# UNIVERSITY OF GHANA

## DOES TRADE ENHANCE INCLUSIVE GROWTH? EMPIRICAL EVIDENCE FROM AFRICA

**BY**

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# DECLARATION

I, Augustina Osei, declare that this work is the result of my own research and has not been presented by anyone for any academic award in this or any other University. All references used in the work have been fully acknowledged.

.....  July 1, 2021

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# CERTIFICATION

This is to certify that this thesis is the result of research undertaken by Augustina Osei, towards the award of Masters of Philosophy in Finance Degree in the Department of Finance, University of Ghana, under the supervision of Dr. Edward Asiedu and Prof. Godfred Alufar Bokpin, all of the University of Ghana Business School, Ghana.

In places where references of other works have been cited, full acknowledgement has been given. No part of this thesis has either been presented in whole or in part to any institution for any award.

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13/7/2021

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# DEDICATION

This thesis is dedicated to my parents – Mr. Emmanuel Kwame Osei and Mrs. Margaret Annobea Osei and my four sisters – Lily, Evelyn, Debbie and Abigail. Special dedication to Dr. Jonathan Nii Okai Welbeck, a human developer and social entrepreneur and all staff of Enterprise Risk Management Institute Ltd, University of Ghana, Legon.

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# ABSTRACT

In March 2018, Africa created the largest free trade zone by membership. The African Continental Free Trade Agreement (AFCFTA) is expected to promote intra-regional trade, particularly among small scale enterprises hence greater inclusive economic growth. In this study, the researcher explored the relative impact of intra-regional trade and extra-regional trade on inclusive growth, measured by using the Asian Development Bank (AsDB) framework. Using data from 46 African countries covering 1995 to 2016, we estimated the impact of disaggregated trade flows (intra-regional trade and extra-regional trade) using the Spatial Tobit Panel Generalised Method of Moment (STPGMM) Estimator. The STPGMM allows us to control for potential spatial effect while eliminating potential biases and inconsistencies that may result from the tobit effect. The empirical evidence indicates that there is a significant positive relationship between both intra-regional and extra-regional trade and inclusive growth. In terms of magnitude, the evidence also indicates that the effect of extra-regional trade is higher compared with intra-regional trade on inclusive growth. Besides, the difference in the relative impacts of intra-regional and extra-regional trade, growth impact of intra-regional trade depended on political instability, market size, nature of commodities and excessive intervention and regional trade agreements. Accordingly, African countries must facilitate intra-regional trade to boost inclusive growth by reducing trade barriers, cost and promote infrastructure to enhance intra-regional trade in Africa.

**Keywords**: Intraregional trade; Extra-regional trade; Inclusive growth; Africa

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## LIST OF ABBREVIATIONS

AFCFTA - African Continental Free Trade Agreement

AU - African Union

AfDB - African Development Bank

Afreximbank - African Export-Import Bank

ANOVA - Analysis of Variance

AsDB - Asian Development Bank

CIS - Commonwealth of Independent States

COMESA - Common Market of Eastern and Southern Africa

EAC - Eastern African Community

ECLAC - United Nations Economic Commission for Latin America and the Caribbean

FDI - Foreign Direct Investment

GDP - Gross Domestic Product

ILO - International Labour Organization

MENA - Middle East and North Africa

OECD - Organisation for Economic Co-operation and Development

OLS - Ordinary Least Squares

RTAs - Regional Trade Agreements

SADC - South African Development Community

STPGMM - Spatial Tobit Panel Generalised Method of Moment

SSA - Sub-Saharan African

UNDP - United Nations Development Programme

UNCTAD - United Nations Conference on Trade and Development

VECM - Vector Error Correction Model

WAEMU - West African Economic and Monetary Union

WTO - World Trade Organisation

PAFTA - Pan-Arab Free Trade Area

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

In March 2018, African governments created the largest free trade zone by membership. The African Continental Free Trade Agreement (AFCFTA) is expected to promote intra-regional trade, particularly among small scale enterprises, which account for significant share of the cross-border trade flows, hence greater inclusive economic growth (Afreximbank, 2019). The first aspirations of the African Union's Agenda 2063 are to have a prosperous Africa based on inclusive growth and sustainable development by eradicating poverty in one generation and build shared prosperity through a social and economic transformation of the continent. Attainment of this goal, including greater intra-regional trade would improve quality of life, ensure high standard of living, sound health, improve access to education through increased government and household income thereby reducing household poverty (African Union, 2015).

Over the last three decades, Africa has witnessed significant economic growth, with real GDP increasing from US$ 37.986 trillion in 1990 to US$ 77.938 trillion in 2016. This has been matched by substantial growth in total Africa trade. Intra-African trade, defined as the average of intra-African exports and imports, was around 2% during the period 2015–2017**.** Extra regional trade between Africa and the World $760 billion from 2015–2017 (UNCTAD). Africa's merchandise exports rose from US$ 104.9 billion in 1990 to US$ 640 billion in 2012 before retreating to US$355 billion in 2016 on account of commodity price shock of 2014/2015. This positive development has been matched by appreciable decline in poverty levels across Africa in the last three decades, although improvements are not uniformly distributed across all 55 African countries. Data from the World Bank/IMF shows that, in real terms, the number of people living on less than USD 1-a-day has declined from 56% to 43%

between 1990 and 2016. The World Bank report cited evidence in support of the idea that the poverty rate would have reduced more if the degree of excellence and comparability of the underlying data is taken into account (World Bank, 2016).

Many economists and policy makers therefore focus their policy prescriptions and analysis on inclusive growth. Ranieri and Almeida Ramos (2013) emphasized that achieving high economic growth rate is necessary but may not be inclusive, meaning that the growth may not translate into broad based wealth creation and general improvement in welfare of the population. The idea of inclusive growth was pioneered by Kakwani and Pernia (2000) in their work on “What is Pro-Poor Growth” which was cited in the Asian Development Review in 2000. The term "inclusive" growth was stated one time only, which makes it have the same meaning as "pro-poor growth". Kakwani and Pernia (2000) defined pro-poor growth as one that enables the poor to actively participate in and significantly benefit from economic activity. It is a major departure from the trickle-down development concept (Krugman, 2016). It is inclusive economic growth. Ali and Son (2007) defines inclusive growth as growth that creates new economic opportunities and also ensures equal access to the opportunities created for all sectors of the society. Growth becomes inclusive when it gives people in the society the opportunity to participate and add to the growth development on an equivalent basis irrespective of the individual’s situations.

Numerous studies have established that international trade is an engine for economic growth (World Bank, 2016). However, the volume of studies that have attempted to investigate the relationship between trade and inclusive growth is limited (Singh & Chaturvedi, 2010; Joseph, 2013). According to studies conducted under the auspices of the United Nations, international trade is the surest mechanism for accelerating inclusive economic growth and poverty reduction (UN, 2015). Similarly, research by the World Bank has confirmed that increasing trade is paramount to ending poverty and spreading prosperity (World Bank, 2016).

Studies at the individual level have also corroborated findings of international bodies. For example, Harrison (1996) found that greater openness (international trade) is associated with high economic growth while Frankel and Romer (1999) empirically found in their studies that trade has a strong and positive impact on economic growth. Jenish (2013) in a study of regional trade and economic growth of the Commonwealth of Independent States (CIS) also found a positive relationship between intraregional and extra-regional trade respectively and economic growth. Frankel and Romer (1999) used the gravity model approach which indicates how geography determines the influence of trade on growth. While some studies indicate a consensus of the relationship between trade and growth, they are not in agreement regarding the nature of the relationship (Winters, McCulloch & McKay, 2004; Goldberg & Pavcnik 2007).

This could be set to have arisen partially out of the elements or variables that are used to measure growth. Studies find that the significance of the relationship between trade openness and economic growth is moderate. The concept which underpins the trade and growth nexus stems from the basic economic concepts such as national income accounting, which operates within an open and closed economy. It is recalled that the challenge of employing GDP to measure the standard of living was how to measure the spread or distribution of the national income. It is argued that it is based on the notion of the extent to which economic growth has affected households that inclusive growth as a concept was derived (Lin, 2004). Singh and Chaturvedi (2010) consider inclusive growth as growth combined with equal opportunities. The AsDB (2007) stresses that inclusive growth is not a pro-poor phenomenon, but rather growth alongside equity. This is because early on Ramis and Kuo (1979) used the expression "growth with equity" to mean inclusive growth.

