flight in the region ($ 591 billion). Making a simple assumption that the monies lost from the capital flight were used to buy US Treasury rate at moderate interest, the continent could have earned $1.6 trillion in 2010. Therefore, this clearly tells a story that, if we have the collective will to fight capital flight and repatriate stolen monies, we (Africa) will have more than enough to finance its developmental projects.

38% of the illicit transfers come from West Africa whiles about 10% originate from both Central and Eastern Africa. Closely following West Africa in the illicit transfer is North Africa which contributes about 28% to that illegal practice (Anderson, 2015). Most of the illicit transfer activities that occur on the shores of Africa are mostly mispricing. This constitutes 60% of capital fights in Africa (Fröberg and Attiya, 2011). Mispricing or transfer pricing can simply be explained in three stages: First, a multinational company sets up its subsidiary in a developing country. This subsidiary company sells its produce at an artificially low price to another subsidiary company in a tax haven country to avoid paying huge taxes to the developing nations. The next step is that the ‘’tax haven subsidiary’’ sells its produce at an artificially high price and makes a huge profit paying little or no tax on it. This little process has sunk Africa deeper than even corruption. Fröberg and Attiya (2011) research indicate that, for every one dollar ($1) that goes to developing countries in aid, ten dollars ($10) return to the developed countries through illicit transfer means. Illicit transfers in Africa grew at a rate of 21.9% from 2000-2009 (Kar and Curcio, 2011). A typical example of such illicit transfer what recently happened in the Democratic Republic of Congo. This very rich natural resource nation sold its state mines to an anonymous ‘’shell’’ companies in the British Virgen Islands for an exceptionally low price. It was later sold on at market prices to major listed companies (Mosselmans, 2014). A diagram below shows how monies have flowed in and out of developing from 2002-2006

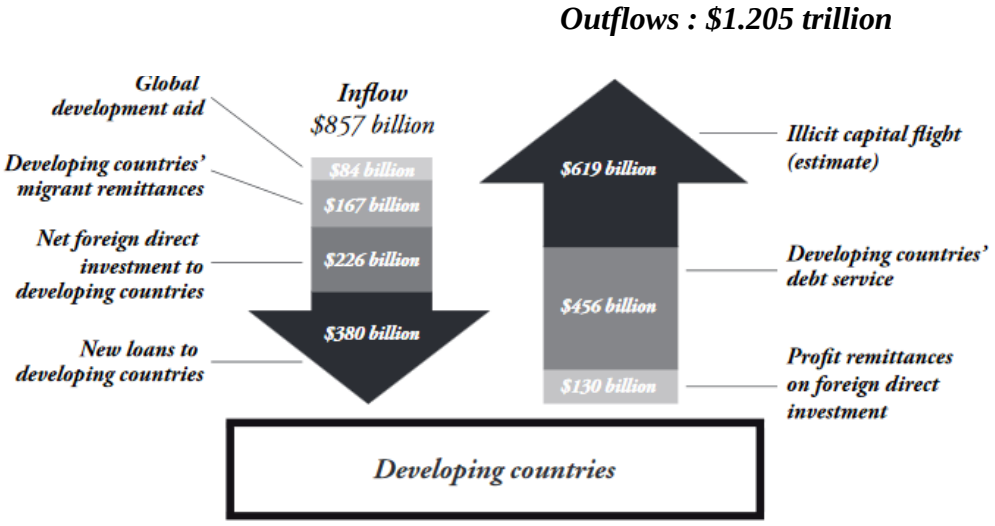

Figure 1.15: *A Diagram of cash flow in developing from 2002 to 2006*
Source: Fröberg and Attiya (2011) and the figures are based on data from OECD, World Bank and Eurodad.

1.5.3.1. *How does Capital Flight hurt Africa's Economy And Why We should Fight It.*

Capital flight drastically reduces tax collection and negates the effect of investments on every economy. It also disrupts healthy competition and the benefits of trade is heavily undermined and drains the continent's currency reserves. With our taxes been drained away illegally, Africa will always need to depend on aid and loans to support developmental projects. These generate a need to fight this menace. When we are able to fight capital flight, it will raise enough revenue for African governments to finance developmental projects. Fight the menace of capital flight means, Africa can reduce the incentive to hide profits outside the country of origin thereby increasing jobs and domestic investment. Fighting capital flight will make African governments more accountable to their taxpayers and less accountable to their foreign donors. It also reduces the income inequality gap between the rich and the poor in the long run (Fröberg and Attiya, 2011).

1.5.3.2. *Measures to fight Capital Flight and Tax Evasion*

- The International financial reporting standards can be upgraded to make reporting of profits and taxes paid by multinational companies in every subsidiary they operate. Also, there should be

a global tax information system where there can be multilateral exchange of information between tax authorities.

- Individual African governments should develop stronger tax laws to reduce tax avoidance. Also, regular capacity building for tax official to equip them and improve the awareness of tax evasion.
- If the Western countries and developed nations want to help Africa, then it is certainly not through Foreign Aid and ODAs but can help African governments to build strong tax systems and also prosecute multinational companies who transfer funds to their countries illegally. These ‘’stolen monies’’ should be repatriated back to its rightful owners by the assistance of developed nations.

1.5.4. Political Instability, Civil Wars and Terrorism

Political unrest, civil wars, territorial wars among countries, and terrorism have led mother Africa to lag in development since the past five decades of colonial liberation (Ibrahim and Cheri, 2013; Ayittey G. B., 1999). The continent has been strongly characterised by wars, destruction, famine, refugees, starvation, instability and chaos. From the north to south, east to west, the continent has had its fair share of unrests. Series of civil wars like Sudan (1990-1995), Chad (1965-1985), Liberia (1980-2003), Nigeria (1967-1970), Somalia (1993-1999), Sierra Leone (1991-2001), Angola (1986,1999), Rwanda (1994) and Zaire (1996), (Aremu , 2010). Also Aremu (2010), research indicates that there have been territorial misunderstandings amongst countries like ;

- Nigeria- Cameroon dispute over the Bakassi Peninsular since 1970s
- Algeria-Morocco over the Atlas Mountains in 1963
- Eritrea- Ethiopia misunderstandings from 1962-1979
- Somalia- Ethiopia dispute from 1962 to 1978
- Chad- Libya from 1980-1982
- Kenya – Somalia border war of 1963-1967
- Tanzania- Uganda crises of 1978-1979.

Recently, the Arab spring also affected the Northern part of Africa with most of the economics still struggling to stand on their feet. Mohammed Bouazizi, a young vendor set himself

ablaze to register his displeasure and frustrations against the Tunisian Government. His death, was the birth of Arab unrest from Tunisia to Asia (Mulderig, 2013). Morocco (2011-2012), Egypt (2011) and Algeria (2010-2012) experienced continuous series of protests that occurred as a result of poor living conditions, high unemployment rate and corruption during that era (Botelho, 2015).

One may ask; what are the causes of these political unrests that have drawn back Africa's economic progress? Though conflicts have emerged in difference regions of the continent, there are certain common causes that runs through. The study on Conflicts in Africa'' by Aremu (2010) identified creation of arbitrary borders by colonial powers, inept leadership, poverty and corruption as some of the drivers of political unrests. War and political unrest costd an economy in both the immediate term and the long term with devastating effects sometimes reaching the future generations.

1.5.4.1. *Immediate Cost of Political Unrest, Civil wars and Terrorism*

The most observable features during and after a civil unrest are the destruction of lives, properties and the loss of income. With most of the African populace living in the rural regions, agriculture remains the leading sector that employs people and provides food and income for the continent (Bates, 2008). In an event of war, people do not get the peace of mind to farm and are forced to relocate to safer areas. These reduce the economy's output and destruction of capital. Collier, *et al*., (2003) study revealed that, in the war zones of Mozambique, the agricultural sector lost about 40% of immobile capital like buildings and 80% of mobile capital like cattle and tractors. A similar Ugandan study revealed that, in regions of active fighting, two-thirds of the households did not only loose family members and livestock but practically lost all their possessions (Collier, et al., 2003). Also, wars and unrest increase the cost of doing business and also increases the prices of goods and services. A study by De Waal Alex (1991) clearly supports this assertion by explaining the war between the Mengistu regime and the Tigray People's Liberation Front (TPLF) in Ethiopia. He concluded that the price of grain per quintal in Meqele (war zone) was about three time the price in Shire in the period of 1982.

1.5.4.2. *Long-term Cost of Political Unrest, Civil wars and Terrorism.*

The lagged effect of civil wars includes the destruction of infrastructure, deepening poverty and hunger, and low agricultural output to feed the citizens. Aside from a sharp decline in capital formation, FDI also falls considerably. Children will not be able to have proper education and citizens will be denied necessities like proper healthcare. Also, saving will drop since people will prefer to hold cash and transact business than to keep it in the bank. Inflation will also rise and will further weaken the pillars of the economy. Military spending per GDP will rise to the detriment of better education, water availability and good health care (Collier, et al., 2003). Bates (2008) also noted in his study of 27 Africa Countries in the AERC Growth project that, insecure governments are more likely to incur debts.

1.5.4.3. *Possible Solution To Ending Civil Unrest and Tribal Wars*

The study strongly agrees with Ayittey (1999) who asserts that the solutions to Africa's conflict crises can be found in Africa itself. The indigenous system where a Chief and his noble elders sit on issues and pass judgements in their communities is one of the best ways to avoid tribal wars. Though we are in an era of modernization, people still have lots of respects for their clan Chiefs. Petty quarrels that arise in communities and tribes can be curtailed by the indigenous ruling systems before they get out of hands. Of course, these traditional rulers must also obey and rule according to the constitution of the country which is supreme. However, some traditional leaders seeking more power have indulged themselves into national politics making followers on the other end of the political divide loose respect in their rulings. A typical example of a good traditional mediation system is how Mozambique settled 500,000 property claims with only verbal agreement by village chiefs (Ayittey, 1999).

Commitment and sincere leadership is a sure way to prevent and avoid any unrest that may arise. Breaking this down from the family unit, Parents are responsible to be law-abiding and good examples for their children to emulate. The elders in the community must be morally upright and mentor the younger generations. Chiefs and Kings must rule with utmost fairness and eschew partiality. Government officials must be sincere with public funds so they can trustworthy. True

commitment and sincere leadership ensures equitable distribution of resources, promotion of rule of law and protection of fundamental human right (Aremu , 2010).

Poverty is always at the centre of most political crises African are facing (Aremu , 2010). Another possible solution to these crises lies heavily in the hands of the various African governments. Providing access to quality education, gainfully employing the youth and providing adequate remuneration for workers that reflect the true state of the nation is a sure way of combating poverty by empowering the citizenry (Aremu , 2010).

1.6. Prospects and Opportunities in Africa

1.6.1. The Extraction Sector

Though the mining industry is faced with high volatility of commodity prices and rising exploration cost, Africa has bright prospects in this sector. Beneath the soils and water bodies in Africa lies more than sixty (60) metals that are needed for industrialization and urbanization (AfDB, 2012). The US Gelogical Survey places Africa as the largest or second largest reserve worldwide for Bauxite (main source of aluminium), Cobalt (for making alloys and batteries), Gold, Diamonds, Manganese (anticorrosive element in steel), phosphate rock (used in fertilizers), platinum group metals, soda ash (used in making glass), vermiculite (a component in fireproof materials) and zirconium (used in heat-resistant ceramic materials) (KPMG, 2012). The KPMG report on Africa continue to emphasize that, out of the 54 African nations, 46 of them have minerals of commercial importance (KPMG, 2012). Most of these minerals found are used in the automobile and real estate industries which have been expanding over the years as a result of global demand in infrastructure and modernization. However, Africa currently provides 8% of the global mineral production as a result of obstacles being faced in the mining sector (AfDB, 2012). Another reason that makes Africans optimistc about the future in the mining sector is the evidence that demand of mineral commodities in the early stages of a supercycle. The International Study Group Report in 2011 explains the early stages of super cycle is a rise in demand of mineral commodities as a result of urbanization and industrialization of major economies like China, India and Brazil (United Nation, 2011). The continent can benefit from the long-term tax regimes.

As Investors all over the world are searching for brighter opportunities, Africa, with its vast mineral potentials offers an attractive environment for mining investments. The continent will be able to fully benefit from the sector if it starts to refine some of the minerals since almost all the minerals are exported in their raw form. Therefore investors determined to make good returns can venture to mineral refining in Africa and have a good rapport with various governments since most of the nations are politically stable and investor-friendly.

1.6.2. Prospects in the Energy Sector

Electricity is necessary to power every economy's growth and development. As indicated earlier in the study, only 30% of the African populace have access to electricity. Unfortunately, those who have access to electricity also face frequent power cuts and load sheddings. Most rural communities do not have access to electricity and these rural folks also provide a large portion of the agricultural produce. Agricultural and Industrial productions can be made more efficient when there's electricity. Individual households also need electricity to cook, study and do certain basic economic activities like selling frozen fish. The Internation Renewable Energy Agency reports that the average per capita electricity consumption in Sub- Sahara Africa excluding South Africa is 153 kWh/year and nearly 600 million people in Africa lack electricity (IRENA, 2012). The report further stipulates that 250GW will be needed to meet the growing demand by 2030.

Investors can take the opportunity to partner with governments to provide the additional supply of energy. The continent is already endowed with both renewable and non-renewable energy sources like abundance of sunshine, large water bodies, strong tidal waves, oil and uranium deposits to provide energy.

1.6.3. Prospects in Agriculture

Growing of crops and rearing of farm animals has continued to remain and will always remain the lifelong support of human existence. The fertile lands of Africa and the large water bodies like Lake Victoria, River Nile, River Congo and Lake Volta provide rural and urban folks with abundant fish and crops that has served as a source of livelihood for most peasant farmers. For example in western Kenya, 60% of households depend on fish as a source of income or food

and Lake Victoria provides over 90% of fish supplies in Kenya. The seas that border the continent have also provided us with fish supplies and has served as a means of transport for exportation. Some crops like Cassava, Plantain, Banana, Rice, Beans, Mango, Coconut, Cinnamon, Cowpeas and many fruits and vegetables can easily be cultivated on the tropical soils of Africa. Fruits like Apples, Strawberries, and other temperate regions related fruits can also be found in the Southern parts of Africa. The Agricultural sector continues to be the largest employer of the continent's working populace. The AfDB reports indicate that in recent times, Africa has experienced increased large-scale foreign investments in agriculture (AfDB, 2012). Over the period of 30 years, Africa's agricultural production has increased by 160% and the continent still struggles with undernourishment. With about 60% of the world's uncultivated arable land in Africa, there is still a strong potential for Africa to move from being a net importer of food to a net exporter to the world (Plaizier, 2016). The UNICEF Generation2030 Africa report indicates that by 2050, Africa's population will reach about 2.4 billion and will be over 4 billion at the end of the century and all these mouths must be fed (UNICEF, 2014)

The potentials and opportunities these challenges present are, with a vast land of uncultivated fertile land, large-scale agricultural investors can take advantage. Also, with the large and rivers flowing from the north to the south, irrigation farming can easily be tapped into. Also, there can be a public-private partnership between investors who are interested in dam projects for huge returns. The large percentage of the youth in Africa's population dynamics also offers a source of cheap labour to investors as compared to other continents. Animal and fish cultivation is also a possible area for investments since we are surrounded by unpolluted water bodies with lots of fish in them. The temperature of the continent also is very appropriate for most farm animal rearing.

1.6.4. Prospects and Opportunities in Infrastructure

Africa's poor infrastructure paves way for huge investment opportunities which unlock the untapped potentials in the continent. As discussed earlier in the challenges of economic growth in Africa, proper road network is a major issue. A study report done in 2010 indicates that 25% of SSA roads are paved. This practically means that 3.6km of road per 1000 persons for the region as compared to the world average of 7km per 1000persons (AfDB, 2010). Due to the difficulty of

most SSA governments in raising adequate funds to close this gap, public-private initiatives have started springing up as an alternative means to fill the gap of financing.

Investors can take advantage of the huge benefits from toll road tax because of partnering with governments. These Public-Private partnership investments in road construction have increased greatly from $1.4 billion (1990-1999) to $21 billion (2000-2005) in Africa. A recent huge road investment example is the Lekki- Epe toll road in Lagos that cost $ 385 million (AfDB, 2010). Other huge investment opportunities are the $11.5 billion Maghreb Highway which is expected to be completed in 2018. Therefore, investments can cash in on these road financing gaps and will at the same time promoting mobility and intra-trade and reduce transport cost among African countries.

The rail sector is also an opened door for investment opportunities in Africa. This according to research is the least developed transport sector in Africa (AfDB, 2010). Most of the railways in the continent were developed by the colonial rulers for transporting raw commodities from the rural to the urban areas and have not undergone renovation. A 2010 report by the AfDB on railways indicates that, in 2007 Africa had 69000 km of rail way line and only 55000 were operational. Most of the developed railway lines are in the Southern and Northern parts of Africa (AfDB, 2010). However, there have been new rail way investments like the Addis Ababa Light Rail in Ethiopia in 2015.

Africa mainly exports primary commodities that can be moved efficiently and at a low cost by railway transport. Also because of the huge traffic congestion in the major cities of Africa, a public–private partnership in this sector is very lucrative. Also, such investments come along with associated activities like locomotive buildings, logistics and communications.

1.7. Summary, Conclusions and Policy Recommendations

Africa is currently the fastest growing continent in the world. The economic growth and development story started after colonial rule, and for most countries, it was in the 1960s. From a growth rate of 1.69 in 1961, SSA has undergone undulating trends in growth and is currently 4.34 in 2014. The GDP per capita income over the period of 54 years (1960-2014) has increased about 47.67%. Agriculture in the past was the front-runner spearheading economic growth in Africa.

However, though the sector is still the largest employer, other sectors like Service sector and the Mining/ Oil sector are noted to be pushing the growth of Africa. The leading economies that are reshaping the economy of Africa are Nigeria, South Africa and Egypt with increased growth performance in the service sector, industry and the agricultural sector. Capital formation trends, human capital and natural resources were identified in this study to have a strong influence in output generated by the continent. The African continent still faces some challenges like corruption, political instability, poor infrastructure, and capital flight which have been a major contributor of setbacks in its economic growth since independence. With all its challenges, Africa still exhibits some prospects and potentials in various sectors like agriculture, power and infrastructure which has a potential of generating millions of dollars to both private and public investors. These prospects when harnessed will greatly increase output and improve the living standards of the African people.