From all the above definitions of inclusive growth, one perceives the sense of an increasing effect of trade on growth such that an increasing number of households could be affected

positively to a large extent, however, the economy includes both households and firms. Hence, Ianchovichina and Lundstrom (2013) have argued that inclusive growth should rather place greater importance on employment which is productive than the redistribution of incomes. Using the concept of the circular flow of income, one can employ a simple model with relevant measurement tools to analyze the effect of trade on growth for houses and firms respectively. However, one must not lose sight of the fact that firms are also consumers at another level, and therefore trade enhances their wellbeing in various ways. Further analysis of the elements of inclusive growth, based on the basic concept of economics reveal some level of complexity which is likely to negate effective research (Jorge & Rafalowicz, 2013). Hence, terms or expressions should not confuse the objective of such studies. That is the reason behind Jorge and Rafalowicz (2013) arguing that inclusive growth should comprise "equality, social responsibility, poverty reduction and economic security" which culminate in the well-being of everybody.

It is further observed from the foregoing paragraphs that the concept of inclusive growth itself is fraught with challenges. While one cannot ensure equal opportunities for everybody at the same time everywhere, one can continually increase opportunities to more people over time. Long ago, Ali and Son (2007) had indicated that economic growth is a necessary but insufficient condition for inclusive growth. One would agree with them in that it is a certain level of growth that will cause a substantial change in the lives of both households and firms; and that is where the concept of greater participation or distribution comes in (Ali & Son, 2007; AsDB, 2007). Hence, one readily sees the initial quest of government to try to widen the spread of per capita income in order to render economic growth increasingly inclusive.

In light of all the above arguments, measuring inclusive growth is also bound to present challenges, just like economic growth. Some models have been proposed (Ali & Son, 2014). However, all these models have merits and limitations. In light of the components employed

in them, besides, there is the issue of endogeneity (Zahonogo, 2017; Wooster, Banda & Dube, 2006; Jenish, 2013). There are other factors like the concentration of intraregional trade and extra-regional trade respectively and how they impact economic growth (African Trade Report, 2018).

Studies such as Younes (2010) and Kitavi (2014) found that intraregional trade has a higher effect on growth than extra-regional trade. Their results showed that both exports and imports indicated a significant and positive relationship with Gross Domestic Product (GDP) in the short and long run. However, a number of studies also contradicts the earlier claim of a positive relationship between intra-regional trade and growth. For instance, according to Wooster et al., (2006), extra-regional trade had a better impact on growth due to the larger market size, knowledge transfer, greater variety of countries and regional trade agreements. When it comes to inclusive growth and trade very little is known. This study therefore examines the effect of trade on inclusive growth.

## 1.2 Statement of the Problem

African Heads of States through the African Union launched the largest Free Trade Area in 2018 as part of initiatives to promote sustainable economic growth under their "Agenda 2063: The Africa We Want". The African Continental Free Trade Area is expected to double intra-African Trade within the first decade of the launch and promote appreciable economic growth and significant growth in wealth, particularly among SMEs. The big question nonetheless lies in the ability of greater intra-regional trade to drive economic growth. While the significant growth in Africa's economy during the last 3 decades have been accompanied by growth in Africa's trade and intra-African trade, the causal impact is yet unknown.

While there are many studies on the link between trade and economic growth (including among several others, World Bank, 2016; Frankel & Romer, 1999; Harrison, 1996; Wooster et al., 2006, focusing on Africa), only a few have focused on inclusive growth and the possible impact of intra-regional trade and extra-regional trade. The very few studies focused on the inclusive growth impact of trade suggest that trade, being external or internal, has the potential to improve economic welfare. Kitavi (2014), Singh and Chaturvedi (2016) and Jenish (2013) and others argued that studies on economic growth should focus on the analysis of inclusive rather than economic growth. Jenish (2013), in his study argued that trade was likely to improve the welfare of citizens. Another study by the UN (2015) concluded that international trade was the surest mechanism for accelerating inclusive economic growth and poverty reduction. In a study by the World Bank on the impact of trade on poverty concluded that increasing trade is paramount to ending poverty and spreading prosperity (World Bank, 2016). None of these studies, nonetheless paid particular attention to intra-African trade. However, for developing countries, it is argued that trade within the group (intra-regional trade) could enhance sustainable medium to long term growth and development if these countries in the group could use the within group trade as a way to learn and muster the trade dynamics, and more importantly improve on infant industries, that could not compete with well-established global industries. It is thus theoretically plausible that intra-regional trade could be a major catalyst to inclusive growth.

The second part of the problem is a methodological one. Many economic growth studies, including those focused on inclusive growth, have also ignored the potential existence of spatial correlation in the economic series. Dingel, Meng and Hsiang (2019) suggest that economic policies and activities have potential spatial effects, thus the activities in one country may potentially have implications for neighboring countries. This is particularly evident within the context of trade and industrial policy formulation and implementation. They argued that

ignoring the potential spatial correlations may result in overstatement of the true effect of any economic variable on growth.

### 1.3 Research Questions

In the light of the foregoing, it is imperative to ask, assuming the presence of spatial policy effect:

1. What extent has intra-regional trade performance contributed to inclusive growth in Africa?
2. What extent has extra-regional trade performance contributed to inclusive growth in Africa?
3. What extent has total trade performance contributed to inclusive growth in Africa?

### 1.4 Research Objective

This study therefore undertakes on the impact of trade and intra-African trade on inclusive growth correcting for the potential spatial correlation in the data. Specifically, the study seeks:

1. To examine the linkage between intra-regional trade and inclusive growth in Africa.
2. To examine has extra-regional trade performance contributed to inclusive growth in Africa
3. To examine the linkage between total trade and inclusive growth in Africa.

It is expected that the results obtained from the above objectives would uncover the true nature of the relationship between trade and inclusive growth in Africa. This is because the objectives enable analysis at various levels of intra-regional trade and extra-regional trade. It would be revealing to appreciate if a strong relationship between trade and inclusive growth necessarily translates into an equally strong and positive relationship between extra-regional trade and inclusive growth.

### 1.5 Relevance of the Study

Presently, to the best of our knowledge there is very little focus on the potential impact of intra-African trade on economic growth or inclusive growth. This study thus, not only close the gap in literature on intra-African trade and economic growth, it brings to light the need for researchers to take cognizance of potential neighborhood effect of country level economic policies and how to correct for them in economic studies. This significantly helps in minimizing the effect of economic policies on a particular country or region. This study is particularly necessary as it sets the stage for the official implementation or operationalization of the African Continental Free Trade Area. It adds to existing arguments on optimizing the returns from trade and intra-regional trade. Further, the findings of the study sought to help drive the policy on trade in Africa as a whole as well as individual countries in the region. Aspects of the previous literature have indicated that certain policies have favoured the role of trade in catalyzing growth. It is worthy to mention that the results will also examine the effect of regional policies on the volumes of extra-regional trade, thereby informing policy-making at that level. Policymaking would thus, be geared more towards one that favours trade as an engine of growth in developing countries.

Secondly, the results of the study sought to improve on government knowledge of the relevant components of the inclusive growth and enhance the methods of assessing the impact of trade on inclusive growth. It is possible that not all the elements (components) of inclusive growth will apply equally to every country in Africa. This knowledge will inevitably enhance the repositioning of domestic factors to improve trade and inclusive growth in Africa.

Most studies on growth have either focused on intraregional trade or extra-regional trade respectively. However, the current study examines the two perspectives within the same study and the same period. The merit of this approach is that it enables a certain level of comparison

which uncovers the true nature of trade at both the intraregional and extra-regional levels. The implication of increasing intraregional trade for the impact of extra-regional trade on inclusive growth is better captured. Other possible factors that may undermine increased intraregional trade may also be discovered and might help shape the perspective of governments and regional bodies in Africa.

Another distinctive significance of this study is seen in the trade and inclusive growth discourse in academia. It comes to narrow the huge gap in the study of trade and inclusive growth. It brings a fresh perspective to the study because of the working model which is employed within the context of the various understandings of inclusive growth in the literature.

The study is also important because of the period it covers. It analyzes data from various sources from 1995 – 2016, which is a very comprehensive period to enable an in-depth analysis to reveal trends, relationships, and challenges that have characterized the relationship between trade and inclusive growth in Africa.

Moreover, the current research brought out any possible theoretical as well as measurement challenges of inclusive growth. As the study interrogates the various components of inclusive growth in the literature, their various limitations regarding their measurement and implications for the study's results are better appreciated. This will undoubtedly throw more light on the relationship between trade and inclusive growth in Africa which has seen inadequate study.

### 1.6 Scope of the Study

The study spans the thirty-six (46) countries of Africa and covers twenty-two (22) years from 1995 to 2016. The study investigated the relationship between trade and inclusive growth in Africa. It also studied more specifically the extent to which intraregional and extra-regional trade respectively impacted inclusive growth in Africa. The researcher used comprehensive

measurements for inclusive growth developed from the policy pillars of inclusive growth as adapted from Zhuang and Ali (2007) Asian Development Bank. Furthermore, the study examined the impact that the various trade policies and agreements at both domestic and regional levels have had on inclusive growth in the study area. Other key variables which constitute the framework for the study include gross domestic product, population, inflation, and Foreign Direct Investment (FDI). The findings of the study are expected to reveal interesting results.

### 1.7 Organization of the study

Chapter one introduced the study with a background of the study, the motivation for the study and the statement of the problem. These are followed by the research questions and the research objectives and the relevance of the study. The chapter closes with the scope of the study and how it is organized into chapters.

Chapter two conducted a comprehensive theoretical and empirical reviews of the literature on both the relationship between trade and growth on one hand and between trade and inclusive growth on the other. It also covered relevant literature on the linkage of the relationship between trade and economic growth in selected regions of the world such as the European Union and the Middle East. The chapters also reviewed relevant literature of a few individual countries such as South Africa, Nigeria, France, and Ghana. The chapter carried out a comprehensive review of the literature on the relationship between trade and growth in East Africa and ECOWAS countries since they indicate pointers and trends for the current study.

Chapter two also examined the literature on the various models that have been used so far and investigated the relationship between trade and inclusive growth in Africa and other countries. The major economic and political characteristics within the African environment are

highlighted in the light of their impact on the linkage between trade and inclusive growth. The major trade policies, conventions, agreements, and unrelated materials are also reviewed to elicit their possible impact on the relationship between trade and inclusive growth. Chapter two closed with the identification of gaps in the literature on the linkage between trade and inclusive growth in Africa.

Chapter three introduced the methodology, the sample size, sources and types of data for the study and the period time. The empirical results and findings were presented and discussed in chapter four, and lastly, chapter five stated the general contributions of the thesis, conclusion, policy implications, and areas for further studies.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter does a comprehensive review of the theoretical and empirical literature on trade and inclusive growth. It begins by reviewing relevant literature on trade and growth in Europe, some selected regions and countries in Africa. These countries include South Africa, Nigeria, France, and Ghana. The chapter also discusses literature on the issue of what constitutes inclusive growth and examines the various models that have been employed in the analysis of the relationship between trade and growth on the one hand and trade and inclusive growth on the other. A section is devoted to what has been done as far as the relationship between trade and inclusive growth in Africa is concerned with particular emphasis on measurement of inclusive growth. The role of major trade policy conventions and agreements in enhancing trade is also reviewed. The chapter ends with a section on gap identified in the literature on the linkage between trade and inclusive growth in Africa.

## 2.2 Trade Theories

Trade theories are built around the benefits of trade among nations and the potential as well as real benefits and challenges over the years. Mercantilism can be described as the early sign of trade among states whereby gold was accumulated and exports were increased during the industrial revolution (Pettinger, 2017). However, trade theory originally grew from the work of Smith (1776) as cited in Zahonogo (2017) where he postulated that countries will trade in goods and services for which they have an absolute cost advantage.

According to Smith (1776) as cited in Zahonogo (2017) unrestricted trade (free trade) would create a situation whereby countries could specialize in the production of goods in which they have an absolute cost advantage, thereby leading to lower prices (Zahonogo, 2017). However, Smith's theory of absolute cost advantage posed a limitation regarding the situation where only one country had all the absolute cost advantages in the production of all commodities. This led to the theory of comparative cost advantage by Ricardo (1819) as cited in Zahonogo (2017).

Though Smith (1776) and Ricardo (1819) were both classical trade theorists, the latter postulated that countries should specialize in the production and trade of commodities for which they had a comparative cost advantage. For example, where country A and B produce furniture, but where B has lower relative cost and hence lower furniture prices, it will be better for country A to buy from country B. Therefore, Ricardo extended Smith's theory by noting that other countries could also benefit from trading. However, it should be noted that in both theories, labour is the only factor of production that determines varying prices in respective nations (Ricardo & Forgaty, 1965). As nations evolved and free trade increased, it was observed that it was not realistic to assume that the only factor of production is labour.

Other factors of production as capital and technology had to be considered. This led to an aspect of neo-classical theory by Marx (1894) as cited in Seretis and Tsaliki (2016). Marx (1894) argued that value and competition were better enjoyed by countries who have huge amounts of capital and hence had an absolute cost advantage. It is interesting to note that while the Marxian Theory of trade, which is based on the law of value does not necessarily support absolute cost advantage. Analysis of his argument ultimately leads to a situation where countries who can add more value to goods and services always have the advantage (Seretis & Tsaliki, 2016). This may explain why developing countries who liberalize their economy by participating in trade often rather worsen their economies instead of improving them (Seretis & Tsaliki, 2016). Another important development in the evolution of trade theories is the

Heckscher-Ohlin model. Developed by Heckscher et al. (1991), this model expanded the comparative cost advantage theory postulated by Ricardo. They included capital in the analysis to resolve the assumption gap of using only labour as the factor of production. The Heckscher-Ohlin model also assumes that technology is constant and the production strategy is dependent on the prices of labour and capital. It should be indicated that the Heckscher-Ohlin theory also recognizes that countries have varying levels of natural resources. Hence, it will be natural for countries with greater resources to produce more at lower prices than the nation with scarce resources. However, this also depends on the resource combinations of labour and capital. The question, however, remains that for how long can such a model propel economic growth through continental benefits and at both domestic and international levels involve integration of many factors which ultimately engender the dynamic gains of trade: a real challenge to developing countries (Wooster et al., 2006).

In an attempt to resolve this key limitation, the Stolper and Samuelson theory as cited in Lansana (2014) employs changes in prices of commodities to analyze reactions in factor prices. In other words, still within the free market equilibrium system where demand and supply determine the prices of goods and services, the theorem argues that the prices of goods can affect the prices of factors of production that are used to produce them. For example, if Ghana produces a ginger beverage which it markets mostly in Africa and the price of the product increases over time, it is very likely the price of raw ginger in Ghana will increase in tandem. According to the Stolper-Samelson theory which is within the Heckscher-Ohlin model, the initial increases in the price of the product is translated into both capital and labour gains. However, this works just perfectly where there is full employment and there are only two factors of production: labour and capital. The question of the impact of trade in the long run persisted. In his contribution to trade theory, Krugman (1990) stressed that trade can catalyze growth in the long-run if the average cost falls over time as production increases. The main

focus of the New Trade Theory was the optimal allocation of resources instead of the production of goods and services. It could be explained in terms of what countries can do to sustain trade. Hence, Krugman (1992) cited the essence of knowledge that is derived from research which eventually makes one country enjoy a better advantage than the other. Thus, the New Trade Theory is implying that a country may not have a relative cost advantage in producing the same commodity forever. This has been proved by the role of technology in production with its effects on prices. Another positive addition Krugman (1992) makes to trade theory literature is that trade protection should be an end to itself. According to him, protection should not be over-employed, since it can hamper free trade and negate its benefits.

There is also the Melitz model which indicates how the exposure to trade will encourage only high-yielding firms to enter the export market (while some less productive firms continue to produce only for the domestic market) and will simultaneously force the least productive firms to exit. The model is also consistent with widely reported stories in the business press describing how the exposure to trade enhances the growth opportunities of some firms while simultaneously contributing to the downfall or downsizing of other firms in the same industry; similarly, protection from trade is often reported to shelter inefficient firms (Melitz, 2003).

The differential effect between trade (intra-regional and extra-regional) and economic growth is theoretically debatable. Studies (Harrison, 1996; Frankel & Romer, 1999; Jenish, 2013) have shown that trade improves economic growth while other findings also suggested that trade does not always have a higher impact on economic growth because of the country's size (Market size) and structural linkages between growth and trade patterns (Wooster et al., 2008; Younes, 2010; Jenish, 2013). An increase in trade can promote economic growth by enlightening knowledge and technology from the importation of high technology goods (Barro & Sala-i-Martin, 1997, Baldwin et al., 2005, Almeida & Fernandes, 2008) as cited in Zahonogo (2016). Intra-regional trade enables countries to move goods and services among

themselves through sources of renovation and promotes benefits from foreign direct investment. Extra-regional trade enables a bigger market size and enables countries to gain potential benefits of increasing returns to scale and economies of specialisation (Zahonogo, 2016).

According to the theoretical models used by Grossman and Helpman (1991), trade enhances the movement of new technologies enabling the technological progress and productivity upgrade. Using theoretical models, Grossman and Helpman (1991) indicated how trade improves transfer of new technology and ultimately improves productivity. This was based on the assumption that trade leads to incentives in the economy at low levels. In the short term, trade reduces misallocation of resources use, while it catalyzes technology transfer in the long run. Trade through trade liberalization may push governments to adopt economic reforms due to pressure arising from international competition. Sachs and Warner (1995) as well as Rajan and Zingales (2003) have noted that this promotes economic growth.