The paper starts with an in-depth introduction and background of Africa's economic growth since independence. It also outlines the research objectives and research questions sought to be answered by the end of the study. Section 2 clearly talks about the economies in Africa that are spearheading the economic growth the continent is realizing recently. Section 3 expatiates on the economic variables of growth and its trend over the years. Whiles section 4 talks about the challenges facing economic growth in Africa, section 5 outdoors the unseen potentials Africa has to offer the world. Section 6 summaries the whole study and concludes with policy recommendations suggestions.

1.7.1. Policy Recommendation

After considering Africa growth concepts, challenges and prospects, the study makes the following policy recommendations to governments and various stakeholders:

I. Due to the bi-directional causality between growth and capital formation which was a finding by Uneze (2013) and the identical trending between the two variables, policies must be directed at improving and increasing capital formation so as to increase the growth of output. Some targeted policies like
   - Reducing state budget deficits

- Reinstituting the investment tax credit
- Lowering the Capital gains tax rate
- Replacing capital income taxation by consumption taxation

II. Policies should be targeted at reducing poverty and attaining the Sustainable Development Goals adopted by UN member countries in 2015. Poverty reduction policies like;
   - Rural job creation for income empowerment through agriculture and education
   - Improvement of rural infrastructures like rural electrification and road network.

III. Policies to transform our raw natural mineral commodities exportation to refined goods exportation will bring more income to governments.

IV. Policies that will minimize paper or manual governance system to electronic governance will reduce the rate of corruption and increase transparency in governance.

V. Policies that will encourage public-private partnership must always be supported so as to fill the gap in infrastructure financing in Africa.

VI. Strengthen various national tax policies and supervision of multinational company activities to reduce capital flights and tax evasions.

CHAPTER TWO

2. A PANEL DATA ANALYSIS ON THE IMPACT OF FDI, IMPORTS, AND FOREIGN REMITTANCES ON THE AFRICAN ECONOMY: AN ARDL APPROACH

In the 21st century, Africa has been considered as one of the fastest growing economic continents in the world (The World Bank Group, 2016). Since the global crises in 2009, the mean Gross Domestic Product (GDP) growth for Africa from 2010 to 2014 has been 4.3% whiles the world mean growth for the same period was 2.8% (United Nations Statistical Division, 2016). Gifted with precious natural resources and the recent dramatic improvements in the continent's economic management, Africa is gradually rising from its dark days of poverty and hunger (AfDB, 2013).

In the era of globalization where economies and global markets have interlinked with each other, most recent studies have focused on issues of economic growth. An early study on growth identified capital stock and labour as internal determinants of growth (Solow, 1956). Romer (1986) also contributed to the issue on determinants of economic growth by stating that knowledge is also an input in economic growth. Aside from these factors, empirical evidence has also shown that there are undoubtedly some external determinants of economic growth like Foreign Direct Investments, remittance and Imports (Lueth and Ruiz-Arranz, 2006; Barajas *et al*., 2009; Azman-Saini, *et al.*, 2010; Almfraji and Almsafir, 2014). The issue now this study seeks to address, is the impact of FDI, remittances and imports on economic growth in Africa.

Foreign Direct Investments (FDI), which involves the investment from one country to another and that includes the establishment of operations or acquisition of tangible assets and having stakes in other businesses have tremendously increased over the years in Africa (United Nation, 2014). In recent years, Africa has enjoyed massive inflows from various parts of the world including USA, China, U.K and many others. A 2014 report by the UNCTAD indicated a 4% rise of FDI to $57 billion as a result of international and regional market integration, investment and infrastructural activities (United Nation, 2014). As most African countries are working hard to attain middle-income status, this has attracted FDI in consumer-oriented industries including food, Information Technology (IT), tourism, finance and retail (Hickey, 2012). The report released by World Investment on the performance of FDI expounded that South Africa and Mozambique attracted a lot of FDI in 2013 through infrastructure and this led to the southern region of Africa

enjoying almost a double of FDI inflows to about $13 Billion. In East Africa, Ethiopia and Kenya led the region by attracting foreign players in the transport, manufacturing, and the Oil and gas sectors of the economy. Ethiopia also attracted lots of Asian investments as it served as a manufacturing base. FDI inflows in that region stood at $6.2 billion which was a 15% increment from 2013. The story about FDI for the Central and West regions of Africa was different as they both recorded a decline of $8 billion and $14 billion respectively in 2014. North Africa witnessed a 7% decline in FDI to about $15 billion as result of the unstable political environment (United Nation, 2014).

Table 2.1: *FDI Outlook in Africa for 2013*

Range	FDI Inflows	FDI Outflows
Above $3.0 billion	South Africa, Mozambique, Nigeria, Egypt, Morocco, Ghana and Sudan	South Africa
$2.0 billion to $2.9 billion	Democratic Republic of Congo and The Congo	Angola
$1.0 to $1.9 billion	Equitorial Guinea, Tanzania, Zambia, Algeria, Mauritania, Uganda, Tunisia and Liberia	Nigeria
$0.5 billion to $0.9 billion	Ethiopia, Gabon, Madagascar, Libya, Namibia, Niger, Sierra - Leonne, Cameroon, Chad, and Kenya	Sudan and Liberia
$0.1 to $0.4 billion	Mali, Zimbabwe, Burkina Faso, Cote D'Ivoire, Benin, Senegal, Djibouti, Mauritius, Botswana, Seychelles, Malawi, Rwanda and Somalia	Democratic Rep. of Congo,Morocco, Egypt, Zambia,Libya, Cameroon, and Mauritius
Below $0.1 billion	Togo, Swaziland, Lesotho, Eritrea, Sao Tome and principe, Gambia, Guinea, Cape Verde, Guinea Bissau, Comoros, Burundi, Central African Republic and Angola	Gabon, Burkina Faso.Malawi, Benin, Togo, Cote D'Ivoire, Senegal, Zimbabwe, Tunisia, Lesotho, Rwanda, Mali, Ghana, Seychelles, Kenya, Mauritania, Cape Verde, Guinea, Guinea Bissau, Sao Tome Principe, Botswana,

		Mozambique, Uganda, Niger, Namibia and Algeria

Source: United Nations Conference of Trade and Development (UNCTAD) Report 2014

According to the 2009 International Fund for Agricultural Development (IFAD), which is a specialized agency for United Nations, there are over 30 million Africans living in the diaspora. These migrants contribute about $40 billion to their families and communities every year. Africa as a continent enjoyed remittance inflow that exceeds the Official Development Assistance (ODA) inflows in recent times, and in some countries, the remittances exceeded the FDI inflows (IFAD, 2009). In 2010, remittances sent to Africa was about 2.6% of Africa's GDP. These figures are not the true reflection of remittances in Africa since the continent suffers from weak migration data and financial systems that do not allow formal records of the remittances. World Bank estimates show that remittances have increased from $9.1 billion in 1990 to $40 billion in 2010 and $35.2 billion in 2016 (Mohapatra and Ratha, (2010): The World Bank, (2016)). Figure 2.1 is a graph of remittances outlook for SSA countries from 2000-2014. The graph represents personal remittances received as a percentage of gross domestic products. Averagely, it is shown from the graph that Lesotho has received the highest remits over the period.

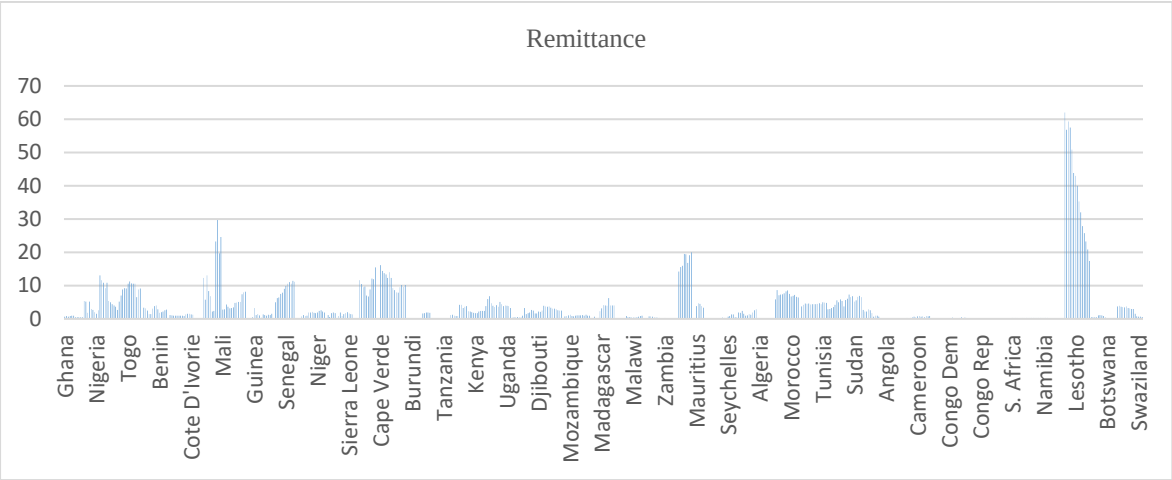

Figure 2.1.: *Remittance in Africa from 2000-2014*
Source: Author's computation from World Bank Data from 2000-2014

Though the continent provides the world with many natural resources through exportation, Africa also imports more than it exports. Some of the import items are food, clothing and technology. In recent times countries like China, India have hugely increased their trade relationship with most African countries. From the World Development Indicators, West Africa experienced an average of 40% in imports as a percentage of GDP from 2010-2014 (The World Bank Group, 2016). However, countries like Liberia and Togo from 2010-2014 used about 100% of their GDP to Import Goods and Services into the country from the periods of 2010-2014. East Africa, however, has used about 30% of their GDP in Imports over the same period. The story was not so different in Central Africa (about 40% of GDP) with the Congo Republic recording the highest imports and using about 50-70% of their GDP to import goods and services over the period from 2010-2014. The biggest economy in Southern Africa (South Africa) recorded the least in-terms of imports as a percentage of GDP whiles the smallest economy in that region (Lesotho) recorded over 100% of imports per GDP over the periods of 2010-2014 (The World Bank Group, 2016).

Since the 21st century, Africa's GDP has been on the rise even though the rate of growth has been low most times. From 2005 to 2008 the annual GDP growth of Africa hovered around 5.5%. It, however, declined in growth to about 2.4% in 2009 and 4.7% in 2010. In recent times, most of the world's fastest-growing economies have been found in Sub-Sahara Africa (United Nation, 2010). The World Bank projected Sub-Sahara Africa's growth to an average of 3.7% in 2015 which

is a further decline from 4.6% in 2014. Currently, it is projected that Africa will decline to about 4.4% in 2016 and 4.8% in 2017 (World Bank, 2015).

The study is organized and arranged in the following sections: Section 1 gives the introduction, research objectives, and an overview of growth and economic performance in Africa. Section 2 highlights the various empirical literature on growth, FDI, remittances and imports. The data, variables, methodology and duration the study covered are clearly explained in section 3 of this research study. Whiles section 4 talks about the results of the study, section 5 concludes on the study by recommending policies based on the findings

2.1. An Overview of African Economies and Overall Growth

The political sovereignty of African countries started after the 1950s and by 1966, 75% of Sub Saharan African countries were politically independent (Ndulu *et al.*, 2008). Periods before the 21st century were characterised by military conflicts, economic mismanagement, and unsustainable external debt (Zamfir, 2016). As the world growth rate averaged around 2% from 1960-2002, growth in Africa was fairly not encouraging (Picker, 2004). From 1975-1995, Africa growth rate remained stagnant and even recorded a negative growth rate of 1.5 from 1990-1994 (The Economist, 2000: Zamfir, 2016).

However, in recent times, Africa has been considered as one of the fastest growing continents in the world by the International Monetary Fund (IMF) and World Bank (The World Bank Group, 2016). Over the past 15 years(2001-2014), the growth rate of Africa has averaged around 5%. With a sustained and impressive growth rate in the millennium, some African countries were among the fastest growing economies in the world (Zamfir, 2016). After the global economic crises in 2007-2008, Africa's growth slowed down to about 2.5% in 2009 with Per capita income dropping from 4.2% in 2007 to 0.07% in 2009 (The World Bank Group, 2016). In Africa, the global crisis was mainly felt through fall in the export volumes and in commodity prices (OECD, 2010). Since then, the economy of the continent has grown above 4% with the year 2015 experiencing the lowest growth of 3.5% as a result of the end in the commodity price super-cycle, the slowdown in the Chinese economy, and tightening of global financial conditions (The World Bank Group, 2016: Zamfir, 2016). According to the World Bank data on Poverty headcount ratio as a percentage of

the total population, there have been significant reductions in poverty from 56.75% in 1990 to 42.65% in 2012 (World Bank, 2016).

The story of Africa's growth can never be complete without mentioning of its emerging economies that have been considered as the fastest growing economies in the world. Though these countries are not developed countries, their growth has been remarkable. Rwanda in 2003, had a growth rate of 1.45 but has constantly maintained an impressive average growth rate of above 7% to 2014. However, in 2015, growth fell to 6.9%. Though Rwanda has an impressive growth, the incidence of extreme poverty was about 60% in 2010. Other countries like Tanzania, Mozambique, Cote d'Ivoire, Democratic Republic of Congo have all grown above 7% since 2014 and Ethiopia lead the chart of fastest growing economies in Africa with a growth rate of 9.6 in 2015 (Murori, 2015). East Africa has the highest growth rates in 2015, followed by West Africa, Central Africa and Southern Africa (AfDB *et al.*, 2016).

The Service sector contributes to about half of Africa's GDP and has grown more than twice the average growth of the world during 2009-2012. (UNCTAD, 2015). Though Africa is home to 60% of the world's uncultivated land, agriculture sector contribution to GDP has been falling from 23% in 1990 to 17% in 2015 (Mo Ibrahim Foundation, 2013: World Development Indicators, 2016). Natural resources in Africa contributes greatly to Africa's economic growth. 77% of Africa's export in 2012 was accounted for by natural resources (ANRC, 2016).

2.2. Sources of Africa's growth

The average output per worker from 1960-2000 for SSA was 0.51 and it was the least in comparison with Latin America, South Asia, East Asia, and the Middle East and North Africa who grew at an average of 0.76, 2.18, 3.89, and 2.37 respectively based on the Collins- Bosworth growth accounting decomposition (Ndulu and O'Connell, 2003). Based on the Ndulu and O'Connell (2003) revised data of 19 SSA countries with balanced data, the output per worker grew mildly with 13.5% average growth rate over the period of 1960-2000. The undulating nature of growth per capita has been heavily influenced by total factor productivity, capital investments and human capital investments. For example, the half-decade average growth per worker in SSA leapt from 1.74 in 1965-1970 to 2.33 in 1970-1974 and this was accompanied by growth in total average factor

productivity which grew from 0.76 to 1.06. Capital investments and human capital investments also corresponded with an average increase in growth (Ndulu and O'Connell, 2003). However, with a large fall in total average factor productivity from 1975-1980, average output growth also fell from 2.33 to 0.19 in the previous half-decade though human capital increased. A rise in productivity during the late 90s also influenced output per capita in SSA to rise during the same period (Ndulu and O'Connell, 2003). Fosu (2008) based on Ndulu and O'Connell, (2003) concluded that capital and education correlates positively with growth whiles total factor productivity had a negative relationship though small in magnitude.

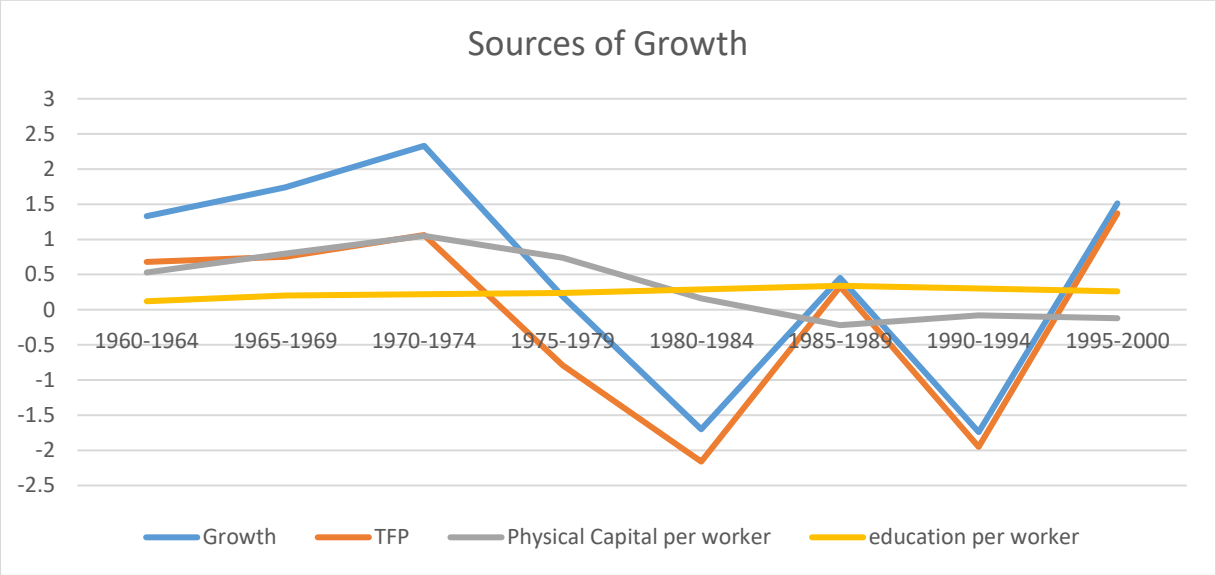

Figure 2.2.: *Graph of Output per worker, Total factor productivity, Physical capital per worker and Education per worker*

Source: Data from Ndulu & O'Connell, Revised Collins-Bosworth Growth Accounting Decomposition (2003).

The following are the research objectives of the study:

- To examine the long run and short run effects of FDI, imports and remittances on GDP growth in Africa
- To examine if there exist a long run co-integration among economic growth, FDI, remittances, and imports.
- To examine the causal relationships that exist between economic growth, FDI, remittances, and imports.