On the other hand, endogenous models on growth postulate varying levels of contributions to trade, depending on whether the effect of comparative advantage pushes economic resources towards activities that cause long-term growth or not. Moreover, some theories argue that financial or technological challenges may prevent developing countries from reaping expected benefits due to lack of social capability to adopt technologies. Hence, the effect of trade on growth varies depending on the level of economic development.

In some cases, trade can impede growth and reduce long-term growth in cases where the country has dynamic comparative advantages. Trade equally obstructs growth where avenues for technological creativity is limited. It is therefore advisable in such cases, to apply protection for part of the economy, to promote technological growth.

## 2.3 Economic Growth Theories

Theories of economic growth (growth) fundamentally concern themselves with the various factors that lead to economic growth in a nation based on models and processes over time.

The theories of economic growth ask questions about which factors can cause sustained growth; which factors pose challenges and which factors are most preferred. In analyzing growth theories (models) the outcomes are determined by the type of assumptions, context of trade-growth analysis and the nature of data (cross country or panel).

Growth is affected by a two-parameter production function with two traditional factors, labor and capital, and a non-traditional factor, namely 'useful work'. The non-traditional factor is derived from primary energy inputs multiplied by an empirically estimated average energy conversion efficiency, which is a function of changing technology over time (Warr & Ayres 2012).

Here again, the work of Smith (1776) served as a basis for economic growth. Smith (1776) argued that the division of labour in absolute cost advantage terms was key to economic growth. This stand was partially modified by other classical growth theorists such as Ricardo and Malthus. There was also the economic growth theory postulated by Marx based on developments in the relationship between the wealthy and the poor in history (Seretis & Tsaliki, 2016).

Another principal foundation of economic growth theory which is part of the neo-classical school is the exogenous growth theory. Also known as the Solow-Swan Model and postulated by Solow (1956). This theory argues that economic growth derives from exogenous factors of the production function. These factors include capital accumulation, labour and technological innovations. Still based on the free interaction of demand and supply, both Solow and Swan explain that a combination of factors of production will initially cause increasing returns,

followed by constant returns and ultimately diminishing returns. All these are assumed to occur in the short run. However, for growth to persist in the long run, there must be a positive change in savings, population and capital depreciation. While Solow and Swan contribute to the development of growth theory, they could not adequately explain the speed at which technology, knowledge, and information affects production (Barro & Sala-i-Martin, 1995). This leads us to another growth theory, the Endogenous Growth Theory.

Endogenous Growth Theory as explained by Romer (1986), argues that it is in the stock of human capital and technology that causes economic growth unlike the Solow-Swan Model the theory of Romer does not include diminishing returns to capital. In other words, a host country can experience growth in the long run through the employment of technology. Essentially, the endogenous growth theory explored the supply side of the relationship.

Harrod (1939) and Domar (1946) separately developed an economic growth theory that came out to be a similar growth models, which we now refer to as Harrod-Domar model (Van den Berg, 2013). Harrod-Domar theory is based on the Keynesian model of full employment and income theory in the short run (Van den Berg, 2013). In their attempt to analyze the long-term effects of factors that lead to economic growth, the Harrod-Domar theory outlines a comprehensive framework just like those of Ricardo and other authorities stress the essence of capital accumulation which also ties in with the analysis of Marx and other growth theorists. It is interesting to observe that the Harrod-Domar theory considers various scenarios of growth theory depending on the capital, output, income, and savings levels in production. For example, in a constant capital-output ratio if it assumed that the link between capital and output remain the same; hence increasing production. In the constant-income scenario, it is assumed that the level of savings is directly proportional to future production.

## 2.4 Review of Empirical Literature

### 2.4.1 Relationship between Trade and Growth

### 2.4.2 Trade and Growth in Selected Regions and Countries

While numerous studies have been conducted on the relationship between trade and growth, there is adequate evidence regarding the impact of trade and growth (Frankel & Romer, 1999). Various studies have indicated varying degrees of limited proof between the effect of trade on growth. Wooster et al. (2006) considered the different effects of intraregional and extra-regional trade on economic growth in 13 European countries using cross country time-series regressions. Wooster et al. (2006) took into account the fundamental effect of investment and population on trade in the selected countries.

Wooster et al. (2006) found that while both intraregional and extra-regional trade affected growth differently, the latter seemed to have a better marginal impact on growth. Using Granger causality tests to establish causality tests and standardized growth model with an emphasis on "trade intensity" they concluded that the effect of extra-regional trade on output per capital (growth) was higher than that of intraregional trade. Wooster et al. (2006) explained the difference in the impacts in terms of the larger market size, knowledge transfer, greater variety of countries and regional trade agreements under extra-regional trade. However, Wooster et al. (2006) discovered that trade did not induce growth in Finland and the United Kingdom.

The result of Wooster et al. (2006) is confirmed to a large extent by Kitavi (2014) who also conducted a time series regression using Ordinary Least Squares (OLS) over 10 years. Kitavi (2014) found that intraregional trade of countries in the East African Economic Community had a considerable effect on growth in both the short and long run. More specifically, Kitavi (2014) found both exports and imports indicated a significant and positive relationship with

Gross Domestic Product (GDP) in the long run. However, in the short run, only imports shared a positive and strong relationship with Gross Domestic Product (growth). Kitavi's (2014) research encouraged the East African Community to pursue an export-driven diversification strategy to improve economic growth. This is corroborated by Otinga (2009) who did a special study on the effect of foreign trade and growth in Kenya. He discovered that the effect of trade on growth was determined more by exports, followed by government expenditure and foreign aid rather than public and private investments (Otinga, 2009).

Another study that was conducted to test the results of Wooster et al. (2006) was done by Younes (2010) using the same methodology as Wooster et al. (2006). Younes (2010) found that between 1990-2007, the effect of extra-regional trade on growth in the selected thirteen (13) Arab countries was higher (17%) than that of intra-regional trade within the same period. However, it is interesting to observe that when Younes (2010) added Arab-EU trade to his model to estimate the difference in the contribution of the three kinds of the trade he found that intraregional trade rather had a higher effect (9%) on growth than extra-regional trade. Based on the findings of Wooster et al. (2006) and Younes (2010) it can be concluded that the effects of both intraregional and extra-regional trade on growth are mixed. Besides, the difference in the relative impacts of intraregional and extra-regional trade respectively in the Arab states depend on political instability, market size, nature of commodities and excessive intervention and insufficient knowledge capital (Younes, 2010).

Hoekman (2016) produced a policy paper on intraregional trade as a potential catalyst for growth in the Middle East and concluded that while this type of trade offers enormous potential for growth in the Middle East and Northern Africa (MENA) region, it has not been fully explored. Hoekman (2016) notes that regional cooperation in the region has been slow, thereby resulting in persistently higher trade cost and relatively higher non-tariff barriers. His paper further indicates that the finding of Younes (2010) revealed that intraregional trade impacted

trade in the part of the region is tenable. The positive effect of intraregional trade on growth in the MENA region has been delayed by trade barriers, lack of diversification strategies, inadequate investment and application of top-heavy structures for implementing trade agreement. The paper indicates clearly that the MENA region was operating far below its huge potential (Hoekman, 2016).

Previous literature contains interesting results on selected countries such as Nigeria, South Africa, India, and Ghana. These country studies corroborate previous literature in varying degrees. Olufemi (2018) explored the relationship between trade and growth in Nigeria using the Vector Error Correction Model (VECM) and standard Granger Causality and various tests (Augmented Dickey-Fuller Johansen Co-integration). Olufemi (2018) concluded that there was a unidirectional relationship between trade and growth for all the measurement models he used. His unique contribution to literature was proof that imports could also stimulate growth to a large extent in Nigeria (Olufemi, 2018). He explained that previous research on Nigeria had emphasized the role of exports in enhancing growth. This emphasis on the impact of export as a component of trade on growth was also stressed by Wooster et al. (2006) and Kitavi (2014).

Secondly, Olufemi (2018) and Mogoe (2013) investigated the effect of foreign trade on growth in South Africa. They also employed various measures and tests like co-integrated vector autoregression; Augmented Dickey-Fuller, Phillips-Perron Test, VECM, and Johansen Test) and found that all the variables (inflation, exports, exchange rate, and imports indicated) have unit root problems (Olufemi, 2018). Mogoe (2013) also found that there was a relationship between all the variables and Gross Domestic Product in the long-run. Furthermore, all the trade variables indicate a positive relationship with GDP except imports, a finding which corroborates some of the results of Olufemi (2018). It is observed that Mogoe (2013) includes

a novel trade variable (inflation) in their model. This is important as inflation is a major macro-economic indicator in the economy.

Joseph (2013), in a somewhat differentiated manner, examined the impact of trade on inclusive growth in India against the background of globalization. Focusing on trade liberalization, Joseph (2013) analyzed the trade channels with poverty, inequality, and growth and deduced that increased trade liberalization has not led to the expected improvement in income and reduction in poverty. Stated differently, the increase in trade figures did not cause inclusive growth. However, it can be argued that the improvement in trade has caused some level of growth; just that it is not inclusive. Since inclusive growth constitutes a core of the literature gap this research seeks to address, a detailed discussion is devoted to it in a latter section of the study.

### 2.5 International Trade and Growth in Sub-Saharan Africa

Relevant literature on the relationship between trade and growth in Sub-Saharan Africa is replete with certain pointers that will inform the relationship between trade and inclusive growth Africa. As far back as 1982, Ezenwe (1982) conducted a study on the relationship between trade and growth in West Africa. He observed that through the 1960s, the West African states demonstrated a higher growth rate than in the 1970s except for countries like Benin, Mali, Nigeria, and Niger. Based on this information, Ezenwe (1982) sought to study the trend in the relationship between trade and growth in the 1980s. Relying on largely secondary data, he examined the prospects for growth using trade in the 1980s and concluding that for trade to induce growth in West Africa within the period, West African countries have to contain internal problems such as political stability, the emigration of citizens to neighboring countries and effective implementation of trade policies. Besides, varying the exports these

countries put up for trade and improving generally low-income level, are likely to promote growth in the region. The external factors Ezenwe (1982) noted included fluctuating prices of exports, and limited trade protection by other countries or regions. Ezenwe (1982) also observed that the exports of the various countries in West Africa constituted products which affected to what extent proceeds from trade caused growth. He noted that West African countries who exported oil tended to have higher and more reliable GDP than those who relied on only traditional agro-based produce.

Several decades later, Iyoha and Okim (2017) carried out a study of the impact of trade on growth in Economic Community of West African States (ECOWAS) countries using panel data covering twenty-four (24) years. Using econometrics, Iyoha and Okim (2017) discovered that exports, exchange rates, and investments were major determinants of per capita real income (GDP). More especially, they found the correlation coefficient between trade (represented) by exports and growth (expressed in per capita income) to be + 0.714, a value presumed to signify that trade positively affects growth (Iyoha & Okim, 2017). It is interesting to note that the application of the proved Ordinary Least Squares (OLS) estimator explained further that a considerable percentage that is more than 75% of the positive increase in growth (per capita income) was induced by exports and foreign direct investment. Just like Iyoha and Okim (2017) and Ezenwe (1982), indicate that a variety of what constitutes exports in West African countries matters more than the volumes of what is exported. This could also possibly explain why higher cocoa prices in Ghana induced some growth in the short-run, but rather led to a decline in growth in the long-run because cocoa was not supported by other types of traditional exports.

Using the Analysis of Variance (ANOVA) technique, Ndife (2017) researched the effect of trade on growth in selected West African countries within the context of regional economic integration and treaties signed in the region. She found that trade-induced growth across the

countries virtually stagnated with very steady growth over the years (Ndife, 2017). Ndife (2017) also concluded that stable economic growth rate could also be partly due to the common economic policies of the selected countries in the West African Region. While it may not be bad that growth rates led by trade have been stable though significant, it still does not sufficiently establish an adequate relationship between trade and growth within the period. In all the studies reviewed so far steady increases in growth proxied by exports, imports, investment, inflation rate or exchange rate have indicated that there is a significant and positive relationship between trade and growth. However, Ndife's (2017) study seems to imply that trade has not induced growth, despite the numerous accords and regional economic integration policies adopted. In a nutshell, Ndife (2017) cannot conclude that trade-led growth was stagnant in West Africa and yet still mention that growth in the selected countries was stable within the period.

Zahonogo (2017) also investigated the relationship between trade and growth in Sub-Saharan African countries covering the period 1980 to 2012, a period of 32 years. Using a dynamic growth model together with the pooled mean group estimation method, he found that a 'trade threshold' exists below which increased trade benefits countries but above which it has negative effects on growth (Zahonogo, 2017). This finding could be said to be somewhat related to scale of returns in production economics. This concept indicates that various combinations of inputs initially lead to increasing returns in production up to a maximum point and then begin to decline. It is also worthy to note that Zahonogo (2017) confirms some previous studies which conclude that the relationship between trade and growth is not linear. He also recommended, just like Iyoha and Okim (2017) and Ezenwe (1982), that Sub-Saharan Africa countries should participate more effectively in trade by leveraging on imports reduction. The uniqueness of the study of Zahonogo (2017) lies in the fact that besides providing additional information on cross country studies, he considered both the direct

influence of trade on growth is achieved in the long run. These channels include governance, financial development, and education. It is observed that while Zahonogo (2017) did not seek to explore the relationship between trade and inclusive growth, the inclusion of education and to some extent governance bring aspects of inclusive growth to mind, as Frankel and Romer (1999) argued. This is because delving into how trade affects services such as education, health, and entrepreneurship (job creation) over a certain period suggests inclusive growth.

### 2.6 Empirical Literature - Trade and Inclusive Growth

As indicated in previous sections of the study, literature abounds on the relationship between trade and growth. On the other hand, there is little literature on the relationship between trade and inclusive growth. This section provides an overview of the limited research on the relationship between trade and inclusive growth and raises theoretical issues as and when necessary, as points for further discussion in the theoretical section. At the empirical level, the primary difference between trade and growth on the other resides in the definition or understanding of the term 'inclusive'. While this section does not delve too deep into the various meanings of inclusive growth available in the literature, it extracts the relevant elements caused by inclusive growth concerning specific empirical studies. Suffice it to the state for now that the need to ensure sustained meaningful growth over a reasonable period led to the need to champion the concept of inclusive growth. However, this has meant different things to various researchers at various times (Singh & Chaturvedi, 2010). As a result, it is worthy to note that while the copious literature on the linkage between trade and growth is not conclusive, it is the same manner in which empirical evidence on the relationship between trade and inclusive growth has been full of ambiguity (Singh & Chaturvedi, 2010; Goldberg & Pavcnik, 2007).

Singh and Chaturvedi (2010) tried to explain the relationship between trade and inclusive growth. While their study is not an empirical one, it is mentioned here because of what they considered as elements (constituents) of inclusive growth. They considered inclusive growth as giving opportunities to both workers (labour) and companies to participate in economic activities within and without the borders of the country (Singh & Chaturvedi, 2010). With reference to the concept of inclusive growth as outlined by international organisations such as World Bank, United Nations Conference on Trade and Development (UNCTAD), International Labour Organization (ILO), United Nations Development Programme (UNDP) and The United Nations Economic Commission for Latin America and the Caribbean (ECLAC), Singh and Chaturvedi (2010) explained that redistributing income and taxation alone do not constitute inclusive growth.

Singh and Chaturvedi (2010) further argue that while trade would offer opportunities for individuals and companies, inclusive growth depends on whether policies and institutions that exist in the domestic environment enable the two stakeholders to participate meaningfully. Stated differently, it is not enough to say this is inclusive growth when incomes increased and are redistributed but lead to some distortions in the economy thereby reducing gains made by labour and companies (Singh & Chaturvedi, 2010). Singh and Chaturvedi (2010) caution that inclusive growth goes beyond just trade and investment to include appropriate trade policy programs and ways facilitating trade, not putting an extra burden on labour and companies. By extension it implies labour should be able to move across industries and companies should be able to diversify with limited or no costs to put then in a worse position than before. While Singh and Chaturvedi (2010) do not have hard statistics to prove their point, they resort to numerous theoretical and international sources to substantiate their point, since they consider inclusive growth from both the labour (individual) and corporate (company) point of view.

Another interesting theoretical and empirical study into the relationship between trade and inclusive was done by Ngepah (2017). His study is unique, unlike Singh and Chaturvedi (2010), he focuses on Africa and reviews its potential for inclusive growth, based on what has happened in the past. Ngepah (2017) reviews available theoretical literature on the linkage between trade and inclusive growth in Africa, drawing on the meanings of the term as exposed by international organizations. Just like Singh and Chaturvedi (2010), Ngepah (2017) discusses inclusive growth as outlined by the World Bank, the Asian Development Bank (AsDB), the Organisation for Economic Co-operation and Development (OECD), the United Nations Development Programme (UNDP) and the African Development Bank (AfDB). Discussing their distinctive features, similarities, and weaknesses. While Ngepah (2017) argues that inclusive growth is not pro-poor growth, just like Singh and Chaturvedi (2010) did at a point he agrees that the two have similarities (Ngepah, 2017). Theoretically, to Ngepah (2017), inclusive growth includes Gender-Friendly growth, Ethnic-Friendly growth, and race friendly growth (Asian Development Bank Approach). Besides, inclusive growth to the World Bank means pro-poor growth: increasing productivity in certain sectors and including individuals who were hitherto, excluded from enjoying growth. Ngepah (2017) stressed the major four core areas of inclusive growth, based on the African Development Bank's Concept social, economic, spatial, and political. The political pillar here could be designated as governance.