2.3. Literature Review

The importance of economic growth has led many researchers to come out with various theories and several empirical growth nexuses. This paper specifically focuses on the empirical works surrounding FDI, imports remittance, and growth.

Remittances are countercyclical in nature, unlike other monetary inflows. Family members abroad assist their relatives back home continuously in perilous times even when they themselves are going through economic challenges. In a way, remittances can be viewed as a form of insurance that helps families and societies to weather external shocks (Ratha, 2013). According to Bayar (2015), countries like Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Poland, Romania, Slovak Republic and Slovenia benefit strongly from foreign remittances. The Dumitrescu and Hurlin (2012) causality test was applied to data spanning from 1996-2013 and the result showed a unidirectional causality from remittance to economic growth. A study on the effect of international remittances on poverty, inequality, and development in rural Egypt used a survey of 1000 household and applied the predicted income equations. The study found that remittances have a small but positive impact on poverty reduction in Egypt (Adams, 1991). Fayissa and Nsiah (2010) studied on the aggregate impact of remittances on growth in Africa using a panel data set from 1980-2004. The finding from this study was that remittances to Africa have a positive impact on economic growth as it provides an alternative way to finance investment and overcome liquidity constraints. Other works like Lueth and Ruiz-Arranz (2006) and Tahir *et al.*,(2015) supported the assertion with empirical works to show that foreign remittance has a positive relationship with an economy's growth. However, Barajas, *et al*., (2009) also concluded from his study that, remittances from workers have no effect on economic growth. The role of remittances in Africa and the motive of remitting has extensively been examined by various researchers (Sander, 2004: Azam and Gubert, 2005: Adams R. H., 2006)

The impact of FDI on an economy have widely been researched for both country level and panel level related studies. Several outcomes from strong significance to no impact have been reached by researchers making it very difficult on concluding on their relationship. A study that covered Denmark, Sweden, Finland and Norway from 1970-1990 used the Lag-augmented Vector auto-regression indicated no causal relationship for Finland and Denmark between growth and FDI (Ericsson and Manuchehr, 2001). Other research undertaken in Asia at both country level and

panel level have suggested there is no relationship between FDI and growth (Chowdhury and Mavrotas, 2006: Chakraborty and Nunnenkamp, 2006).

A weak relationship was found between FDI and Growth which existed among 32 developing and developed countries. The conclusion given for this finding was that for FDI to boost growth through technology and knowledge spillovers depends on the degree of complementarity and substitution between domestic investment and FDI (De Mello , 1999).

A recent study in Sub-Sahara Africa on the relationship between economic growth and FDI and the channel that links the two indicated that improved institutions and financial development enhance FDI to positively affect growth in Africa (Kamara, 2013). Another study on Sub-Sahara Africa from 1980-2000 also confirmed the statistical significance of FDI in the determinant of growth in Africa. The study also concluded that a bi-directional causality existed between growth and FDI (Seetanah and Khadaroo, 2008)

In a globalized world where the role of international trade is pertinent to an economy's growth, imports and exports have been largely studied. This study, however, focuses on the empirical relationship between imports and growth. A study in India using a time series from 1970-2010 indicated that there existed a bi-directional relationship between growth and imports in India (Mishra, 2012). Another time series study using a multivariate VAR approach in analysing the relationship between growth and import in Turkey had very interesting results. In Turkey's situation, a bi-directional causality was found between GDP and investment goods imports, and also with raw material imports. The same study also concluded that the exist a unidirectional causality between GDP and goods imported for consumption use in Turkey (Uğur, 2008). Shahbaz and Rahman (2012) also confirmed that imports also granger cause growth in Pakistan. In Ghana, a positive long-run relationship was found to exist between the intermediate capital goods imported and Ghana's economic growth. The study used Johansen co-integration technique with quarterly data from 1991 to 2011 (Osei, 2012). Zhong and Zou (1995) also contributed to literature by investigating the relation between technology imports and economic growth in developing countries. They found out from their study that for developing countries, importing plants and equipment have a tendency of boosting economic growth. Though there seems to be a unilateral decision on the relationship between imports and GDP, other researchers like Saaed and Hussain, (2015) found no significant relationship between growth and imports

2.4. Methodology and Data

This section of the study describes the data types used for the study, the methodology applied, and the variables under consideration in the study. It gives a lucid explanation of the methodology employed and why this methodology is the best fit for the study. Since the co-integration test methodology, we used in this paper requires not having an integration of order two variables in the analysis, we will start with testing the degree of the integration of the variables in the panel. But the panel unit root test is classified as the first and second-generation unit root test based on the existence of the cross-sectional dependency in the unit root test. Thus, before implementing the statistical method, the study explains briefly cross-sectional dependency tests and the panel unit root tests and continue with the explanation of the ARDL approach. Also, the duration covered for the purposes of this study is well outlined.

2.4.1. Cross Section Dependence Tests

Cross section dependence can be explained as the interaction between cross-sectional units (Baltagi *et al*., 2012). Let's consider a heterogeneous panel model data;

$$y_{it} = x'_{it}\,\beta_i + u_{it}\,, \qquad (1)$$

for i= 1,…..n; t =1,…..,T

where i indicates the cross-sectional units, t is the time series component, y_{it} represents response variable, x_{it} represents the independent variables of dimensions k x 1 with β_i as its coefficient. The error term (u_{it}) is independent and identically distributed over periods and is uncorrelated to x_i but is cross-sectionally dependent. u_{it} is described as cross-sectionally dependent when Σu_i is non-diagonal (Baltagi *et al.,* 2012). Thus, the null hypothesis of cross-sectional dependence can be expressed as:

$H_0 : \rho_{ij} = 0$, for $i \neq j$ whiles the alternative hypothesis can be written as

$H_1 : \rho_{ij} \neq 0$ for some $i \neq j$

Here, ρ_{ij} (correlation coefficient of the errors) can be mathematically derived as $\rho_{ij} = \sigma_{ij}/\sqrt{(\sigma_i^2\ \sigma_j^2)}$. Cross-sectional dependency in dynamic panels can be severe. In the presence of sufficient cross-sectional dependency in the data, the decrease in estimation efficiency can be so large such that the

pooled panel least square estimator may provide little gain over the single equation ordinary least squares (De Hoyos and Sarafidis, 2006).

When dealing with seemingly unrelated regression estimation in a fixed N case as T⟶∞

Breusch and Pagan (1980) proposed an *LM* statistics for cross-sectional dependency in a heterogeneous panel. This can be written as ;

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}^2_{ij} \qquad (2)$$

The *LM* statistic is asymptotically distributed as X^2 with N(N-1)/2 degree of freedom. The Breush-Pagan *LM* test statistics is not applicable when n⟶ ∞ basically because the *LM* statistic is not correctly centred for finite T and the bias is likely to get worse with large N. Pesaran (2004) however proposed a scaled version of the Breush- Pagan *LM* test which can be expressed as;

$$CD_{lm} = \sqrt{\frac{1}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} (\widehat{T\rho}^2_{ij}-1) \qquad (3)$$

Here, CD_{lm} is asymptotically distributed as N(0,1) under the null with T⟶∞ first, then n⟶ ∞ (Baltagi *et al.*, 2012). For a finite T, E($T\hat{\rho}^2_{ij}$-1) is not correctly centered at zero, and as n becomes large, CD_{lm} is likely to be accentuated(Baltagi *et al.*, 2012). Therefore, using the standard normal distribution may not be a good approximation for the null distribution of CD_{lm} statistic in the finite samples as it may lead to big size distortions. Pesaran (2004) also developed another alternative with the CD statistics having a mean at exactly zero for finite of T and N under homogeneous, heterogeneous dynamic models and nonstationary models to a single or multiple breaks in the slope coefficient and/or error variances. This diagnostic test is based on the average of sample correlations which is valid for large N and can be written as:

$$CD = \sqrt{\frac{2}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \sqrt{Tij}\hat{\rho}_{ij} \qquad (4)$$

where T_{ij} is the number of time series observations between units i and j. ρ_{ij} is equal to ρ_{ji} and can be mathematically represented as

$$\hat{\rho}_{ij} = \hat{\rho}_{ji} = \frac{\sum_{t=1}^{T} e_{it} e_{jt}}{(\sum_{t=1}^{T} e_{it}^2)^{\frac{1}{2}} (\sum_{t=1}^{T} e_{jt}^2)^{\frac{1}{2}}} \qquad (5)$$

e_{it} is the OLS estimate of u_{it} in equation (1) above and can be expressed as

$$e_{it} = y_{it} - x_{ij}'\hat{\beta}_i \qquad (6)$$

The next step after the cross-section dependence is the panel unit root testing. To apply first generation or second generation panel unit root test depends on whether the cross-sectional units are independent or dependent. In the case of cross-sectional independence, the first generation unit root tests are applied whiles the second generation unit toot test is applied to units with cross-sectional dependence.

2.4.2. First Generation Panel Unit root Tests

The study of Panel unit root tests have been clearly explained by Baltagi (2005) and will be summerized for the purposes of simplicity. A panel data is characterised by a timeseries component and an individual or country specific component. The addition of a cross-sectional dimension to time series increases the power of the unit root tests by including informations relating to various individuals or countries. Baltagi and Kao (2000) rightfully noted that the objective of panel data nonstationarity is targeted at the best of both worlds, that is analysing non stationarity from the time series and from the cross-section which increases the data and its power. Over recent years, the issue of cross-sectional dependence has been extensively researched and this led to second generation of panel unit root tests.

The hypothesis of cross-section independence is generally termed first generation panel unit unit root tests and has been thoroughly researched by (Levin and Lin, 1992), (Im *et al.*,2003), and (Hadri, 2000). The second generation panel unit root is hypothised on the bases of cross-sectional dependence (Pesaran, 2004). The second-generation unit root test employs the augmented standard DF test with the cross-section averages of lagged levels and first difference of individual series (CADF) test (Pesaran, 2004).

2.4.2.1. *Levin, Lin and Chu (LLC) Test*

These researchers argued that individual unit root tests have limited power againts the alternative hypothesis with highly persistent deviation from the equilibrium, and is very severe in small samples. To overcome this, they suggest a more powerful unit root test for each cross-section.

H_0 : Individual time series contain unit root (common unit root process)

H_1 : Individual time series is stationary.

This can be mathematically represented as:

$$\Delta Y_{it} = \rho Y_{i,t-1} + \sum_{L=1}^{pi} \theta_{iL} \Delta Y_{it-L} + \alpha_{mi}\, d_{mt} + \varepsilon_{it} \quad (7)$$

Where m=1,2,3, d_{mt} is the vector of deterministic variables and α_{mi} is the vector of the coefficient for model m=1,2,3. D_{1t} is an empty set which d_{2t} and d_{3t} are 1, and (1, t) respectively. The lag length starts from L=1 to p_i.

2.4.2.2. *Im, Pesaran and Shin (IPS) Test*

This test improves the LLC test as it overcomes the restrictiveness of ρ to be homogeneous across cross sections in equation (1). Here, it allows for the coefficient of $Y_{i,t-1}$ to be heterogeneous and suggests and alternative test procedure that is based on averaging individual unit root test statistics.

H_0: Unit root assumes individual unit process

H_1: stationary

2.4.2.3. *Breitung Test*

Breitung (2000) studied the local power of the LLC and IPS test against a sequence of alternatives and found out that if individual-specific trends are included LLC and IPS test experiences loss of power. Breitung used the Monte Carlo experiments to come out with a test that does not use bias adjustments and has a higher power.

Other tests like the Autoregressive Dickey-Fuller and Philips Perron which were also used as unit root tests in the study all apply the same procedures as the time series ADF and PP tests, but this case uses the Fisher chi-square and assumes individual unit root process as its null hypotheses.

2.4.3. Second Generation Panel Unit Root Test- CADF

Cross-section dependency in a residual can cause severe bias in the first-generation panel unit root tests (Cerasa, 2007). CIPS test is proposed based on a single common factor

specification assumption for the cross-section structure, and the assumption of known autocorrelation order of the residuals. CIPS is the simple averages of Covariate Augmented Dickey Fuller (CADF) and can mathematically be expressed as:

$$\text{CIPS} = \frac{1}{N}\sum_{i=1}^{N} CADF \qquad (8)$$

It is simple and intuitive nature makes it advantageous over the other cross-sectional dependency panel unit root tests. The study applies the truncated version of CIPS since it has satisfactory size and power even for relatively small values of number of cross sections and the time period respectively. Also, the truncated CIPS avoids undue influences of extreme outcomes that could arise when the period is small (Pesaran, 2004).

2.4.4. Data

In this study, a panel data set consisting of 30 African nations[1] are employed from the period of 2000-2015. These countries were selected based on the availability of data. Annual data from countries were used and the nature of the data was unbalanced with a total of 418 observations applied to the study.

For the purposes of clarity, all variables in the study are defined based on the World Bank (2016) data definitions.

Gross Domestic Product growth rate is the annual percentage growth of GDP at market prices based on constant local currency. The aggregation method of weighted averages is used and the aggregates are based on constant 2010 US dollars.

Personal remittance as defined by the World Bank is the sum of personal transfers and compensations of employees. Personal transfers basically represent the broader definition of worker remittances which includes all current transfers in cash or in kind between residents and nonresident individuals, independent of the source of income of the sender and the relationship between the households. The type of data used in this study is the personal remittances received as apercentage of GDP.

[1] The countries include; Ghana, Nigeria, Togo, Benin, Cote D'Ivoire, Mali, Guinea, Senegal, Niger, Sierra-Leone, Cape Verde, Tanzania, Kenya, Rwanda, Uganda, Mozambique, Madagascar, Malawi, Mauritius, Seychelles, Algeria, Morocco, Tunisia, Egypt, Sudan, Cameroon, South Africa, Namibia, Botswana, and Swaziland

FDI are the net inflows of investments to acquire a lasting management interest(10 percent or more voting stock) in an enterprise operating in an economy other than that of the investor. The FDI net inflow is divided by GDP.

Imports of goods and services represent the value of all goods and other market services received from the rest of the world. It is measured as a percentage of GDP

The study employed the use of panel data as against the traditional time series data because of its enormous advantages. Some of the advantages include;

- There is heterogeneity in variables
- Panel data gives more information, more variability, less collinearity among variables, more degrees of freedom and more efficiency
- Studying the repeated cross-sections of observations makes panel data suitable for research related to dynamics of change (Gujarati, 2003)

All variables are applied in the percentage form except GDP growth which was applied in the natural log form.

2.4.5. ARDL Bounds Testing Approach

Pesaran *et al.*, (2001) developed a bound testing cointegration approach for I(0) and I(1) variables and this test is based on the least square estimation and the unrestricted error correction model. Based on the extension of the IS-LM model by Mundell-Fleming and following the study by (Tahir, *et al*., 2015) the empirical model specification is given as:

$$lng_{it} = b_0 + b_1 rem_{it} + b_2 fdi_{it} + b_3 imp_{it} + \varepsilon_{it} \quad (9)$$

where lng_{it} is the natural log of GDP growth rate, rem_{it} is personal remittances, fdi_{it} is FDI, imp_{it} is imports, and ε_{it} is the error term.

The main advantage of applying the Panel ARDL model is that it can be used when variables have I(0) and I(1) (Erdem *et al.*, 2014). Also, the model considers sufficient numbers of lags to capture the data generating process in a general-specific framework (Demirgüneş, 2015). Through a simple linear transformation, the dynamic error correction model can be derived from the ARDL

estimation (Banerjee *et al.*, 1993). The Pooled Mean Group (PMG) estimator and the Mean Group (MG) estimator are suggested for ARDL models (Pesaran and Shin, 1999). The MG estimator is consistent under the assumption that the intercept and the slope vary across countries. On the other hand, the PMG estimator is consistent with homogeneous slope assumption in the long run. The error term in the PMG is assumed to be white noise and there exists a long-run association between the explained and the unexplained variables. It also allows us to evaluate whether a long run homogeneity is implemented in the relationship between the explained and unexplained variables. The Hausman test suggested by Hausman (1978) is applied to test the homogeneity of the long run parameters and the validity of restriction. Both the MG and PMG estimators are consistent under the long-run homogeneity assumption. However, PMG is an efficient estimator. The Hausman test statistics helps in making the decision on whether to apply the MG or the PMG based on the acceptance or rejection of the null hypothesis of homogeneity.

Based on the log model relationship established in equation (1), the unrestricted error correction model can be written as:

$$\Delta lng_{it} = b_0 + b_1 \, lng_{it-1} + b_2 \, rem_{it-1} + b_3 \, fdi_{it-1} + b_4 \, imp_{it-1} + \sum_{i=1}^{m} b_5 \, \Delta lng_{it-i} + \sum_{i=1}^{m} b_6 \, \Delta rem_{it-i} + \sum_{i=1}^{m} b_7 \, \Delta fdi_{it-i} + \sum_{i=1}^{m} b_8 \, \Delta imp_{it-i} + \varepsilon_{it} \quad (10)$$

From the equation above, the sign Δ indicates that variables have been first differenced and apart from the dependent variable, the terms with Δ shows the short dynamics of the model. Also, the first lagged terms capture the long run relationship among the variables. ε_{it} is the white noise term in the cointegration equation. The essence of the lag length cannot be overemphasised as it serves as the bases for choosing the right ARDL (p,q) model. To select the right model, we employ the Akaike Information Criterion (AIC). The model with the lowest AIC value is considered the most appropriate for the model. The null hypothesis ($b_1 = b_2 = b_3 = b_4 = 0$) which indicate no long-run cointegration will be tested against the alternative hypothesis ($b_1 \neq b_2 \neq b_3 \neq b_4$) indicating long-run cointegration. After establishing a longrun cointegration, the next step is to establish an error correction model that captures the long run dynamics in equation (3). This can be illustrated mathematically as;

$$\Delta lng_{it} = b_0 + \sum_{i=1}^{m} b_5 \, \Delta lng_{it-i} + \sum_{i=1}^{m} b_6 \, \Delta rem_{it-i} + \sum_{i=1}^{m} b_7 \, \Delta fdi_{it-i} + \sum_{i=1}^{m} b_8 \, \Delta imp_{it-i} + b_9 \, ECT_{t-1} + \varepsilon it \quad (11)$$

Where ECT is the error correction term which is developed from long-run dynamics in equation (3). The ECT is expected to be statistically significant and coefficient b_9 is expected to be negative. The essence of ECT is to show how the variables quickly converge to equilibrium or move together in the long run.