One observes certain similarities among the approaches employed regarding the components of inclusive growth. While the Asian Development Bank Approach shares similar views with the World Bank approach, the former stresses race, gender, and ethnic-friendly growth. Similarly, the African Development Bank approach shares similar strands with the World Bank Approach, but the former emphasizes more than pro-poor growth, to include all sectors of the economy (Ngepah, 2017). Empirically, Ngepah (2017) concluded that the relationship between trade and inclusive growth was mixed, just as Singh and Chaturvedi (2010) had observed. On

the whole, Ngepah (2017) obtained five cases where the relationship was negative while another four cases were positive. The details of the frameworks Ngepah (2017) employed, based on the approach outlined above are considered in another section of this chapter. Ngepah (2017) contributed to the existing literature by doing a review of both the relationship bases and empirical evidence of the relationship between trade and inclusive growth in Africa. Though he shed some light on the similarities and differences in the approaches, he did not provide detailed percentages or related statistics to buttress his claim. Besides, his review of empirical evidence on the relationship between trade and inclusive growth was rather to brief (Ngepah, 2017).

The study of Ali and Son (2007) is considered in this sub-section because though it has a theoretical foundation, it applies these to investigate the relationship between trade and inclusive growth in the Philippines. Ali and Son (2007) stressed that growth was not in itself an adequate condition to bring about equal opportunities and benefits. In other words, they agreed along with their writers on trade and growth that inclusive growth was what mattered. Hence, using the concept of social opportunity function, Ali and Son (2007) investigated the extent to which the Filipino people had increased access to equal opportunities in education and health. Using an opportunity index to do their rankings, Ali and Son (2007) discovered that increased trade between the Philippines and the outside world generally contributed to inclusive growth with some differential across certain regions. In the case of health services, for example, Ali and Son (2007) observed that building more public hospitals using the income from trade gains ultimately led to increased access to health services by the poor or less privileged in most regions in the Philippines. These findings confirm somewhat the notion that inclusive growth and pro-poor growth meet at a point because it is less likely for the rich in society to stop attending private hospitals to attend public hospitals. However, Ali and Son (2017) did similar positive results regarding access to equal opportunities in primary and

secondary education. These were cases in some regions where access to education fell slightly over the years. It must be noted that Ali and Son (2007) employed average figures for both access to education and health services and measured changes in the two at points in time and overtime.

The review now focuses on empirical evidence on the relationship between trade and inclusive growth based on surveys conducted by notable international institutions such as the World Bank, African Development Bank (AfDB), the Asian Development Bank (AsDB), the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), and United Nations Conference on Trade and Development (UNCTAD). The reports of the international reputable organizations cited above are considered as appropriate in the light of the dearth of literature on the relationship between trade and Inclusive growth by individual researches. Secondly, these organizations have played very active roles in championing trade and growth across the World, working together with governments and other organizations. The findings in these reports are reviewed within the context of the limited empirical evidence extracted from journal articles.

### 2.7 Trade and Inclusive Growth – Empirical Evidence from Service Providers

Most of the available literature on the relationship between trade and inclusive growth from the perspective of service providers tended to be theoretical in that they consider how the relationship could be measured; they do not in most cases support their methodology with exhaustive empirical evidence. Key ones are examined here in light of their limitations.

An IMF working paper by Anand et al. (2013) proposed a unified measure of inclusive growth to be used for emerging economies. This was done by an integration of the countries' economic growth and income distribution outcomes, spanning 30years. Using the microeconomic

concept of the social mobility function at the national level, in their opinion, was similar to the definition of pro-poor growth. It is worthy to note that the concept of the social mobility function was also used by Ali and Son (2007) in their paper on how to measure inclusive growth. Anand et al. (2013) concluded that for trade to cause inclusive growth, it must catalyze stability at the macroeconomic level, improve on human capital and lead to structural changes, all of which reduce inequality. However, they observed that financial deepening and changes in technology had a negligible effect on inclusive growth. The definition of inclusive growth by Anand et al. (2013) is the absolute type, in that they regard growth as pro-poor once people in this category improve their living standards in absolute terms. They explain further that in relative terms, growth was pro-poor only if the living standards of the poor improved faster than that of the population as a whole. Their explanation implies that the rate at which poor people benefit from trade should be higher than that of the rich or slightly better off according to the relative definition of pro-poor growth. However, one wonders whether overall, the rate at which the living standards of the rich improve would not outdo improvement in the living standard of the pro-poor.

Anand et al. (2013) stated categorically that they measure inclusive growth in terms of the pace of growth as well as the distribution of growth, a notion which was also used by Ali and Son (2007). By the pace of growth, Anand et al. (2013) are referring to the rate; which distribution refers to how widely spread the growth is. Hence, essentially, Anand et al. (2013) made the effort to bridge the gap between measuring growth and equity separately. More specifically, they propose a unified measure of inclusive growth at the macroeconomic level. Besides, they employ their methodology (measure) to study the determinants and dynamics of inclusive growth in emerging economies and pro-poor countries. Finally, Anand et al. (2013) also explore the relationship between inclusive growth, macroeconomic stability, and structural change. They cited some real-life examples to buttress their point. Anand et al. (2013) consider

growth as necessary for inclusive growth. They explain this using a range of inclusive growth in the sense of a pure one as in the case of China (at one end) and zero income growth but a better distribution, as in the case of Kenya. However, India for example lies in between.

However, it is interesting to note China, through inclusive growth everybody benefitted, the rich become even richer thereby negating the absolute meaning of pro-poor growth while inclusive growth had occurred in emerging economies such as Brazil, Mexico, Malaysia, and Thailand, it has not seen fast enough to benefit everybody. Now the question is whether growth can benefit the entire population equally. The study of Ali and Son (2017) indicates that this is not possible for even the same region in a country.

In a working paper submitted to the overseas development institute, Higgins and Prowse (2010) examined the connection between trade, poverty, and growth through aid. Being part of a programme entitled 'Aid for Trade: Promoting Inclusive Growth and Poverty Reduction' Higgins & Prowse (2010) stress the role of aid for trade as a way of reversing the adverse effects of previous decades. They see aid as a vehicle that will help to develop to benefit more from trade rather than suffer negative consequences. Deriving their concept from the World Trade Organisation (WTO) framework, Higgins & Prowse (2010) observe that aid for the trade would reduce trade-related risks in developing countries. However, the limited empirical evidence they provide is mixed in that the relationship between trade, growth, and poverty is not very clear. Hence, it was critical to examine the channels through which trade impacted poverty. Higgins and Prowse (2010) dwell on McCulloch et al. (2001) to show that the major channels through which trade can affect poverty positively are the distribution channel, enterprise channel and the government channel. Distribution relates to changes in prices of commodities the enterprise mode refers to changes in the wages and profits while the government aspect concerns changes in taxes and transfer. Finally, Higgins and Prowse (2010) indicate several factors that determine the extent to which trade induced growth via aid can

reduce poverty. These include location, access to markets at domestic and international levels, decision–making and demographic characteristics of households. These also come-up against the political, economic, types of goods and services available and persisting levels of poverty and inequality. From the analysis of Higgins and Prowse (2010) can be inferred that the issue of trade–induced growth causing a reduction in poverty is not simple especially within the context of globalization. Besides, their stress on poverty reduction contributes to the requirements for inclusive growth in developing regions, including Sub-Saharan Africa.

Just like the working paper of Higgins and Prowse (2010), a report commissioned by collaboration among the International Monetary Fund (IMF), World Bank and World Trade Organisation (WTO) underlined the mixed blessing nature of international trade for growth, especially in developing countries. The report stressed the need for policies to mitigate risks associated with the trade. Besides, while trade has contributed immensely to increased productivity, reduced prices, increased competition and improved standards of living in general, it has adversely affected segments of groups in some regions and countries. Trade shocks, state of the economy, labour market characteristics and the nature of social protection policies have contributed to widening the poverty gap. Just like Higgins and Prowse (2010), the report of the collaboration also mentioned the role of the World Trade Organization (WTO) framework as one of the ways of cushioning the dislocation that trade visits in developing economies. For example, they cite the World Trade Organization (WTO) dispute settlement role which has tried to bring sanity to international and protect budding economies from being exploited. In a nutshell, the combined report asserts that the extent to which trade causes growth depends more on country characteristics and policies to support trade.