2.4.6. Panel Causality

The final stage of the procedure is to test for the causality. Based on the vector error correction model, the Granger causality test is usually done by running bivariate regressions in the form

$$\Delta y_{it} = b_0 + + \sum_{i=1}^{m} b_1 \ \Delta y_{it-i} + + \sum_{i=1}^{m} b_2 \ \Delta x_{it-I} + \ b_3 \ ECT_{t-1} + \varepsilon_{1t} \quad (12)$$

$$\Delta x_{it} = a_0 + + a_1 \ \Delta x_{it-i} + + \sum_{i=1}^{m} a_2 \ \Delta y_{it-I} + b_3 \ ECT_{t-1} + \varepsilon_{2t} \quad (13)$$

Where x and y are the individual variables in equation (4). Eviews 9 offers two basic ways of approaching granger causality. First, by treating the panel data as one common large stacked set of data where this method assumes all coefficients are the same across cross-sections.

$b_{i1} = b_{j1}$ for all i,j; and $a_{i1} = a_{j1}$ for all i,j. This method is called the stacked test or the common coefficient test.

Dumitrescu and Hurlin (2012) proposed the second approach where it allows for all coefficients to be different across sections. That is $b_{i1} \neq b_{j1}$ for all i,j; and $a_{i1} \neq a_{j1}$ for all i,j

2.5. Empirical Results

This section clearly shows the results estimated from the methodology and proceeds to give explanations and economic interpretations to the results. It starts with the explanations from the cross-sectional dependence test, then advances to the panel unit root test, and the ARDL Bound test result. Panel causality is also analysed using the Dumitrescu Hurlin Panel causality test and the paper ends with conclusion and recommendation.

2.5.1. Cross- Section Dependence Tests Results

Since the Panel ARDL model requires that variables should be I(1) or I(0) or both, but not I(2) it was essential to carry out the various panel stationarity tests. The residual cross-section dependence test which also forms part of the diagnostic tests indicated the presence of cross-section dependency in the residuals when Breush-Pagan LM, Pesaran scaled LM, and Pesaran CD tests were all applied. This signified the need for a second-generation panel unit root tests to be applied in this study. The Pesaran CD test is robust to single or multiple breaks in the slope coefficients and error variances (Pesaran, 2004). The Pesaran CD test also has correct size when samples are small, have satisfactory power, and also robust to the presence of unit root. From Table 2.2 below, Breush-Pagan LM, Pesaran scaled LM, and Pesaran CD test also have their P-value less than 0.005 indicating the presence of cross-section dependence.

Table 2.2.: Cross- Sectional Dependency Test

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	976.1821	820	0.0001
Pesaran scaled LM	2.844219		0.0045
Pesaran CD	9.540153		0.0000

Source: Authors' computation using Eviews 9

2.5.2. Panel Unit Root Test Results

From the second generation panel unit root test below(Table 2.3), FDI was stationary at levels I(0) whiles remittances, imports and growth were all stationary after the first difference I(1). When the p-value is less than 0.05, the null hypothesis is rejected thereby accepting the alternative hypothesis. As a result of variables having I(1) and I(0) and, the application of the Panel ARDL is appropriate.

Table 2.3.: *Second Generation Panel Unit Root Test Results CADF (Case of Intercept only)*

Variable	Test statistics-Level	Test Statistics-1st Difference
Rem	2.133	-3.594*
Fdi	-3.300*	
Imports	0.014	-1.810*
Lngrowth	0.939	-1.821*

Source: Authors' computation using STATA 12
*signifies stationarity when $p<0.05$, H_o: Unit Root

2.5.3. ARDL Bounds Test Results

After determining variables were I (0) and I (1) it was appropriate to run equation (3) and find out if there exists a long run co-integration. The Pooled Mean Group (MG) was applied as proposed by Pesaran *et al.*, (1999). The results of the Bound test (Panel ARDL) approach indicate that there exists a long run cointegration among GDP growth, FDI, imports and remittances. Based on the Akaike Information Criterion (AIC), the best model for the study is ARDL (2,2,2,2). The AIC graph in figure 2.3 gives a pictorial view of all the models estimated and evaluated. The model with the lowest AIC value is selected as the best fit model (Kutu and Ngalawa, 2016). Table 2.4 below also indicates the long-run and short-run dynamics of the ARDL (2,2,2,2) model. The significance of the cointegration equation confirms the existence of a long run relationship among the variables. The model adjusts to equilibrium at a speed of 103% in a year which means that the speed of adjustment to equilibrium occurs in less than a year.

The long-run section of the table shows that, FDI, imports, and remittances are significant in explaining growth rate dynamics in the long run. Imports and FDI have a positive association with GDP growth rates in Africa. A percentage increase in FDI will increase growth by 9% in the long run. This result supports the findings of Malikane and Chitambara (2017) and Seiko (2016). Also, with a percentage increase in imports, Africa's growth rate will be increased by 4% in the long run. This result supports the import-led growth nexus (Kim *et al.*, 2007). Increased imports of consumer products stimulate domestic import substituting firms to be innovative in order to compete with the imported products. An increase in innovation triggers economic growth in the long run. Also, an increase in the imports of capital goods and intermediate goods that are not available domestically has the ability to stimulate and foster growth by enabling local firms to diversify and specialize. (Kim *et al.*, 2007). From the long run results, a percentage increase in remittances decreases growth

in Africa by 25%. This can be explained by the moral-hazard problem of remittances reducing GDP growth (Fullenkamp, 2015). Since some remittance recipients constantly rely on relatives abroad and have regular inflow of remits, they have low incentive to work and invest. With a reduction in labour hours, overall productivity falls. Another reason for the negative effect of remittance at the macro level is its ability to increase consumption of nontradable goods, raise their prices, appreciate the real exchange rate, and decrease exports. This, as a result, damages the receiving country's competitiveness in world markets (Amuedo-Dorantes, 2014). Fielding and Gibson (2011) found evıdence of how the 'Dutch Disease' as a result of capital inflows shift resources from traded goods to non traded goods ın some Sub-Saharan African countries.

Table 2.4 also indicates that, in the short run, there is no overall significant effect of FDI, imports, and remittances on growth. However, considering cross-section short-run coefficients, we find interesting outcomes of short run dynamics among countries. 23 out 30 countries[2]representing about 77% of the countries under study have a significant cointegration equation. From the appendix (vi), Botswana has the fastest speed of adjustment to equilibrium (2.29) which occurs in less than half a year. Other countries like Madagascar, Niger, and Guinea also have a speed of adjustment occurring semi-annually. The cross-section short-run dynamics also showed that South Africa has the slowest speed of adjustment to equilibrium (0.17) among countries under consideration in the study. With the exception of Nigeria, the other two larger economies in terms of nominal GDP (South Africa and Egypt) in Africa do not have a significant long-run cointegration among the variables under study. Considering countries with long-run cointegration, Ghana, Madagascar, Seychelles and Sudan have a positive effect of imports on economic growth at all lags. Mali, Senegal, Kenya, Mozambique, Algeria, Cameroon and Swaziland have a negative effect of imports on growth. Based on the cross-section short-run effects results, countries with a speed of adjustment occurring in less than half a year (Guinea, Niger, Botswana) with the exception of Madagascar experience a negative effect from FDI on growth in the short run. Remittances, on the other hand, was not significant in most cases across countries at all lags.

[2] Ghana, Togo, Mali, Guinea, Senegal, Niger, Cape Verde, Tanzania, Kenya, Rwanda, Mozambique, Madagascar, Malawi, Mauritius, Seychelles, Algeria, Tunisia, Sudan, Cameroon, South Africa, Namibia, and Swaziland

Table 2.4.: *Panel ARDL estimations*

Variable	Coefficient	Prob
	Long Run Equation	
FDI	0.094*** (0.032)	0.0039
Imports	0.045*** (0.011)	0.0001
Remittances	-0.0254*** (0.073)	0.0006
	Short Run Equation	
Coint.Eqn01	-1.034*** (0.132)	0.000
D(growth(-1))	0.136 (0.083)	0.101
D(FDI)	-0.268 (0.366)	0.466
D(FDI(-1))	0.033 (0.197)	0.867
D(imp)	-0.011 (0.069)	0.863
D(imp(-1))	0.058 (0.071)	0.413
D(Rem)	6.373 (5.400)	0.239
D(Rem(-1))	-1.266 (1.443)	0.381
Constant	3.450 (0.671)	0.000

Source: Author's own analysis based on the Eviews 9 computation

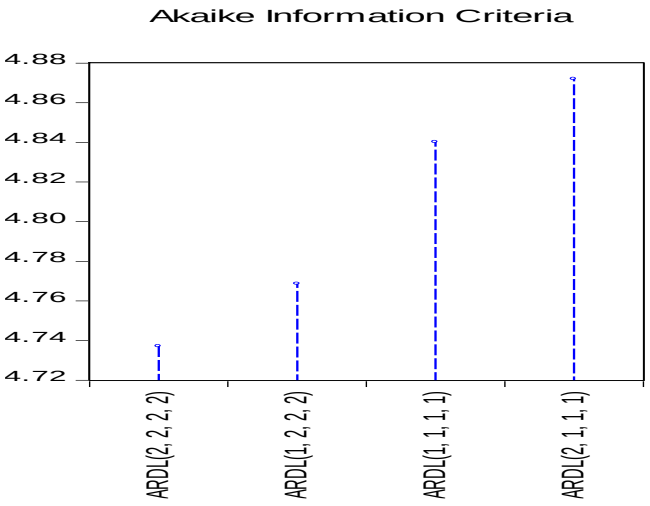

Figure: 2.3: Model Selection summary using AIC
Source: Author's own computation using Eviews 9

2.5.4. Panel Causality Test Result

Panel Granger causality is applied at this stage to know what variable homogeneously cause the other in the model. Dumitrescu and Hurlin (2012) proposed a test statistic based on the individual wald test of Granger non-causality averaged across the sectional units. Table 2.5 gives a lucid view of the Dumitrescu Hurlin Panel causality test that shows the panel causality existing between variables in the model. From the results below, there is no bi-directional causality among the variables in the model. Growth homogeneously causes FDI in our case and this means that FDI can be better predicted using the past values of both growth and FDI than it can be predicted using historical values of FDI alone. There is also a unidirectional relationship flowing from imports to growth, and from FDI to Imports.

Table 2.5.: *Dumitrescu Hurlin Panel causality test*

Null Hypothesis	Panel Granger Causality	P-value
FDI does not homogeneously cause Growth	ΔFDI ------- ΔGrowth	0.59
Growth does not homogeneously cause FDI	ΔGrowth ⟶ ΔFDI	0.03
Rem does not homogeneously cause Growth	ΔRem ------- ΔGrowth	0.27
Growth does not homogeneously cause Rem	ΔGrowth ------ ΔRem	0.38
Imports does not homogeneously cause Growth	ΔImports ⟶ ΔGrowth	0.0456
Growth does not homogeneously cause Imports	ΔGrowth --- ΔImports	0.59
Rem does not homogeneously cause FDI	ΔRem ----- ΔFDI	0.62
FDI does not homogeneously cause Rem	ΔFDI ------ ΔRem	0.50
Imports does not homogeneously cause FDI	ΔImports -------- ΔFDI	0.50
FDI does not homogeneously cause Imports	ΔFDI ⟶ ΔImports	0.05
Imports does not homogeneously cause Rem	ΔImports ------ ΔRem	0.14
Rem does not homogeneously cause Imports	ΔRem ⟶ ΔImports	0.004

Source: Author's computation using Eviews 9

2.6. Conclusion and Policy Recommendations

The objective of the study was to find out the long run and short run effects of FDI, Imports and remittances on growth in Africa. The estimation methods used was Panel ARDL as proposed by Pesaran *et al.*, (1999). Thirty out of fifty-four African nations were used in the study on the bases of availability of data. A long run equilibrium was established among economic growth, FDI, remittance and imports at a speed of adjustment of about 103%. Also, the results from the ARDL(2,2,2,2) model indicated that in the long run, FDI and imports are the significantly have a positive impact on Africa's economic growth levels whiles remittances have a negative relationship with economic growth. In the short run, FDI, remittances and imports were not significant variables to explain the short-run variations in the growth rates of Africa. Considering the country-specific short-run dynamics, 77% of the countries understudy had a significant long-run cointegration equation. Botswana, from this study, had the fastest speed of adjustment to equilibrium whiles South Africa had the slowest speed of adjustment to equilibrium. Ghana, Madagascar, Seychelles and Sudan experienced a positive relationship between imports and economic growth at all periods. Remittances were not significant at all lag among most countries.

The significance of FDI, in the long run, is very essential for policymakers across the continent. Some policies targetted at improving infrastracture, enhancing skilled workforce and improving labour relations are efficient ways of attracting FDI inflows. Also, developing key sectors of the economy that drive growth and also engaging in global and regional economic integrations can attract transnational corporations to invest in Africa (Willem te Velde, 2001). There should also be policies and stable economic conditions that will attract FDI inflows into Africa. For instance, governments of various African countries should focus on improving macroeconomic stability, enhance political stability, accelerate administrative reforms, and set out measures to reduce government bureaucracy (Nguyen , 2017).

African countries are encouraged to increase the importation of capital goods and intermediate goods that can not be readily found domestically. This strategic importation can lead to diversification and specialization thereby promoting growth. Governments must ensure a reduction in tax on capital goods and intermediate goods so that local firms can get the needed input for production.

In recent times, remittances that come to Africa from formal and informal channels is largest after FDI inflows. Though the study results showed a negative but significant impact of remittances on growth, in the long run, it has several benefits the economy can gain from if the right policies are put in place. For example, remittance inflow can smoothen consumption of receiving households, facilitate the accumulation of human capital, and ease the credit constraints of unbanked households in poor rural areas of Africa. As a result, it is recommended in this study that, African countries should enhance their financial systems to be able to capture the undocumented remittance inflows. Also, governments should put in place measures that will discourage over-dependence of remittances by recipients by creating employment and investment opportunities that will attract the working populace.

CHAPTER THREE

3. THE ROLE OF INSTITUTIONS IN THE ECONOMIC GROWTH OF SUB-SAHARAN AFRICA

Africa in recent times has been considered one of the fastest growing continents in the world (Mensah and Özer, 2016). Growth patterns in SSA, however, has remained undulating. For example, in 2000, annual GDP growth stood at 3.6% and shot up to 7.06% in 2006. However, growth fell to 5.4% in 2010 and declined further in 2016 to 1.24% (The World Bank, 2017). These growth patterns have led many economists to find out what determines growth in SSA and to understand the issue of income convergence among SSA countries (Ndambiri , *et al.*, 2012).

Also, another reason why the topic of growth has gained more prominence lately is to know why some countries are much poorer than others (Acemoglu and Robinson, 2008). In finding out the cause of slow growth among African economies, Sachs and Warner (1997) made a case that international cross-country framework coupled with poor economic policies, lack of openness to international markets, and some geographical factors contribute to slow growth in Africa. Some researchers postulate that when using the traditional Solow Model, an inclusion of an 'African dummy' is necessary to explain Africa's growth performance (Easterly and Levine, 1997) whiles Hoefller (2002) maintains that Africa's growth performance can be explained without any need of introducing an African dummy. Willem te Velde and Bezemer (2004) carefully documented the on-going debate on Africa's growth as presented in Appendix (i).

Based on the research finding of various economists to explain growth differences across countries, four (4) explanations have been given for this phenomenon: geographical disadvantage in location, culture and historical antecedences, less trading with the rest of the world, and weak institutions and bad policy choices (Kilishi, *et al.*, 2013; Acemoglu, *et al.*, 2001).

This study, however, narrows the focus on the role institutions play in economic growth. Acemoglu, *et al.*, (2005) concluded from their study that institutions indeed are the fundamental cause of income differences and long-run growth and based on that, this study sought to find out if institutions were relevant in explaining Africa's growth. However, to understand this better, there is a need to know what institutions are. North (1991) explains institutions as humanly devised

constraints (both formal and informal) that structure political, economic and social interactions. Research has shown some level of institutional dependency that exists between economic institutions, the nature of political institutions and the distribution of political power in a society (Acemoglu and Robinson, 2008). Also, it has been argued that institutions provide the incentive structure of an economy (North, 1991). That is, the structural framework of institutions shape the direction of growth.

There are basically four ways by which institutions and politics can be introduced into the neo-classical augmented Solow model (Aron, 1997). They can be brought into the augmented-Solow equation through the specification of the term for initial technical efficiency. Technical efficiency can broadly include institutions, technology, natural resources endowment, and climate (Mankiw, *et al.*, 1992).

The second way is by relaxing the assumption of identical rates of technical progress across countries. A study by David (1995) proved that technology is constrained by societal and institutional infrastructure. Therefore, we would normally expect a difference in technological progress between developing and developed countries.

The third possible way institutions play a major role in the augmented Solow model is the generalization of the production function to allow for productivity improvements in labour and reproducible capital (Aron, 1997). That is, the advancement of physical and human capital through institutional quality could affect productivity.

Finally, constant return to scale assumption in the augmented Solow model makes institutions and politics play an effective role in productivity. As the assumption may hold for OECD countries, it is rational to expect fixed cost incurred to be feasible in some economic sectors before production (Aron, 1997). Sectors like Infrastructure, Transport and Communications are sensitive to government effectiveness which lies in the domain of institutions. In view of this, the next section gives an empirical review of the impact of institutions on growth.

3.1. Literature Review on the Impact of institutions on Growth and Development.

There is inexhaustible literature on the impact of institutions on growth and development. For the purpose of this paper, we will attempt to review some relevant research works on the said topic.