The World Bank Report (2017) which places a special focus on sustainable development and inclusive growth mentions success stories regarding improving the trade environment and reducing the costs of trade in developing countries. The key among the intervention was

expanding financial services to the vulnerable, increasing access to education and health as well as increasing awareness of the environment. The World Bank report (World Bank, 2017) indicated that though Africa had attained some economic growth and reduction in poverty, the future was somewhat bleak. Just like Higgins and Prowse (2010) as well as the combined report observed, the World Bank report (World Bank, 2017) mentioned some of the factors underlying the fragile state of growth as protectionism, tight global financial risks to the domestic economy and fluctuating commodity prices. Hence, the report also stressed the need to employ some policies to alleviate the effects of trade and domestic policies on economic growth in Africa.

### 2.8 African Trade Agreements and Inclusive Growth

This section contains an overview of the effect of African Trade Agreements mainly on trade and inclusive growth. This is because the major strands of literature examined the relationship between Regional Trade Agreements (RTAs) and trade but did not specifically discuss how the improvement in trade contributed to inclusive growth (Flatto, 2007; Ngepah & Udeagha, 2018; Jemma & Magani, 2015; Brenton et al., 2011; Arizala, Bellon & MacDonald, 2019; De Melo, 2013). The literature indicates that RTAs have mixed effects on African Trade in general and Sub-Saharan African Trade in particular and the effects of RTAs on trade varies with time.

The latest trade agreement among African countries, known as the African Continental Free Trade Agreement (AFCFTA) was made in March 2018. Before this, there had been several trade treaties including the Abuja Treaty of 1991. The general objectives of the AFCFTA include creating a single market for goods, services, facilitated by movement of persons in order to deepen the economic integration of the African continent, create a liberalized market for goods and services through successive rounds of negotiation, and contribute to the

movement of capital and natural persons and facilitate investments. The rest are to lay foundation for the establishment of a continental Customs Union at the later stage; promote and attain sustainable and inclusive socio-economic development, gender equality and structural transformation of the state parties; enhance the competitiveness of the economies of state parties and promote industrial development through diversification and regional value chain development, agricultural development and food security. The agreement covers trade in services, investment, intellectual property rights, and competitive policy.

According to Jemma and Magani (2015), the AFCFTA seeks to merge existing regional objectives into a single entry. Hence, it includes the Common Market of Eastern and Southern Africa (COMESA), Eastern African Community (EAC), South African Development Community (SADC) and West African Economic and Monetary Union (WAEMU). However, they indicate that some have criticized the agreement as being over-ambitious. Besides, there was the possibility that since Regional Trade Agreements (RTAs) did not work, there was no way the continental one was going to be effective. Just like the proponents of the AFCFTA, Jemma and Magani (2015) argue that the new agreement will consolidate gains made by the regional blocks.

The benefits of the new agreement include creating the momentum for developing similar structures in member states, developing the desire to maintain and increase economic growth, having the impetus to increase investment across infrastructure on the continent. Moreover, industrial growth and development are likely to follow from a wider market and infrastructure as jobs are created and African economies are diversified. Also, smaller countries are likely to gain from favorable spillover effects from larger countries. However, Jemma and Magani (2015) caution that a lack of political will and readiness to correct mistakes along the experiential curve may negatively affect gains in African trade. Just like De Melo (2013) and Jemma and Magani (2015) and contends that RTAs have contributed immensely to trade

creation in Africa and holds huge potential, but requires some work. According to De Melo (2013) RTAs serve as a one-stop system that encompasses economic, cultural, and political objectives. He considers political will and high trade barriers as major obstacles to total integration in Sub-Saharan Africa. It is worthy to indicate that whereas Jemma and Magani (2015) do not link the effect of RTAs on trade to growth, De Melo (2013) attempts to establish a relationship among the three variables. He argues that trade, investment, and growth increases as a result of RTAs which contribute to reducing protection levels. Though the results obtained so far are mixed and therefore inconclusive, comparison of the relevant figures before and after RTAs signed indicate some increased level of growth due to increased trade among countries in a designated trade area. For example, statistics confirm that growth increased in the Pan-Arab Free Trade Area (PAFTA) and the South African Development Community (SADC) following the establishment of RTAs (De Melo & Tsikata, 2013). De Melo (2013) also explains that gravity models attest to the fact that RTAs induce some level of growth due to an increase in trading activity.

De Melo (2013) explains the tendency for countries not to trade with one another in terms of distance, geography, diversity of products, high no-tariff barriers, and possible trade diversion. He concludes with the concept of opportunity cost, explaining that increasing extra-regional trade is usually done at the expense of intraregional trade. De Melo (2013). Therefore, it appeals to international institutions such as WTO, UNCTAD to co-operate with governments in developing countries to enable the latter to participate in the trade as well as implement strategies to alleviate shocks deriving from global shifts.

Brenton et al. (2011) verified studies of De Melo (2013) as well as Jemma and Magani (2015) they commend the proliferation of RTAs in Africa but caution that there is the need to have some policies in place to secure the positive effects of trade. Brenton et al. (2011) stressed that African RTAs should encourage member countries to be disciplined (political will) as well as

remove non-tariff barriers and work more towards integration in the future. Besides, the countries should have a platform for the exchange of experiences and reforms. The weaknesses here relate to not indicating clearly how trade impacts growth through RTAs.

It is interesting to note that Arizala et al. (2019) seem to be more optimistic than Jemma and Magani (2015) regarding the role of RTAs in enhancing trade in Africa. They contend that trade in Africa has been rapid and steady. More specifically, they argue that Sub-Saharan Africa is much more integrated than it used to be, compared to similar developing and emerging market economies (Arizala et al. 2019). On the brighter side, Arizala et al. (2019) explain that the AFCFTA would bring about greater spillovers since faster-growing economies are likely to pull along the slower areas. Using figures to support their claiming Arizala et al. (2019) indicate that SADC alone accounted for about 70% of trade in Sub-Saharan Africa. Similarly, WAEMU accounted for about 50% of the entire volume of trade in Sub-Saharan Africa. However, Arizala et al. (2019) also caution that there was the need for strong mediation by banks, technology by service providers and element fiscal policy. Besides, they observe, and sadly too that the bulk of intraregional trade was rather highly concentrated among a few members.

Flatto (2007) also assessed the effectiveness of RTAs on trade in Africa. He was of the view that member countries who sign RTAs do not benefit from them as expected thereby affecting projected economic growth rates. He explained this in terms of the developed countries not paying enough attention to the concerns of developing nations, including African Countries (Jemma & Magani, 2015; Arizala et al. 2019). Jemma and Magani (2015) and Flatto (2007) estimated the economic effects of RTAs are limited and often questionable. Flatto (2007) cites some challenges such as the discriminatory nature of some of the agreements the multiple memberships of certain countries on regional trade blocs and the trade-off between globalizing and regionalizing (Flatto, 2007). Tracing RTAs to the history of trade in Africa, he points out

the challenges of political instability and low costs of products from countries with larger markets. However, while (Flatto, 2007) corroborates existing literature, he does not establish the linkage between RTAs trade and growth.

Using panel data covering 1995 to 2014 and the gravity model, Ngepah and Udeagha (2018) found that RTAs increased trade to a limited extent. However, they observed that the benefits tended to reduce overtime in the East African Community. They also established that the forgone alternative concept did not hold, in that trade gains of intraregional trade was not achieved at the expense of extra-regional trade.

## 2.9 Models of Inclusive Growth

This section of the study does an overview of the various models which have been used to measure inclusive growth arising out of the trade.

Ali and Son (2007) describe inclusive growth as growth that increases the social opportunity function. Based on the social mobility concept, Ali and Son (2007) explain that the social opportunity function depends on two functions: average opportunities available to the community and these opportunities are shared among the population. Ali and Son (2007) further explained that inclusive growth can be captured by an opportunity curve which has a one to one relationship with social opportunity function. In other words, growth is inclusive if the poor get less poor with time. However, the model of Ali and Son (2007) has the weakness of only obtaining partial rankings. To resolve the problem, they designed an opportunity index to enable complete ranking. They tested the model on the Philippines and observed that inclusive growth within selected regions in the same country has a wide variation in terms of education, health, and other services. Hence, Ali and Son (2007) concluded that growth in itself

is not a sufficient condition for poverty reduction. It has to be sustainable over time and increase employment as well to be inclusive.