Knack and Keefer (1995) assessed the impact of property rights on growth and found a positive significant relationship using indicators like contract evaluation enforceability and risk of expropriation. A significant contribution made by this study was that rates of income convergence to the USA increases when property rights are included in the growth models. Mauro (1995) also found corruption to have a negative relationship with growth and lowers investments in his cross-country study. Moving on to recent empirical studies, Pereira and Teles (2009) employed a System GMM approach to analyzing the effect of political institutions on various stages of democratization and economic development. Their findings reveal that political institutions foster growth especially in economies where democracy is not consolidated. The study also emphasized the relevance of political institutions to trigger growth among poor countries with high level of ethnical fractionalization, and among countries in a transition to democracy. Another study on the effect of institutions on growth using Panel OLS and GMM estimations revealed that favourable institutions increase growth (Siddiquia and Ahmed, 2013). Kostakis (2014)used Panel OLS and Extreme Bound analysis, revealed that political indicators such as corruption control, rule of law, and government effectiveness have a significant impact on growth. With data from about 68 countries, Olson Jr, *et al.* (2000) proved that countries with effective governance increase productivity. Another study using more than 100 countries concluded that democracy reduces economic volatility (Klomp and. De Haan, 2009).

Acemoglu and Robinson(2008) argued that the main factor of income differences among countries are the differences in economic institutions. Adkins, *et al.*,(2002) explained the impact of institutions on economic performance by using a stochastic production frontier and found out that, having institutions promote greater economic freedom and also enhances efficiency. Other studies that support this result include (Berggren and Jordahl, 2005; Bengoa and Sanchez-Robles, 2003). A study that applied the meta-analytic technique found an overall positive effect between

economic freedom and growth (Doucouliagos and Ulubasoglu, 2006). They also found a positive indirect effect of economic freedom on growth was through the stimulation of physical capital.

Legal institutions also play a very important role in growth and development of the society. Beck (2010) explained legal institution as a subset of the institutional framework that has rules governing commercial relationship between economic agents in a society. In light of this, Kuncic (2013) documents a list of proxies used by researchers for legal institutions which includes the rule of law variable developed by the World Governance Institute and was adopted in this study. Touching on emprical works, Klapper, *et al.,* (2006) revealed that high cost of registering a business hampers the entry and growth of new firms. This finding was confirmed by the study of Ciccone and Papaioannou (2007) who found out that countries with low entry regulations attract more firms subject to the global demand and technology shift. In developing countries, it was found that correlation among different rule of law components were not tight and inferences made on the effect of property rights may not be warranted (Haggard and Tiede, 2011). Another study looking at the relationship between legal institutions, innovation and growth compared a rigid legal system (laws are set before technological innovation) and a flexible legal system (laws are set after technological innovation) (Anderlini, *et al.,* 2013). They found out that at the intermediate stage of technological development, the flexible legal system is more preferred as it dominates in welfare, amount of innovations, and growth in output. The rigid system was more prefered at the early stages of technological development whiles in advanced technological developments, both systems have an equivalent impact.

Narrowing the review to focus on recent works done on Africa revealed that indeed institutions are relevant to explain growth patterns in Africa and regulatory quality mattered most (Kilishi, *et al.,* 2013). Ganau (2017) applied the spatial econometric approach to 50 African nations in order to examine whether and how institutions affect GDP per capita in the short-run. The findings from this study reveal that a negative relationship exists between democracy and regime instability on economic growth. Also, the study concludes that the level of democracy by neighbouring countries stimulates growth whiles regime unstable neighbouring countries decreases growth. Combey (2017) applied the Dynamic Common Correlated Mean estimation on West African Monetary Union states from 1996-2014 and found rule of law to be relevant in fostering growth in the zone. Also, voice and accountability, and political stability have no direct

effect on growth. However, there is a positive indirect effect through human capital and negative indirect effect through the physical capital.

3.2. Research Objectives

(1) To assess the relevance of institutions on economic growth in SSA

(2) To assess the effect of combined institutional policies on growth

(3) To explore the effects of institutions on growth for LICs, Lower-middle income countries, Upper-middle and High-income countries in SSA.

3.3. Data and Methodology

This section gives a vivid account of the data applied in this study, sources of data and the Panel methodology applied. It also explains the institutions-augmented Solow model as the baseline model used in the study. In the nutshell, the data and methodology section describe the variable characteristics, model, and the methodology implemented. This section also describes expected signs of variables in the study.

3.3.1. Data and Variable Description

Due to the lack of sufficient country-specific data, the study only considered 36 Sub-Saharan African countries[3] from 1996 to 2015. To fulfil the objectives of the study, the variables used were categorised into Economic Growth, Political Institution, Legal Institutions, Economic Institutions and some traditional Solow variables that have been used by (Combey, 2017: Kuncic, 2013: Acemoglu and Robinson, 2008).

The Political Institutions data comprises of Voice and Accountability, Political stability and the absence of violence, Government Effectiveness, Regulatory Quality, and Control of

[3] Countries included in the study are Ghana, Nigeria, Senegal, Togo, Burkina Faso, Cote d'Ivoire, Guinea, Niger, Gambia, Benin, Mali, Sierra Leone, Mauritania, Cape Verde, Burundi, Botswana Swaziland, South Africa, Namibia, Mozambique, Zambia, Zimbabwe, Malawi, Angola, Tanzania, Kenya, Uganda, Rwanda, Ethiopia, Mauritius, Seychelles, Cameroon, Central African Republic, Congo Dem, Congo Rep, and Gabon.

Corruption. These variables have been well documented as part of the Worldwide Governance Indicators[4] by the World Bank Group.

Voice and Accountability (va) is a democracy index that encapsulates the perception of the extent to which citizens are able to participate in choosing governments, have freedom of expression and association, and the existence of an independent media (Kaufmann, *et al.,* 2010). This is a form of percentile ranking where data is compiled from household and firm surveys, commercial business providers, NGOs and public sector providers.

Political stability (ps) and the absence of violence considers the perception of the likelihood of political stability and /or politically motivated violence and terrorism in a country (Kaufmann, *et al*, 2010). It also takes the form of percentile ranking. This variable measures the cost of terrorism, social unrest, ethnic tensions, etc. that borders on the stability and security of a nation. Using the mean percentile ranking from 1996-2015, the study categorised countries into weak political stability (0-25), moderate political stability (26-50), political stability (51-75), and strong political stability (76-100) as illustrated in Table 2.

Government effectiveness (ge) measures the quality of service rendered by the public, civil servants, quality of bureaucracy, red tapes, and the degree of its independence from political pressure. It also considers the quality of policy formulation, implementation, and how credible government is committed to such policies (Kaufmann, *et al.*, 2010).

The next Political institution variable considered is the Regulatory quality (rq). Like all other Worldwide Governance Indicators, Regulatory quality measures the perception of the ability of government to formulate and implement good policies aimed that promoting private sector development (Kaufmann, *et al.*, 2010)

Corruption control (cor) is an important index under the Political institution category in this study. This variable measures the extent to which public power is applied for private and personal gains. It also considers corruption among civil servants and takes into account public trust in politicians (Kaufmann, *et al.*, 2010)

[4] WGI has data spanning from 1996-2015

As Aldashev (2009) summarizes it, the Legal institutions characterized by its legal system should affect the economic behaviour of individuals. That is, it should influence the accumulation of physical and human capital, and promote peace and security for business transactions. Kaufmann *et al.,* (2010) explain the Rule of law (rl) variable as the perception of the extent to which economic agents have confidence in and abide by societal rules. It also considers the quality of contract enforcement, property rights, police and the courts, as well as the likelihood of crime and violence. Rule of law is applied as a proxy for legal institutions (Kuncic, 2013)

As suggested by Flachaire, *et al.*,(2014), economic institutions was measured in this study by the index of Economic Freedom of the World from the Fraser Institute. The Economic Freedom[5] (ef) variable measures the extent to which property rights are protected in a country. It also considers the extent of freedom to which individuals can engage in voluntary transactions. This index takes into account government size, trade freedom, investment freedom, business freedom and Judicial effectiveness.

Gross Domestic Product (GDP) per capita as suggested by various researchers on this topic was used as a proxy for economic growth (Kilishi, *et al.* 2013: Combey, 2017: Flachaire, *et al.*, 2014). GDP per capita (based PPP) is GDP converted to international dollars using the purchasing power parity rates and is divided by the total number of population (The World Bank Group, 2017)

Following recent works done on Africa, the traditional Solow variables commonly used in literature are Physical capital, Human capital and population growth (n) (Kilishi, *et al*, 2013: Combey, 2017). The study applied gross capital formation as a proxy for physical capital(k) and enrollment rate for primary education as a proxy for human capital(h). Just like the other variables, annual population growth rate data was sourced from the World Bank datasets. Due to the open nature of most Sub-Saharan African economies, the study employed imports and remittances as other variables in the model. There is overwhelming evidence that supports the fact that these variables are determinants of growth in SSA(Kamara, 2013: Seetanah and Khadaroo, 2007; Abdullahi, *et al.* 2013; Lartey, 2013). As a result, Personal remittances received as a percentage of GDP was added to the model as other independent variables.

[5] The Economic Freedom variable before year 2000 was collected every semi-decade and afterwards, was collected annually. The cubic spline methodology was applied to extract annual data for the period of 1996-2000.

3.3.2. Model and Methodology

Based on the Institutions- augmented Solow model developed by Tebaldi and Mohan, (2008), a revised form of the equation model as applied by (Kilishi, *et al.*, 2013;Combey, 2017) is given by:

$$\ln\Delta y_{it} = \beta_o + \beta_1 \ln y_{it-1} + \beta_2 \ln \text{Pols Inst}_{it} + \beta_3 \ln \text{Leg Inst}_{it} + \beta_4 \text{InEco Inst}_{it} + \beta_5 \ln K_{it} + \beta_6 \ln H_{it} + \beta_7 \text{In}(n+g+\delta) + \beta_8 \text{In Imp}_{it} + \beta_9 \text{Inrem} + \varepsilon_{it} \quad (1)$$

Where y_{it} is GDP per capita, y_{it-1} is the lagged GDP per capita, Pols Inst is a vector of Political Institution instruments :political stability (ps), regulatory quality (rq), voice and accountability (va), government effectiveness (ge); Leg Inst represents legal institution and the variable used is the rule of law (rl); Eco Inst represents economic institution and the proxy used is economic freedom (ef), (k) is a variable for physical capital and h is human capital, (n) is the population growth, (g) is technological growth, (δ) is depreciation rate, (Imp) is imports, (rem) is personal remittances, and (ε_{it}) is the error term. All variables applied in this study are in the natural log form.

The usual practice in economic literature is that, the rate of depreciation and technological growth are assumed to be constant across countries and add up to be 0.05. As a result, $n+g+\delta$ is the summation of population growth, technological growth and depreciation rate (Mankiw, *et.*,1992; Hoefller, 2012 ;Kilishi, *et al.*, 2013).

Estimating equation(1) using dynamic panel approach could have many econometrically challenging issues. The first issue could be the problem of autocorrelation due to the presence of the lagged term of the dependent variable. Applying Ordinary Least Squares (OLS) will give biased and inconsistent estimates. As a result, the General Method of Moments (GMM) approach applies the first-difference lagged dependent variable and its also instrumented with its past level in order to overcome autocorrelation. Another issue that could rise up is the problem of endogeneity[6]. A researcher may apply the two-stage least squares but there could be the presence of weak instruments. Using the Arellano and Bond (1991) allows one to use exogenous instrument variables and lagged values of the endogenous variables as instrument variables making the endogenous variables pre-determined and uncorrelated with the error term. As the study deals with several

[6] Endogeneity is a situation where regressor(s) have a correlation with the error term.

countries, there may be time-invariant country characteristics (fixed effects) that may be correlated with the explanatory variable. The error term in eqn(1) contains both the unobserved country-specific effect and the observed country-specific effects as mathematically illustrated in equation (2);

$$\varepsilon_{it} = v_i + e_{it} \quad (2)$$

where v is the unobserved country-specific effects and e is observation-specific effects. To overcome this in a dynamic panel system, the Differenced GMM uses the first difference in transforming equation (1) to remove the time-invariant fixed country effect. Also, due to the very nature of dataset (short time dimension T=19 and large country dimension N=36), it is most appropriate to apply the Panel GMM approach.

Considering the advantages the GMM approach has, the study employs the Difference GMM as it has the ability to produce consistent and unbiased estimates in the presence of measurement errors and endogenous variables (Kilishi *et al.,* 2013). The Sargan test for over-identifying restrictions in GMM will help to ascertain the validity that instrument variables as a group are exogenous. The rule of thumb here is, the higher the p-value of the Sargan statistic, the better the model. Also, the Arellano- Bond autocorrelation test in both the first difference and higher orders will be estimated. The test of autocorrelation for second order AR(2) is usually considered more important than AR(1) since the presence of lagged dependent variable makes it easy to reject the null hypothesis of no autocorrelation in the first order. Based on Windmeijer (2005), we performed the two-step difference GMM estimation as its superior over the one-step estimation in terms of reducing the downward bias in the computed standard errors. This makes the standard errors robust to heteroskedasticity and arbitrary patterns of autocorrelations within individuals.

A similar form of equation (1) will also be run for low-income countries[7], lower-middle income countries[8], upper middle-income countries[9] and high-income countries[10] as categorized by World Bank in SSA. These are mathematically expressed as:

[7] Low income countries are country with GDP per Capita at $1005 or less
[8] Lower-middle income countries have GDP per Capita above $1005 but not more than $3955
[9] Upper –middle income countries have GDP per Capita from $3956- $12235
[10] High income countries are countries with GDP per Capita above $12235

Low-income countries equation

$$\ln\Delta y_{it} = \beta_o + \beta_1 \ln y_{it-1} + \beta_2 \ln Pols\ Inst_{it} + \beta_3 \ln Leg\ Inst_{it} + \beta_4\ InEco\ Inst_{it} + \beta_{5\ In}K_{it} + \beta_6 \ln H_{it} + \beta_7\ In(n+g+\delta) + \beta_8\ In\ Imp_{it} + \beta_9\ Inrem + \varepsilon_{it} \quad (3)$$

Lower-middle income countries equation

$$\ln\Delta y_{it} = \beta_o + \beta_1 \ln y_{it-1} + \beta_2 \ln Pols\ Inst_{it} + \beta_3 \ln Leg\ Inst_{it} + \beta_4\ InEco\ Inst_{it} + \beta_{5\ In}K_{it} + \beta_6 \ln H_{it} + \beta_7\ In(n+g+\delta) + \beta_8\ In\ Imp_{it} + \beta_9\ Inrem + \varepsilon_{it} \quad (4)$$

Upper middle income countries equation

$$\ln\Delta y_{it} = \beta_o + \beta_1 \ln y_{it-1} + \beta_2 \ln Pols\ Inst_{it} + \beta_3 \ln Leg\ Inst_{it} + \beta_4\ InEco\ Inst_{it} + \beta_{5\ In}K_{it} + \beta_6 \ln H_{it} + \beta_7 In(n+g+\delta) + \beta_8\ In\ Imp_{it} + \beta_9\ Inrem + \varepsilon_{it} \quad (5)$$

High income country equation

$$\ln\Delta y_{it} = \beta_o + \beta_1 \ln y_{it-1} + \beta_2 \ln Pols\ Inst_{it} + \beta_3 \ln Leg\ Inst_{it} + \beta_4\ InEco\ Inst_{it} + \beta_{5\ In}K_{it} + \beta_6 \ln H_{it} + \beta_7\ In(n+g+\delta) + \beta_8\ In\ Imp_{it} + \beta_9\ Inrem + \varepsilon_{it} \quad (6)$$

However, since we have only one high-income country in SSA (Seychelles), we decided to add it to the uppermiddle-income countries during the regression because the methodology employed is strictly panel related. STATA 14 software was used to generate the results from the GMM processes.

Table 3.1: *World Bank categorization of countries according to income level*

Categorization	**Countries considered**	**Range of Income per capita**
Low-income countries	Benin, Burkina-Faso, Burundi, Central African Republic, Congo Dem, Ethiopia, Gambia, Guinea, Malawi, Mali, Mozambique, Niger, Rwanda, Senegal, Sierra Leone, Tanzania, Togo, Uganda, Zimbabwe	≤ $1005
Lower- middle income countries	Angola, Cape Verde, Cameroon, Congo Rep, Cote D'ivorie, Ghana,	$1006-$3955

	Kenya, Mauritania, Nigeria, Swaziland, Zambia	
Upper- middle income countries	Gabon, Mauritius, Namibia, South Africa, Botswana	$3956-12235
High income country	Seychelles	≥ $12236

Source: World Bank Country and Lending Group

Table 3.2: *Average Annual Categorization of Political Stability based on the percentile ranking from 1996-2015*

Categorization	**Countries considered**	**Percentile ranking range**
Weak Political stability	Angola, Burundi, Cameroon, Central African Republic, Congo Rep, Cote D'Ivorie, Congo Dem, Ethiopia, Guinea, Kenya, Niger, Nigeria, Rwanda, Uganda, Zimbabwe	0 - 25th percentile ranking
Moderate Political stability	Burkina Faso, Gabon, Gambia, Ghana, Malawi, Mozambique, Mali, Mauritania, South Africa, Swaziland, Senegal, Sierra Leone, Tanzania, Togo, Zambia,	26th - 50th percentile ranking
Political stability	Botswana, Benin, Cape Verde, Mauritius, Namibia,	51st - 75th percentile ranking
Strong Political stability	Seychelles,	76st - 100th percentile ranking

Source: Authours' own computation based on the World Bank Governance Indicator

Based on related studies in Africa on the said topic, the study expects β_1 and β_7 to be negative. A negative β_1 means that the poorer countries in SSA are converging to the richer countries. Also, since $g+\delta$ are assumed to be constant, an increase in population growth is expected to negatively affect economic growth, hence β_7 is expected to negative (Kilishi, *et al.,* 2013; Combey, 2017). The augmented Solow variables (Physical capital and Human capital) as suggested by Robert Solow is expected to have a positive relationship with growth. As argued by (Acemoglu, *et al.,* 2001; Chong and Calderón, 2000; Rodrik, *et al.,* 2004) we expect all the institution variables to be positive.

3.4. Presentation and Discussion of Results

The unconditional correlation matrix presented in Table 3.2 measures the dependence and strength of a linear relationship between the variables used in the model. Since each variable correlate perfectly with itself, the unconditional correlation matrix shows a perfect correlation coefficient of 1 in the linear relationship. Political stability, voice and accountability, government effectiveness, regulation quality and corruption control have a strong positive relationship with each other which is expected because they all lie in the same category as Political institutions. Rule of law which must be respected and upheld for every institution to thrive is strongly related to all the political institution variables in a positive way. Also, rule of law is very strongly related positively to corruption control and regulatory quality with the correlation coefficient above 0.8. This means that there is a high degree of relationship or dependency existing between legal institutions and corruption control in SSA. Economic institutions, indexed as economic freedom is moderately correlated with all the variables categorized under political institution but has a high correlation association with rule of law and regulatory quality positively. This gives us the general view that places where there is an effective legal institution, one should expect economic institutions thriving. GDP per capita, which is the dependent variable shows a positive moderate relationship with political institution and economic institution variables but a weak negative degree of relationship with personal remittances and physical capital in SSA over the period of 1996-2015. There exists a weak negative relationship between physical capital and all the political institutions and economic institutions in the unconditional correlation matrix. Human capital which is also an important component of the original Solow model, however, exhibited a positive but extremely weak relationship between its self and the political and economic institutions. The strongest linear relationship exhibited in the unconditional correlation matrix was between regulatory quality and rule of law (0.85) as shown in Table 3.2 below. However, the weakest linear relationship in the result of the unconditional correlation matrix occurred between human capital and personal remittances (0.0005). The relationship between them was also negative in nature.

Table 3.3: *Unconditional Correlative Matrix of variables*

	Inva	Lnps	lnge	Inrl	Inrq	Incor	Inngd	Inef	Ingdp	Infdi	Inrem	Inimp	Ink	Inh
Inva	1													
lnps	0.649	1												
lnge	0.679	0.636	1											
Inrl	0.735	0.752	0.8415	1										
Inrq	0.717	0.605	0.799	0.851	1									
Incor	0.621	0.664	0.767	0.826	0.759	1								
Inngd	-0.297	-0.288	-0.319	-0.282	-0.296	-0.377	1							
Inef	0.468	0.433	0.571	0.609	0.658	0.529	-0.305	1						
Ingdp	0.436	0.450	0.513	0.430	0.429	0.426	-0.609	0.343	1					
Inrem	0.035	0.069	0.053	0.099	0.136	0.101	-0.137	0.215	-0.154	0.026	1			
Inimp	0.203	0.412	0.187	0.227	0.073	0.276	-0.353	0.056	0.420	0.409	-0.013	1		
InK	-0.129	-0.133	-0.182	-0.191	-0.188	-0.169	0.185	-0.053	-0.098	0.136	0.012	-0.087	1	
Inh	0.163	0.255	0.259	0.248	0.178	0.149	-0.159	0.289	0.329	0.193	-0.0005	0.254	0.046	1

Source: Authors' own computation

Table 3.4 contains the Difference GMM results for Sub-Saharan African countries. It shows the effects of institutions on economic growth. It is important to note that the study applied both the system GMM and Difference GMM. However, the results from the Sargan and Hansen test in the system GMM rejected the hypothesis that GMM instruments are valid and exogenous, whiles the Difference GMM has both the Sargan and Hansen test accepting the null hypothesis. In column 1 of Table 3.4, lagged GDP per capita is significant at 5% and has a positive relationship with economic growth in SSA. This means that poorer countries are not converging to richer countries in the sub-region. This result confirms the findings of Aboagye (2013) who concluded that there is income divergence in SSA.

Voice and accountability, government effectiveness, regulatory quality and control of corruption, all under Political institutions had a positive relationship with economic growth but were all insignificant to explain growth patterns in SSA. Political stability was also negative and not significant to determine growth in SSA. Economic freedom and rule of law were also positively related as expected but were also not significant in explaining growth variations.

Physical capital from Table 3.4 result was significant at 5% in explaining the variations of economic growth and had a positive relationship with growth confirming the researchers' earlier expectations. This confirms the relevance of capital formation in economic growth as explained in Solow's growth theory. The findings also fall in line with Ndambiri *et al.,* (2012) study that found physical capital to be a positive and significant determinant of growth in SSA.

However, human capital though had a positive relationship with growth as expected but was not significant in explaining growth trends in SSA. Import was also found to be significant and had a positive correlation with economic growth. Import may be having a positive relationship through the recent increase in Foreign Direct Investment (FDI) inflows in SSA. According to World Bank (2017), from 2000 -2015, FDI flows into SSA has grown more than seven-fold from $6.3 billion to $44 billion respectively. Imports have increased through the major FDI projects in construction, energy (including oil and gas), environmental technology, agriculture and transport equipment (World Bank, 2014). As SSA countries are becoming more industrialized, equipment like tractors, power badges, and other heavy mining machines imported into the various countries increase productivity in various sectors leading to economic growth. Another reason for the positive significance of imports in SSA is the tremendous increase in the importation of intermediate goods and services. Intermediate goods are products used as inputs to produce final goods. From the period of 1996-2015, there has been a percentage increase of about 300% in the importation of intermediate goods in SSA (WITS, 2017). Economic institution and Legal institution though has a positive correlation with growth were not significant to explain growth variations in SSA.

Column 2 of Table 3.4 shows the results of interactions between institutional instruments in SSA. Results from the interactive term in column 2 indicate that pursuing combined policies of political stability and economic institution was significant in explaining economic growth in SSA. The relationship, however, was negative. Physical capital and imports were also strong determinants of growth and had a positive relationship when there is an interaction between

institutions and economic freedom. The lagged value of GDP per capita was also significant at 5% and positively related with growth indicating a divergence in income growth among poor and richer countries in SSA.

As shown in column 3 of Table 3.4, an interaction between institutions and rule of law was not significant in contributing to economic growth in SSA.

Table 3.5 shows the results of institutional effects on growth among Lower Income countries in SSA. In the Low-income countries (LIC) GMM analysis as presented in column 1, the coefficient of lagged GDP per capita was significant and positive. This means that poor countries in the low-income bracket are not converging to the richer countries in the same bracket in SSA. Economic institution was significant at 5% and had a positive relationship with growth among Lower income countries in SSA. This means that a percentage increase in economic freedom increases economic growth by 75% among LICs in SSA. Also, political institution variables and legal institution in colunm1 of Table 3.5 were not significant in explaining growth variations among lower income countries.

In column 2 and column 3 in Table 3.5 of the analysis involving Lower Income countries, pursuing combined policies between institutions are not relevant to explain growth variations. Imports, however, was positive and significant in determining growth when there is an interaction between economic institution and political institution. This means that in an economy where there exist combined policies between economic freedom and other political institution, a percentage increase in imports triggers growth to about 11% among LICs.

Table 3.6 shows the effect of institutions on economic growth among Lower-middle income SSA countries. Considering the Lower-middle income countries (LMICs), Political Stability was very relevant and necessary in explaining growth patterns in SSA as seen in column 1. With a significance level of 1%, a percentage increase in the perception of political stability will increase income per capita by 35.5%. The quality of regulations was also significant to explain growth patterns among Lower middle-income countries. A percentage increase in regulatory quality triggers a 58% increase in growth. The Legal institution, represented by rule of law was found to be very relevant in explaining growth trends among Lower middle-income countries. It increases growth about 46% when there is a percentage increase in the perception of the extent to which economic agents have confidence in and abide by societal rules. Though our a-prior expectation

was a positive relationship between corruption control and growth, the results showed a negative but significant relationship among LMICs. Most of the LMICs in SSA are struggling with high level corruption and fighting corruption at that level is expensive, thus having a negative impact of GDP per capita (Okumale, 2017). Among Lower-Middle income countries, population growth is necessary to fostor economic growth in the region as the result shows a positive and significant relationship with income growth. This contradicts the findings of (Kilishi, *et al.,* 2013) who recommended that population growth control is necessary for growth among SSA countries.

In column 2 of Table 3.6 which shows an interaction between economic freedom and other institutions, the coefficient of the lagged effect of GDP per capita was showed divergence in income as the results show a positive and significant relationship with the dependent variable. The results also show that interacting political institution and economic institutions does not significantly contribute to growth among LMICs in SSA. Also engaging in twin policies aimed at improving rule of law and economic freedom does not significantly contribute to growth among LMICs in SSA.

Improving the legal system through the advancement of rule of law and combining it with policies that promote political stability as shown in column 3 of Table 3.6 is very significant to promote economic growth among LMICs. Also, engaging in a combined policy that improves regulatory quality and improves rule of law is significant to increase economic growth among LMICs as shown in column 3 of Table 3.6. Also, an interaction between economic and legal institutions has a negative significant relationship with growth.

The effect between institutions and economic growth among Upper middle and high-income countries is examined in Table 3.7. Column 1 indicates imports as the only significant variable in explaining growth trends among upper-middle and high-income countries in SSA. The interacting effect between voice and accountability, and economic freedom significantly contributes to growth with a negative relationship existing between them. Increase in population growth is also essential for economic growth for countries that lie within these bracket range. The result shows a positive significant relationship between population and economic growth. Remittances also for countries in this income bracket has a significant positive relationship with growth.

Column 3 of Table 3.7 shows the results of the interaction between Political institution and legal institution. An interaction between Political stability and legal institution (rule of law) was

positive and a significant contributor to growth among Upper-Middle and Higher income countries. Improving corruption control through rule of law also showed a positive significant relationship with growth as shown in column 3 when there is an interaction between corruption control and rule of law. Combined policies aimed at improving government effectiveness and rule of law had a significant negative relationship with economic growth among Upper –Middle and High-income countries in SSA.

3.5. Conclusion and Policy Recommendations

The study investigated the effects institutions have on economic growth in Sub-Saharan Africa. To achieve this, research objectives were formulated to include (1) assessing the relevance of institutions on economic growth in SSA (2) assessing the effect of combined institutional policies (3) exploring the effects of institutions on growth for LICs, Lower middle-income countries, Upper-middle and High-income countries in SSA. An unbalanced panel dataset for 36 SSA countries from 1996-2015 was applied using the Difference GMM. Important findings from the study includes; (1) Institutions matter in explaining economic growth in SSA. (2) Considering SSA, institutions are relevant to growth only when there are interactions in policies among them. (3) There is income divergence between poorer and richer countries in SSA. (4) Physical capital is an important determinant of growth in SSA. (5) Increasing imports that supports FDI Project inflows and intermediate goods and services to be used as inputs for production increases productivity in SSA. (6) Pursuing combined policies that seek to increase political stability and improve economic institutions significantly contributes to growth in SSA. (7) There is no income convergence among LICs in SSA. (8) Economic institutions play a significant role in increasing GDP among LIC in SSA. (9) In the case of LICs, political stability is necessary for increase in productivity. (10) Improving regulatory quality among LMICs in SSA fosters growth in the region. (11) Rule of law is necessary for growth in LMICs as it gives an enabling environment for output to increase. (12) Corruption control is significant in explaining growth variations among LMICs in SSA. (13) Among LMICs, increasing population triggers economic growth. (14) Combined policies aimed at simultaneously improving rule of law and political stability among LMICs promotes economic growth. (15) Policies aimed at improving regulatory quality and at the same time enhancing legal institution promotes growth among LMICs in SSA. (16) Combining policies

that seek to improve rule of law and political stability are significant to foster growth among LMICs in SSA. (17) Policies that simultaneously improve regulatory quality and rule of law is necessary to sustain growth among LMICs in SSA. (18) Interactions between economic freedom and the rule of law has a negative significant effect on growth among LMICs in SSA. (19) Import is a significant contributor to growth among Upper Middle and High-Income countries. (20) The interaction between voice and accountability, and economic freedom is significant to explain growth patterns among Upper Middle and High-Income countries. (21) Population growth is also necessary for economic growth among Upper Middle and High-Income countries in SSA. (22) Remittances are relevant contributors to growth among Upper Middle and High-Income countries. (23) An interaction between political stability and rule of law fosters growth among Upper Middle and High-Income countries in SSA. (24) Enhancing corruption control whiles improving rule of law has a positive and significant relationship with growth among Upper Middle and High-Income countries in SSA. (25) Government effectiveness and rule of law interactions significantly contribute to growth among Upper Middle and High-Income countries in SSA. (26) The relevance of political institutions depends on the income bracket level of a country. However, as the income bracket increases, political institutions tend to have a stronger impact on growth among LMICs whiles for Upper Middle and High-income countries, political institution relevance was felt in the economy when there is an interaction among Political institution variables, and an interaction with economic institution and legal institutions.

Based on the findings from the study, some policy recommendations have been enumerated in order to help SSA countries enjoy a sustained increase in growth and improve the living standards of its citizens.

- As a result of the findings in income divergence from this study, laggard countries require special remedial policies targeted at industrialization to provoke high speed growth
- Political, legal and economic institutional capacity must be strengthened in SSA since it is relevant for growth. To achieve this, policies aimed at enhancing good governance, improving public administrative and regulatory quality, and ensuring business freedom strengthens institutional capacity building.
- Since capital formation strongly influenced growth in SSA, tax policies targeted at increasing after-tax return on investments are encouraged in the region.

- Governments must remove import barriers and reduce tax on intermediate goods that serve as inputs for its local firms.
- SSA countries are encouraged to come out with policies that jointly promote political stability and encourage economic freedom. An example will be the reduction of domestic taxes to allow local firms to thrive whiles enacting laws that encourage freedom of speech and allows citizen to express their frustrations to government
- The insignificance of human capital could be a reason to the divergence in living standards among SSA countries. Therefore, policies that seek to improve human capital development like investing in education, training, and the use of technology are strongly recommended.
- Policies that raise the rates of investments and savings in GDP are crucial for growth. Governments should engage in policies that promotes macroeconomic stability thereby reducing uncertainties and paving way for increase in investments and savings. Macroeconomic stability also boosts investor confidence both domestically and globally thereby increasing domestic investments and inflows of foreign capital.
- Policymakers in LICs must discourage anti-competitive market distortionary regulations as it hurts economic freedom and impedes growth. That is, government actions that seek to empower certain private interest to gain artificial competitive advantage over its competitors must be replaced with policies that allow free market existence (Abbott and Singham, 2017). Free markets ensure competition that improves business and trade freedoms and increases productivity.
- Policies aimed at improving regulatory quality and reducing burden on the private sector are encouraged among LMICs as it promotes growth.
- Strengthen legal institutions among LMICS as they provide the basis for sustainable development and promote growth.
- Measures must be put in place to increase corruption control and make it unattractive among LMICs in SSA.
- As population increase among LMICs, Upper middle and high-income countries, increases growth, governments should implement skills development and training policies to improve human capital and enhance growth through the labor market.
- Twin policies aimed at improving institutions simultaneously are also encouraged as it has a positive effect on growth among LMICs.

- Upper middle and High-income countries must strengthen their financial systems to attract remittances inflows and also, provide remitting beneficiaries with investment opportunities to enhance economic growth.

CHAPTER FOUR

4. SUMMARY, CONCLUSION AND LIMITATIONS OF THE STUDY

This chapter provides a summary of all the 3 articles, its suggested recommendation and ends with the limitations faced during the thesis duration. The chapter attempts to match the individual research objects from each article and its findings from the study.

1.1. Summary and conclusion of the thesis

The study is a compilation of, three related articles specifically focused on Africa's economy. The first article '' Africa's economy; trends, challenges and Prospects'' sought to achieve the following objectives-; To identify the leading economies in Africa and the dynamics of their economies that are boosting growth, to identify the challenges of Africa's development, and to identify prospects and opportunities in Africa. To achieve this, a critical in-depth analysis was made based on report reviews and trend analysis. As the world average GDP growth rate from 1962-2014 stood around 3.8, Africa's growth rate performance over the same period stood at 3.9. Nigeria, South Africa, and Egypt in terms of the size of GDP as at 2014 were identified as the largest economies in Africa. With a population of about 174 million, the service sector is the leading sector that contributes to GDP (AfDB, 2013: Barungi,*et al.*, 2015).

South Africa accounted for 12.8% of Africa's Gross Domestic Product (PPP) in 2014 and is currently considered as an upper middle-income country (World Economic Outlook, 2015). The service sector is the largest sector contributor of growth while other sectors like the industrial sector and the agricultural sector follow respectively.

With a GDP of $286 million and a population of 89.5 million as at 2014, Egypt is considered as the third largest African economy. (World Bank, 2014: World Bank, 2015). Egypt was also not different from Nigeria and South Africa as the service sector was the leading contributor to growth.

Though Africa's growth over the recent years has been promising, it is still struggling with many challenges that are impeding growth. Among the many challenges, corruption, poor infrastructure, capital flight, tax evasion and tax avoidance were considered in this study as the major impediments to growth and development in Africa. The impacts of these challenges, as well as measures to curb them, were raised and discussed extensively in the study.

The extractive sector, energy sector and agricultural sector among many others were considered to have great prospects in Africa. The abundance of raw materials and the continent's youthful age dynamics give it a lot of potentials and opportunities for foreign investors and public-private partnerships.

The title of the second article was ''A panel analysis of the impact of Foreign Direct Investments, imports and foreign remittances on the African economy; an ARDL approach''. Using a panel data of 41 African countries from 2000-2014, the study sought to fulfil the following objectives. Applying the second-generation unit root test due to the presence of cross-sectional dependency, the best model appropriate for the study was ARDL (2,2,2,2). The goals or objectives of the study were as follows: To examine the long run and short run effects of FDI, imports and remittances on GDP growth in Africa; to examine the existence exist a long run co-integration among economic growth, FDI, remittances, and imports; and to examine the causal relationships that exist between economic growth, FDI, remittances, and imports. The study adopted the Tahir *et al*.,(2015) model. From this study, the existence of a long run association was established between economic growth, FDI, imports and remittances. In the long run, FDI had a positive relationship with growth in Africa. Therefore as part of the policy recommendations, African governments are encouraged to implement policies that will attract FDI inflows to trigger growth. Imports, just like FDI also had a long run positive impact on growth. Remittances were also very significant in explaining growth variations in Africa in the long run but had a negative effect on growth. Touching on the short run dynamics, FDI, imports, and remittances were not significant in explaining growth. Botswana, from this study, had the fastest speed of adjustment to equilibrium whiles South Africa had the slowest speed of adjustment to equilibrium. Ghana, Madagascar, Seychelles and Sudan experienced a positive relationship between of imports and economic growth at all periods. Remittance was not significant at all lag among most countries.

Another interesting finding from this study was that Growth homogeneously causes FDI. There is also a unidirectional relationship flowing from imports to growth, and from FDI to Imports

Acemoglu and Robinson (2008) emphasised that the main factor of income differences among countries are the differences in economic institutions. To understand the role of institutions, the third article in this thesis used data of 36 SSA countries from the period of 1996-2015. The study considered all the various forms of institutions like the political, legal and economic

institutions and how they affected growth among LICs, LMICs, Upper Middle, High-income countries in SSA. The research objectives of the study include the following; (1) To assess the relevance of institutions on economic growth in SSA (2) To assess the effect of combined institutional policies on growth (3) To explore the effects of institutions on growth for LICs, Lower middle-income countries, Upper middle and High-income countries in SSA. In fulfilling the said objectives, the study applied the Difference GMM approach. Some of the findings included (1) Institutions are relevant in explaining growth variations in SSA; (2) Economic institutions and political stability were necessary to foster growth among LICs; (3) Legal institutions, regulatory quality and corruption control have significant impacts on growth among LMICs; (4) There is income divergence between poorer and richer countries in SSA. In addition to these, interactions between institutions in some cases are needed for economic growth across the different income brackets. In the case of Upper Middle and High-income countries, interactions between government effectiveness and rule of law are necessary for growth.

It is important to note that all the individual papers in this thesis had policy recommendation suggestions based on the findings from the study.

In the nutshell, this comprehensive study touch on several important factors that promote growth in Africa. Also, it addressed the major challenges faced by most African economies. It also emphasized the essence of institutions in SSA and gave prudent policy recommendations that can help address the issue of growth and development in Africa.

1.2. Limitations of the study

The problem of data is always an impediment when researching on Africa. Most of the data were incomplete. Also, the study could not cover all the 54 African states due to the inexistence of data for the period under study.

Further research can be taken to know the type of imports that promotes growth and which sectors of Africa's economy are the import-led growth nexus applicable in driving growth.

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APPENDIX

(i): *Studies on Growth in SSA*

Source	Findings
Azam, J.P, A. Fosu and N. Ngung'u (2002), 'Explaining Slow Growth in Africa', *African Development Review*, 14, pp. 177-220.	Africa's slow growth can be explained by five factors: Macroeconomic policy environment, Macroeconomic uncertainty (risk of policy reversal except in Uganda, Ghana, Botswana and Mauritius), Human capital (human capital affects growth through investment, bad education systems in some countries). Regional spillover effects (CFA franc zone was favourable and credible initially, but inflexible to changes in exchange rates), External shocks, Institutional and Political instability. They argue that openness and export orientation are main policy variables affecting growth and that lack of social capital and deficient political institutions have cause bad policies.
Collier, P. (2002), 'Primary Commodity Dependence and Africa's Future', *draft World Bank paper*	Argues that Africa has not experienced diversification of exports and remains dependent upon primary commodities. The current comparative advantage in primary commodities is a result of a poor investment climate, not endowments or location. Export Processing Zones might help lower operating costs.
Fafchamps, M. F. Teal and J. Toye (2001), 'Towards a Growth Strategy for Africa', CSAE study.	In the long run, a growth strategy is the most cost-effective way of dealing with poverty but measures are needed to protect vulnerable groups against disruption of rapid growth. A dramatic rise of exports out of Africa is essential for sustained growth, which may come from manufacturing. Successful Macroeconomic policy can be regarded as a precondition for growth.
Collier and Gunning (1999), 'Explaining African Economic Performance', *Journal of Economic Literature*, available from http://www.dse.de/ef/papers/coll-gun.htm	Many macro growth regressions find a significant Africa dummy, while some researchers transfer the puzzle elsewhere, e.g. a tropics dummy.

	Explanation for slow growth (not adequately captured in growth regressions): lack of openness, high-risk environment, low level of social capital, poor infrastructure (and lack of finance). Governments were captured by narrow elite, leading to physical and human capital flight. Poor micro policies now more important than geography in explaining low growth
Sachs, J.D and A.M. Warner (1997), 'Sources of Slow Growth in African Economies', *Journal of African Economies*, 7, pp. 335-376	Slow per capita GDP growth in sub-Saharan Africa (1965–90) can be explained by poor economic policies, e.g. lack of openness, lack of access and tropical climate are important; once these are included, there is no need for an Africa dummy; life expectancy; landlockedness; institutional quality; natural resources.
Easterly, W. and R. Levine (1997), 'Africa's Growth Tragedy: Policies and Ethnic Divisions', *Quarterly Journal of Economics*, CXII (4), 1203-1250.(World Bank WP1503)	Poor growth over 1960–89 associated with low schooling; political instability; underdeveloped financial systems; distorted foreign exchange markets; high government deficits; low infrastructure; ethnic fractionalization; and spillovers from neighbours that magnify the above: i.e. an Africa dummy.
McPherson, M.F. and T. Rakovski (2001), *Understanding the Growth Process in Sub-Saharan Africa: Some Empirical Estimates*, African Economic Policy Discussion Paper, Harvard University	Criticize use of single equations with a dozen explanatory variables; use a multi-equation system instead. Impact of foreign aid on GDP per capita grow is positive but indirect through investment
Hoeffler, A. (2000), *The augmented Solow Model and the African Growth Debate*, CID working paper 36	Africa's low growth performance can be accounted in an augmented Solow model, provided that allowance is made for unobserved country-specific effects and the endogeneity of investment in estimating the parameters of the model. GDP per capita growth (1960–94) explained by e.g. initial income, years of schooling, the dummy for Africa is insignificant.
Block, S.A. (2001), 'Does Africa Grow Differently?', *Journal of Development Economics*, 65, pp. 443-467	Argues that Africa does not grow differently than elsewhere, as the Africa dummy is insignificant when account is made of interactions between SSA dummy

	and certain institutional and policy factors. Growth in GDP per capita explained by, initial per capita income, initial life expectancy, landlockedness, political risk, openness (Sachs and Warner), budget deficit and interactions SSA and above.
O'Connell, S.A and B.J. Ndulu (2000), 'Africa's growth experience. A focus on sources of growth', paper for AERC/Harvard growth project.	Growth in real per capita GDP in SSA (1960–97) samples depends on initial income and life expectancy; demographics; external shocks (dry years cause slow growth); landlockedness (negative and significant); investment/GDP ratio (positive and significant).
Calamitsis, E.A., A. Basu and D. Ghura (1999), *Adjustment and Growth in Sub-Saharan Africa*, IMF Working Paper WP/99/51	Real per capita GDP (1981–97) positively related to policies that influence: private investment/GDP, human capital development, lower budget deficit/GDP; safeguard external competitiveness; stimulate export volumes.
Nkurunziza, J.D. and R.H. Bates (2003), *Political Institutions and Economic Growth*, CID working paper 98	Using an augmented Solow model, they find that; political stability and regime type affect economic growth (1960–90); political violence is not important; Africa dummy should not be included.

Source: Willem te Velde and Bezemer (2004)

(ii) **Table 3.4:** ***Difference GMM Results for SSA, dependent variable*** $\boldsymbol{lny_t}$

	1	**2**	**3**
lny_{t-1}	**0.47** **(0.18)**	**0.48**** **(0.004)**	**0.72***** **(0.16)**
Inva	**0.13** **(0.096)**		
Inps	**-0.09** **(0.068)**		
Inge	**0.045** **(0.039)**		
Inrq	**0.038** **(0.038)**		
Inrl	**0.0195** **(0.035)**		
Incor	**0.0038** **(0.014)**		
Lnef	**0.293** **(0.306)**		
Inngd	**-0.000**	**-0.005**	**.030**

	(0.9)	**(0.028)**	**.051**
Ink	**0.099** **(0.04)**	**0.0977** **(0.045)**	**.033** **.0436549**
Inimp	**0.162*** **(0.096)**	**0.17*** **(0.05)**	**.1226381** **.0805367**
Inrem	**-0.034** **(0.023)**	**-0.034** **(0.022)**	**-.0221409** **.0205271**
Inh	**0.198** **(0.21)**	**0.205** **(0.252)**	**.1192769** **.2515601**
Inva*ef		**0.08** **(0.05)**	
Inps*ef		**-0.05*** **(0.029)**	
Inge*ef		**0.03** **(0.02)**	
Inrq*ef		**0.01** **(0.022)**	
Inrl*ef		**0.002** **(0,009)**	
Incor*ef		**0.002** **(0.009)**	
Inva*rl			**0.007** **(0.024)**
Inps*rl			**-0.015** **(0.012)**
Inge*rl			**0.005** **(0.011)**
Inrq*rl			**0.003** **(0.028)**
Incor*rl			**-0.0002** **(0.006)**
Lnefrl			**0.029** **(0.059)**
Sargan **Hansen**	**14.74** **11.23**	**15.04** **10.24**	**17.53** **16.34**
AB	**0.75**	**0.73**	**-0.33**
No. Obs	**317**	**317**	**317**

Source: Authors' own computation
***Significance at 1%,** significant at 5%, *significant at 10%,
AB is the Arellano-Bond AR(2) test for autocorrelation
() represents corrected standard error

(iii) Table 3.5: *Difference GMM Results for LIC, dependent variable* lny_t

	1	**2**	**3**
lny_{t-1}	**0.65*** **(0.34)**	**0.799**** **(0.37)**	**0.93***** **(0.31)**
Inva	**0.024** **(0.132)**		
Inps	**-0.122** **(0.114)**		
Inge	**-0.075**		

	(0.12)		
lnrq	**-0.109** **(0.097)**		
lnrl	**0.12** **(0.151)**		
lncor	**0.006** **(0.048)**		
Lnef	**0.75**** **(0.35)**		
lnngd	**1.20** **(1.32)**		**0.75** **(0.61)**
lnk	**0.124** **(0.225)**	**0.10** **(0.08)**	**0.121** **(0.14)**
lnimp	**0.03** **(0.119)**	**0.11**** **(0.52)**	**0.163** **(0.12)**
lnrem	**-0.025** **(0.05)**	**-0.012** **(0.03)**	**-0.016** **(0.019)**
lnh	**0.50** **(0.36)**	**0.032** **(0.412)**	**-0.076** **(0.33)**
lnva*ef		**0.016** **(0.105)**	
lnps*ef		**-0.007** **(0.06)**	
lnge*ef		**0.0127** **(0.043)**	
lnrq*ef		**0.007** **(0.05)**	
lnrl*ef		**-0.024** **(0.059)**	
lncor*ef		**0.003** **(0.026)**	
lnva*rl			**-0.03** **(0.0344)**
lnps*rl			**0.017** **(0.018)**
lnge*rl			**-0.019** **(0.018)**
lnrq*rl			**-0.009** **(0.036)**
lncor*rl			**0.009** **(0.009)**
lnef*rl			**0.058** **(0.054)**
Sargan **Hansen**	**7.61** **1.67**	**62.17** **4.11**	**13.78** **2.48**
AB	**0.29**	**-0.71**	**-0.02**
No. Obs	**149**	**149**	**149**

Source: Authors' own computation

***Significance at 1%,** significant at 5%, *significant at 10%

AB is the Arellano-Bond AR(2) test for autocorrelation

(iv) Table 3.6: *Difference GMM Results for Lower-Middle income countries, dependent variable* lny_t

	1	2	3
lny_{t-1}		.801317** .3223899	
Inva	.3017772 (0.1701155)		
Inps	.3553282*** .0994262		
Inge	.1933884 .1506707		
Inrq	.5837737** .2420278		
Inrl	.4647441** .1859642		
Incor	-.350895* .1880235		
Lnef			
Inngd	.6765892** .2525945		
Ink	-.0566043 .0535546	-.0911996 .0656555	-.0244882 .0441638
Inimp	-.3839242 .2369747		.0241807 .1226245
Inrem	.0976057 .058904	.0752581 .0586383	.0234362 .0359354
Inh			-.7566707 .502105
Inva*ef		.095285 .1532412	
Inps*ef		-.0192639 .0326127	
Inge*ef		.0625132 .0545288	
Inrq*ef		.0956547 .095734	
Inrl*ef		.0874933 .1150008	
Incor*ef		-.0435914 .0708816	
Inva*rl			.0103165 .0742077
Inps*rl			.1794896*** .0519204
Inge*rl			.0653798 .0475335
Inrq*rl			.1695132** .0666166
Incor*rl			.0074598 .0442533
lnef*rl			-.4211611*** .1031804
Sargan Hansen	23,36 0.00	24.64 0.00	26.20 0.00
AB	1.38	0.43	-0.05

No. Obs	**101**	**101**	**101**

Source: Authors' own computation
***Significance at 1%, ** significant at 5%, *significant at 10%
AB is the Arellano-Bond AR(2) test for autocorrelation

(v) Table 3.7*: Difference GMM Results for Upper-Middle and High Income Countries, dependent variable* lny_t

	1	2	3
lny_{t-1}			
Inva			
Inps			
Inge	**-.0141001** **.3693263**		
Inrq			
Inrl			
Incor	**.115** **.2271064**		
Lnef			
Inngd	**.0116872** **.0554454**	**.2720118*** **.1362868**	**-.1318718** **.0829993**
Ink	**.312826** **.1746361**	**.074727** **.1504553**	**.3308609*** **.173373**
Inimp	**.7022352*** **.3544532**		
Inrem	**.4052328** **.2448029**	**.4646255*** **.198969**	**-.1926128** **.1595861**
Inh			
Inva*ef		**-.4453756*** **.203976**	
Inps*ef		**-.162469** **.2701334**	
Inge*ef			
Inrq*ef			
Inrl*ef			
Incor*ef		**-.1675606** **.0986024**	
Inva*rl			
Inps*rl			**.7177835**** **.2885018**
Inge*rl			**-.4204151**** **.1292874**
Inrq*rl			
Incor*rl			**.132838**** **.0412675**
Sargan **Hansen**	**52.68** **0.00**	**47.37** **0.00**	**47.30** **0.00**
AB	**-0.32**	**0.73**	**AR(1)=-0.13**
No. Obs	**56**	**49**	**49**

Source: Authors' own computation
***Significance at 1%, ** significant at 5%, *significant at 10%
AB is the Arellano-Bond AR (2) test for autocorrelation

(vi)**Country Specific Cross Section Short Run Results**

Ghana

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.706650	0.058942	-11.98890	0.0012
D(GDP(-1))	0.061404	0.040945	1.499693	0.2307
D(FDI)	0.734800	0.168920	4.349980	0.0224
D(FDI(-1))	-0.730069	0.124718	-5.853776	0.0099
D(IMP)	0.091162	0.007057	12.91749	0.0010
D(IMP(-1))	0.197336	0.007936	24.86704	0.0001
D(REM)	0.241412	0.056734	4.255183	0.0238
D(REM(-1))	0.051489	0.268326	0.191888	0.8601
C	3.200291	1.680369	1.904517	0.1529

Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.120728	0.616709	-1.817270	0.1668
D(GDP(-1))	-0.499377	0.667462	-0.748173	0.5087
D(FDI)	-10.04623	60.82048	-0.165178	0.8793
D(FDI(-1))	-1.194172	8.993081	-0.132788	0.9028
D(IMP)	0.235630	0.437516	0.538564	0.6276
D(IMP(-1))	0.640551	0.396483	1.615583	0.2046
D(REM)	4.833984	11.32237	0.426941	0.6982
D(REM(-1))	-1.643696	8.963215	-0.183382	0.8662
C	8.032651	41.51709	0.193478	0.8589

Togo

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.346374	0.277316	-4.855017	0.0167
D(GDP(-1))	0.357991	0.153626	2.330286	0.1021
D(FDI)	-0.126000	0.061720	-2.041473	0.1339
D(FDI(-1))	-0.355293	0.046064	-7.713040	0.0045
D(IMP)	-0.103330	0.013579	-7.609249	0.0047
D(IMP(-1))	0.069673	0.007299	9.545039	0.0024
D(REM)	-0.234003	0.787187	-0.297265	0.7857
D(REM(-1))	-1.493978	0.428470	-3.486773	0.0399
C	4.219630	3.129341	1.348408	0.2703

Benin

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.026108	0.151113	-0.172772	0.8738
D(GDP(-1))	-0.398567	0.112360	-3.547238	0.0382
D(FDI)	0.794994	0.173684	4.577246	0.0196
D(FDI(-1))	1.478427	0.124835	11.84309	0.0013
D(IMP)	0.204002	0.004447	45.87784	0.0000
D(IMP(-1))	-0.151063	0.005476	-27.58809	0.0001
D(REM)	-0.141984	0.095922	-1.480201	0.2354
D(REM(-1))	0.018116	0.110929	0.163308	0.8807
C	-0.633958	1.987718	-0.318938	0.7707

Cote d'Ivoire

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.545921	0.500322	-1.091140	0.3550
D(GDP(-1))	0.079556	0.314832	0.252693	0.8168
D(FDI)	2.488060	8.829990	0.281774	0.7964
D(FDI(-1))	-0.052127	6.371677	-0.008181	0.9940
D(IMP)	0.186611	0.170494	1.094528	0.3537
D(IMP(-1))	-0.377463	0.176271	-2.141380	0.1217
D(REM)	-6.805400	27.31854	-0.249113	0.8194
D(REM(-1))	-3.077111	48.20504	-0.063834	0.9531
C	1.107342	0.715977	1.546618	0.2197

Mali

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.250510	0.098635	-12.67821	0.0011
D(GDP(-1))	0.152298	0.049297	3.089398	0.0537
D(FDI)	-0.398750	0.086509	-4.609331	0.0192
D(FDI(-1))	-0.967686	0.103386	-9.359936	0.0026
D(IMP)	-0.185323	0.028255	-6.558939	0.0072
D(IMP(-1))	-0.265105	0.034716	-7.636434	0.0047
D(REM)	-1.568240	0.554878	-2.826279	0.0664
D(REM(-1))	-1.849768	0.593155	-3.118522	0.0525
C	5.860264	2.350723	2.492963	0.0883

Guinea

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-2.193433	0.601942	-3.643930	0.0356
D(GDP(-1))	0.931368	0.344520	2.703382	0.0736
D(FDI)	-0.333954	0.068680	-4.862484	0.0166
D(FDI(-1))	-0.107951	0.017358	-6.219053	0.0084
D(IMP)	0.089927	0.016564	5.428955	0.0123
D(IMP(-1))	-0.144065	0.008474	-17.00096	0.0004
D(REM)	0.519411	0.697932	0.744214	0.5107
D(REM(-1))	-0.038345	0.619821	-0.061864	0.9546
C	3.472299	2.111308	1.644620	0.1986

Senegal

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.438607	0.047674	-30.17606	0.0001
D(GDP(-1))	0.666877	0.024093	27.67969	0.0001
D(FDI)	0.863435	1.477754	0.584289	0.6001
D(FDI(-1))	3.937192	0.684359	5.753114	0.0104
D(IMP)	-0.075395	0.003830	-19.68769	0.0003
D(IMP(-1))	-0.237143	0.006187	-38.32641	0.0000
D(REM)	0.554094	0.534519	1.036621	0.3761
D(REM(-1))	-2.272194	1.003957	-2.263238	0.1086
C	7.105739	3.136809	2.265276	0.1084

Niger

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-2.034512	0.120497	-16.88436	0.0005
D(GDP(-1))	0.049924	0.022195	2.249347	0.1100
D(FDI)	-0.442917	0.064403	-6.877255	0.0063
D(FDI(-1))	-0.217192	0.073820	-2.942200	0.0604
D(IMP)	-0.006523	0.018218	-0.358057	0.7440
D(IMP(-1))	-0.092986	0.033201	-2.800711	0.0678
D(REM)	-2.720265	0.688363	-3.951789	0.0289
D(REM(-1))	-3.949035	0.904837	-4.364358	0.0222
C	8.015451	1.617882	4.954286	0.0158

Sierra-Leone

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-2.494151	2.217854	-1.124579	0.3426
D(GDP(-1))	0.731697	0.539326	1.356687	0.2679
D(FDI)	-0.195607	1.864955	-0.104885	0.9231
D(FDI(-1))	-1.223531	1.293974	-0.945561	0.4141
D(IMP)	-0.249780	1.982666	-0.125982	0.9077
D(IMP(-1))	0.746625	0.871415	0.856796	0.4545
D(REM)	0.831839	20.81897	0.039956	0.9706
D(REM(-1))	2.385004	17.22169	0.138488	0.8986
C	13.93838	102.4783	0.136013	0.9004

Cape Verde

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.899564	0.023482	-38.30935	0.0000
D(GDP(-1))	-0.013823	0.027619	-0.500478	0.6511
D(FDI)	0.219360	0.078866	2.781436	0.0689
D(FDI(-1))	1.067764	0.099735	10.70602	0.0017
D(IMP)	0.422952	0.024947	16.95424	0.0004
D(IMP(-1))	0.352804	0.010505	33.58348	0.0001
D(REM)	-1.146192	0.270091	-4.243722	0.0240
D(REM(-1))	-1.028462	0.152859	-6.728188	0.0067
C	2.842560	0.897652	3.166662	0.0506

Tanzania

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.434947	0.165860	-8.651572	0.0032
D(GDP(-1))	0.080120	0.059117	1.355276	0.2683
D(FDI)	0.535811	0.111653	4.798919	0.0172
D(FDI(-1))	-0.134807	0.043449	-3.102627	0.0532
D(IMP)	0.079905	0.008293	9.635507	0.0024
D(IMP(-1))	-0.252940	0.028343	-8.924243	0.0030
D(REM)	-3.903824	4.294367	-0.909057	0.4303
D(REM(-1))	2.557887	3.426007	0.746609	0.5095
C	7.813490	4.870503	1.604247	0.2070

Kenya

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.280470	0.041149	-31.11768	0.0001
D(GDP(-1))	0.751918	0.036669	20.50540	0.0003
D(FDI)	0.716640	0.059160	12.11359	0.0012
D(FDI(-1))	-0.009088	0.079650	-0.114103	0.9164
D(IMP)	-0.645406	0.019946	-32.35816	0.0001
D(IMP(-1))	-0.256658	0.008735	-29.38345	0.0001
D(REM)	0.235980	0.338545	0.697042	0.5359
D(REM(-1))	2.045058	0.087972	23.24678	0.0002
C	4.448844	0.735455	6.049103	0.0091

Rwanda

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.610974	0.144825	-11.12357	0.0016
D(GDP(-1))	0.128295	0.069288	1.851628	0.1612
D(FDI)	-0.982402	0.675502	-1.454329	0.2418
D(FDI(-1))	-0.844726	0.530812	-1.591383	0.2098
D(IMP)	-1.488657	1.221413	-1.218799	0.3100
D(IMP(-1))	1.166711	0.737090	1.582860	0.2116
D(REM)	0.152600	0.733290	0.208104	0.8485
D(REM(-1))	4.042505	3.680491	1.098360	0.3523
C	11.42725	7.796962	1.465603	0.2390

Uganda

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.294517	0.141196	-2.085880	0.1283
D(GDP(-1))	-0.141512	0.038152	-3.709142	0.0341
D(FDI)	0.955953	0.260851	3.664751	0.0351
D(FDI(-1))	-0.430419	0.163633	-2.630390	0.0783
D(IMP)	0.211179	0.067581	3.124834	0.0523
D(IMP(-1))	-0.362748	0.153099	-2.369378	0.0986
D(REM)	0.949596	0.421689	2.251888	0.1097
D(REM(-1))	0.454687	0.174179	2.610464	0.0797
C	2.208243	4.334542	0.509452	0.6455

Mozambique

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.144052	0.010593	-13.59899	0.0009
D(GDP(-1))	-0.041973	0.013640	-3.077117	0.0543
D(FDI)	0.077330	0.001517	50.98099	0.0000
D(FDI(-1))	0.123164	0.007337	16.78713	0.0005
D(IMP)	-0.101749	0.004531	-22.45514	0.0002
D(IMP(-1))	-0.058344	0.001075	-54.27572	0.0000
D(REM)	-2.961917	1.717123	-1.724930	0.1830
D(REM(-1))	-4.094789	1.652047	-2.478616	0.0894
C	0.370794	0.290383	1.276916	0.2915

Madagascar

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-2.003839	0.329151	-6.087908	0.0089
D(GDP(-1))	0.169762	0.086693	1.958197	0.1451
D(FDI)	0.398719	0.126394	3.154564	0.0511
D(FDI(-1))	-0.228242	0.154456	-1.477711	0.2360
D(IMP)	0.291124	0.052044	5.593779	0.0113
D(IMP(-1))	0.427474	0.036616	11.67458	0.0014
D(REM)	1.309705	2.374516	0.551567	0.6197
D(REM(-1))	1.563876	1.120152	1.396129	0.2571
C	0.541657	1.321554	0.409863	0.7094

Malawi

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.735182	0.018426	-39.89880	0.0000
D(GDP(-1))	0.602403	0.022114	27.24076	0.0001
D(FDI)	-0.157187	0.012190	-12.89442	0.0010
D(FDI(-1))	-0.195093	0.009468	-20.60633	0.0002
D(IMP)	-0.103144	0.005585	-18.46856	0.0003
D(IMP(-1))	0.196079	0.006536	30.00029	0.0001
D(REM)	1.594858	8.084899	0.197264	0.8562
D(REM(-1))	-8.974489	10.21476	-0.878580	0.4443
C	2.927074	0.392183	7.463536	0.0050

Mauritius

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.335845	0.101464	-13.16566	0.0009
D(GDP(-1))	-0.063811	0.041245	-1.547127	0.2196
D(FDI)	0.621974	0.078979	7.875204	0.0043
D(FDI(-1))	0.717077	0.124453	5.761830	0.0104
D(IMP)	-0.065438	0.007656	-8.547667	0.0034
D(IMP(-1))	0.053116	0.006243	8.508025	0.0034
D(REM)	154.1105	26959.87	0.005716	0.9958
D(REM(-1))	-0.282614	0.687481	-0.411086	0.7086
C	1.453831	1.004502	1.447316	0.2436

Seychelles

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.048899	0.170102	-6.166277	0.0086
D(GDP(-1))	0.464823	0.079684	5.833331	0.0100
D(FDI)	-0.173650	0.009415	-18.44331	0.0003
D(FDI(-1))	-0.114678	0.007277	-15.75919	0.0006
D(IMP)	0.087529	0.022211	3.940825	0.0291
D(IMP(-1))	0.210434	0.014046	14.98178	0.0006
D(REM)	-3.596600	8.025964	-0.448121	0.6845
D(REM(-1))	1.235933	7.393901	0.167156	0.8779
C	-2.152857	3.010600	-0.715092	0.5262

Algeria

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.237181	0.007761	-30.56049	0.0001
D(GDP(-1))	0.028594	0.015815	1.808009	0.1683
D(FDI)	-1.000130	0.126122	-7.929849	0.0042
D(FDI(-1))	2.141894	0.119776	17.88250	0.0004
D(IMP)	-0.113812	0.002087	-54.52516	0.0000
D(IMP(-1))	-0.021542	0.002420	-8.901828	0.0030
D(REM)	-0.363519	0.053352	-6.813541	0.0065
D(REM(-1))	1.397447	0.046596	29.99101	0.0001
C	0.682883	0.089349	7.642853	0.0047

Morocco

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.096620	0.129161	-0.748053	0.5087
D(GDP(-1))	-0.876961	0.063697	-13.76774	0.0008
D(FDI)	0.079639	0.042858	1.858202	0.1601
D(FDI(-1))	0.503184	0.034444	14.60893	0.0007
D(IMP)	-0.137886	0.006956	-19.82158	0.0003
D(IMP(-1))	0.090978	0.003921	23.20010	0.0002
D(REM)	0.968606	0.352977	2.744107	0.0711
D(REM(-1))	0.825838	0.184948	4.465234	0.0209
C	0.183173	2.358184	0.077675	0.9430

Tunisia

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.551283	0.072425	-7.611799	0.0047
D(GDP(-1))	0.166171	0.052071	3.191240	0.0497
D(FDI)	0.115142	0.030809	3.737340	0.0334
D(FDI(-1))	0.411925	0.026311	15.65583	0.0006
D(IMP)	0.019068	0.010139	1.880670	0.1566
D(IMP(-1))	-0.223002	0.009562	-23.32286	0.0002
D(REM)	4.528574	3.212219	1.409796	0.2534
D(REM(-1))	-2.976832	3.127941	-0.951691	0.4115
C	1.397087	0.611650	2.284129	0.1065

Egypt

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	0.136985	0.079798	1.716658	0.1845
D(GDP(-1))	-0.463553	0.057079	-8.121186	0.0039
D(FDI)	0.531702	0.065603	8.104804	0.0039
D(FDI(-1))	0.280167	0.029143	9.613431	0.0024
D(IMP)	0.306034	0.015623	19.58919	0.0003
D(IMP(-1))	-0.189669	0.019710	-9.623119	0.0024
D(REM)	-1.108912	0.265055	-4.183712	0.0249
D(REM(-1))	-0.825335	0.070582	-11.69327	0.0013
C	-0.199907	1.182916	-0.168995	0.8766

Sudan

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.599562	0.031173	-19.23350	0.0003
D(GDP(-1))	-0.225970	0.076911	-2.938057	0.0606
D(FDI)	-1.833601	0.873529	-2.099072	0.1267
D(FDI(-1))	-1.595187	0.434385	-3.672292	0.0349
D(IMP)	0.435541	0.057148	7.621259	0.0047
D(IMP(-1))	0.940798	0.096219	9.777663	0.0023
D(REM)	2.205965	0.982800	2.244571	0.1105
D(REM(-1))	1.343794	0.794679	1.690988	0.1894
C	3.666718	1.540258	2.380587	0.0976

Cameroon

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.943751	0.106763	-8.839650	0.0031
D(GDP(-1))	0.098928	0.088060	1.123417	0.3430
D(FDI)	-0.282354	0.070893	-3.982798	0.0283
D(FDI(-1))	-0.239004	0.036415	-6.563378	0.0072
D(IMP)	-0.097934	0.018900	-5.181751	0.0140
D(IMP(-1))	-0.137774	0.012628	-10.91056	0.0016
D(REM)	4.649066	4.572411	1.016765	0.3841
D(REM(-1))	3.688732	5.654554	0.652347	0.5607
C	2.625627	1.197755	2.192124	0.1160

South Africa

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.167381	0.048593	-3.444528	0.0411
D(GDP(-1))	-0.263088	0.022190	-11.85600	0.0013
D(FDI)	-0.514715	0.025215	-20.41289	0.0003
D(FDI(-1))	-0.555835	0.021950	-25.32331	0.0001
D(IMP)	0.420253	0.007790	53.94996	0.0000
D(IMP(-1))	-0.259211	0.010035	-25.82988	0.0001
D(REM)	50.46380	381.2314	0.132371	0.9031
D(REM(-1))	-37.70469	283.5625	-0.132968	0.9026
C	-0.080217	0.151614	-0.529089	0.6334

Namibia

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.849323	0.153024	-5.550275	0.0115
D(GDP(-1))	-0.257823	0.061234	-4.210468	0.0245
D(FDI)	-0.077735	0.040289	-1.929441	0.1492
D(FDI(-1))	-0.147916	0.039001	-3.792636	0.0322
D(IMP)	-0.206771	0.010911	-18.95060	0.0003
D(IMP(-1))	0.036346	0.012630	2.877834	0.0636
D(REM)	-7.853463	9.032428	-0.869474	0.4486
D(REM(-1))	-6.226866	18.18481	-0.342421	0.7546
C	2.622511	1.238736	2.117087	0.1245

Botswana

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-2.285793	0.155423	-14.70692	0.0007
D(GDP(-1))	0.830556	0.078127	10.63088	0.0018
D(FDI)	-0.964773	0.214587	-4.495952	0.0205
D(FDI(-1))	-0.810202	0.120693	-6.712912	0.0067
D(IMP)	0.493339	0.041850	11.78831	0.0013
D(IMP(-1))	-0.203206	0.045452	-4.470832	0.0209
D(REM)	-6.896328	23.26431	-0.296434	0.7862
D(REM(-1))	13.69645	26.90065	0.509149	0.6457
C	5.369790	2.898764	1.852441	0.1610

Swaziland

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.485739	0.019412	-76.53815	0.0000
D(GDP(-1))	0.966729	0.019663	49.16411	0.0000
D(FDI)	0.367141	0.017646	20.80605	0.0002
D(FDI(-1))	0.483083	0.023632	20.44226	0.0003
D(IMP)	-0.352041	0.008876	-39.66085	0.0000
D(IMP(-1))	-0.149714	0.006278	-23.84556	0.0002
D(REM)	2.327334	0.403738	5.764460	0.0104
D(REM(-1))	3.152767	0.206902	15.23798	0.0006
C	1.037219	1.117163	0.928441	0.4217

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CURRICULUM VITAE

Education

PhD Economic, Anadolu University, Turkey (2018)
MPhil Economics, University of Ghana, (2013)
BSc Actuarial Science, UDS, Ghana (2010)

Research Funding/ Grants/ Awards/Scholarships

Ibni Haldun Social Sciences Graduate Scholarship, (2013-2018)
ERASMUS grants for EU internships (2017)
Ghana Government Post Graduate Thesis Grant (2012-2013)

Professional Membership Affiliation

Actuarial Society of Ghana, (2010- present)
African Econometric Society (2013-present)

Industry Work Experience

International Projects Manager, Active Youth Intl., Lithuania (2017)
Research Intern, Child and Youth Finance Intl., Netherlands (June- September 2016)
Investment Officer, Ecobank Ghana, (2013)
First Grade Tutor, Christ way Academy, Ghana (2005-2006)

Volunteer Experience

Project Officer, WEEST Foundation, Ghana (Feb 2013- Sep 2013)
Risk Officer, HEE Foundation, Ghana (Jan 2011-Jan 2013)
Member of Group 92 Team, UDS, TTFPP. (2007-2009)

Publications and Papers Presented

- Africa's Economy: Trends, challenges, Prospects and Potentials. **International Journal of African and Asian Studies.** Vol.26, page 1-23, November 2016
- A Bivariate causality between Energy Consumption and Economic Growth in Ghana**; - 7TH Annual American Business Conference in New York.-**July 23rd 2015
- Macroeconomic effects of Globalization in Ghanaian economy**; EconAnadolu Conference in Turkey-** June 10-June 12, 2015

- Estimating Real Interest rate using the Yield Curve: Evidence from Ghana. **European Journal of Accounting, Auditing and Financial Research**, Vol. 2, No:6, page 40-55, August 2014.
- Empirical Modelling and Model Selection for Forecasting Monthly Inflation of Ghana**. Mathematical theory and Modelling ISSN 2224-5804 (Paper) ISSN 2225-0522(online)**, Vol 4, No 3, 2014

Research Works in progress

- Review of Growth Theories and Its Empirical Evidence on Africa
- A Panel Analysis on the Impact of Foreign Remittances, Foreign Direct Investment, Foreign Imports and Economic Growth in Africa.
- The Role of Institutions on Economic Growth in Sub-Saharan Africa

Conferences Attended

- Project Your City-EU Parliament, Lithuania 2017
- 7th Annual American Business Conference, New York. 2015
- EconAnadolu, Turkey, 2014
- National Annual ICT training workshop "sector C" in statistical software (SPSS, GENSTAT, MATLAB) for data analysis organized by the Ghana Statistical Students Association at UDS Navrongo campus, directed by Prof. NNN. Nsowah Nuamah, 31st March – 2nd April, 2010.
- Databank "Cultivating the Investment Habit", UDS Navrongo Campus, 2009.
- "Creative Job Search Techniques in the Current Global Market Milieu" by Emmanuel Dei Tumi, CEO (Future Leaders Group) at St. John Bosco Training College, Navrongo, 9th November, 2008.
- "Money Fair" by Citi FM on 13th August 2010
- UN representative on the Human security conference, 22-23 May 2013. Accra- Ghana.