While the model of Ali and Son (2007) attempts to capture inclusive growth based on various definitions (Anand et al., 2013; Higgins & Prowse, 2010; McCulloch et al., 2001; Ianchovichina and Lundstrom, 2009), one wonders whether opportunities for growth can affect every member of the population equally. Ali and Zhuang (2007) tackle this defect in their model of inclusive growth. Though Ali and Zhuang (2007) begin with the basic premises of Ali and Son (2007), they have different conclusions and go into details than the latter. Ali & Zhuang (2007) describe inclusive growth as comprising the creation of opportunities as well as ensuring that everybody has equal access to the created opportunities. In single terms, Ali and Zhuang (2007) conceive of inclusive growth as growth with equal opportunities. What readily comes to mind is the equal access by all which rear its head in Ali and Son (2007) argument. However, Ali and Zhuang (2007) explain that individual circumstances should be distinguished from individual efforts. In other words, a person's inability to benefit from opportunities due to their religion, perception of services, etc. should not be affected by the skills and work experience they have acquired. In other words, Ali and Zhuang (2007) are saying that people have equal access to opportunities in light of the effort they put in. Besides, the fact that society has certain challenges does not mean persons cannot enjoy opportunities. However, just like Roemer (2006), Ali and Zhuang (2007) indicate that people can control their efforts but cannot control circumstances.

Just like Ali and Son (2007) and Ali and Zhuang (2007) expose the need for inclusive growth not to only stress on income redistribution but more for increasing employment. In conclusion, Ali and Zhuang (2007) mention the major policy component of inclusive growth as

- High and sustainable growth

- Social inclusion
- Capacities
- Social safety needs

In a paper for the World Bank, Anand et al. (2013) designed a unified measure of inclusive growth for emerging economies by integrating their economic growth performance and income distribution outcomes. It is interesting to note that, just like Ali and Son (2007) Anand et al. (2013) apply the microeconomic concept of social mobility function. This concept according to them is close to the absolute definition of pro-poor growth. The absolute definition stresses improvement in the living condition of only the poor, with the exclusion of the rich.

Anand et al. (2013) argue that their approach serves as a dynamic measure which stresses inequality as well as distinguishes between countries where per capita income was the same for top and bottom strata thereby, explaining the 'pace' of growth as well. The idea of the pace or rate of change of growth as it may be called could be said to be innovative in the part of Anand et al. (2013) in that, just like Ali and Son (2007) observed in the test of the Philippines, inclusive growth will vary even within the same region and continue to change as various factors that influence it also change. That is why Anand et al. (2013) talk about degrees of inclusive growth, which depends on the extent to which the curve increases and how the distribution change. The empirical results of Anand et al. (2013) indicate that macroeconomic stability, human capital and structural changes are essential towards the achievement of inclusive growth (Ali & Zhuang, 2007).

Singh and Chaturvedi (2010) define inclusive growth as a long term sustained growth with productivity and employment. This definition coincides with that of Ali and Zhuang (2007). Similarly, Singh and Chaturvedi (2010) also stress that pro-poor growth is not necessarily inclusive (Ali & Zhuang, 2007). Moreover, like Ali and Zhuang (2007), Singh and Chaturvedi

(2010) consider inclusive growth as one that comes with equity. It is also important to emphasize that the notion of inclusive growth as espoused by Singh and Chaturvedi (2010) derive from the AsDB definition. Singh and Chaturvedi (2010) also stress productive employment rather than income distribution, an aspect of the inclusive growth concept (Ali & Son, 2007; Ianchovichina & Lundstrom, 2013). It must be mentioned that Singh and Chaturvedi (2010) also review the definitions of other international organizations to buttress their viewpoint. One particular example is that of the UNDP which describes inclusive growth as the contribution of firms to human development by way of including the poor in the value chain as either households or firms.

The concept of inclusive growth is further explained by Kamel (2013) as cited in Singh and Chaturvedi (2010) as the relationship between growth, poverty, and inequality in society. Stated differently, it can be said that sustained growth that culminates in reducing poverty and inequality to a large extent over time is inclusive growth.

According to Khan et al. (2016), equal opportunity is the essence of inclusive growth. They enumerate the component of inclusive growth as;

- Creation of employment
- Creation of other developmental opportunities through rapid growth
- Promotion of social justice
- Sharing of proceeds of growth equally through reducing/eliminating inequality of opportunities

Just like Singh and Chaturvedi (2010), Khan et al. (2010) used the methodology developed by AsDB (weights and scores as indicators) into a unified Inclusive Growth Index (IGI). They apply Principal Component Analysis (PCA) to reduce key elements of inclusive into a single measurement unit. The major components include growth, inequality, accessibility, and

governance. More especially, these major strands of inclusive growth are expressed as core pillars of inclusive growth:

- Growth employment and infrastructure
- Inequality, Poverty and General Equity
- Accessibility
- Social protection and governance

It is readily observed that these major strands or pillars of inclusive growth are very much similar to the ones expressed in the UNDP definition of inclusive growth. It may also be of interest to stress how they both emphasize human development and therefore elicit the possibility of measuring human development. This is because sustained growth with a far-reaching change in the various facets of society ultimately leads to development.

In a contribution to the debate on inclusive growth, Mitra (2017) observes that the measures of the concept are as many as its definition. According to Mitra (2017), some measures are fraught with drawbacks in that they are unable to account for differences in growth even within regions of the same country. Specifically, reviewing the model of Ali and Son (2007), Mitra (2017) partitioned segments of the income group into 'blocks' and analyzed varying income strata. This concept of partitioning the income segments into blocks reminds me of the notion that Anand et al. (2013) introduced in their model of inclusive growth, which they referred to as the rate of change of growth along curves. Similarly, Mitra's (2017) argument is valid in that Ali and Son (2017) also observed that even in the same region or province in the Philippines survey, there were varying degrees of access to health and education as well as how the health and education were spread.

As mentioned early on, there has been the contribution of some international organizations to the debate on the relationship between trade and inclusive growth. In this direction, the World

Bank's (2011) definition of inclusive growth is deemed relevant and important. It considers inclusive growth as 'shared prosperity' regarding the bottom 40% of the population. The World Bank (2011) does not stress so much on the need for a particular definition, but rather concern itself with what characteristics inclusive growth should have. Hence, just like Ali and Zhuang (2007) proposed, the World Bank enumerates the following as describing inclusive growth:

- Poverty is reduced
- Inequality is reduced
- Unemployment is reduced
- When Equal opportunities are provided to all

**2.10 Determinants of Inclusive Growth**

The concept of Inclusive Growth has been wide and varied researched coupled with various attempts to test it (Ali & Son, 2007; Anand et al., 2013; Singh & Chaturvedi, 2016; Ngepah, 2018; Khan, 2012; McKinley, 2010). In all these attempts, the authorities have tried to list what they consider as the determinants or key factors that should be present for inclusive growth to occur. Indeed, aspects of the discussion even dovetail into economic development (McKinley, 2010).

Ali and Son (2007) and the Asian Development Bank (2007) consider opportunities as the core determinant of inclusive growth. The most important thing about the opportunities is how to ensure that it is more evenly and widely spread among the population. AsDB understanding seems idealistic because they employ the phrase 'to all'. However, their use of the term 'available' also connotes that it will be up to the individual or community to exploit the opportunities available. Moreover, the AsDB conception goes as far as stressing the need to make growth gender-friendly, race friendly and ethnicity-related. This means that no individual

should be discriminated against as a result of their gender, race or ethnic origin. This implies that even if there is some growth and these elements do not reflect in their society, inclusive growth has not occurred, the GDP may rise to the highest, but inclusive growth will still be a mirage.

Anand et al. (2013) on their part delve into other dimensions using the composite comprehensive model. They indicated the determinants of inclusive growth as macroeconomic stability, human capital, financial deepening, and technology. Anand et al. (2013) found that the role of financial deepening and technology was negligible. However, that would have been the case of a particular context because increasing funding and improving technology can ripple effects on the economy. It is to note that the human capital aspect referred to by Anand et al. (2013) describes various ways of educating and equipping populations, especially the workforce with requisite skills and knowledge to contribute productivity. Extending this implication to Ali and Son (2007), they tested for increasing opportunities in education, health and sanitation and also tested the number of people who had increasing access. In basic economics terms, equipping humans with such knowledge renders them capable to work for themselves and society.

Singh and Chaturvedi (2016) consider the determinants of inclusive growth from three perspectives; trade policy, trade facilitation and Foreign Direct Investment (FDI). Hence, they discuss the issue solely from the perspective of trade openness. The FDI component of Singh and Chaturvedi (2016) could be said to refute the finding of Anand et al. (2013) in that the former implies that when funds from foreign countries are prudently employed, it could lead to inclusive growth. Out of the three determinants discussed by Singh and Chaturvedi (2016), it is realized that trade policy and trade facilitation depend heavily on government institutions and their relationship with trade partners.

In a review of attempts by some authorities and international organizations to champion and measure of inclusive growth, Ngepah (2018) notes that the United Nations Development Program (UNDP) description/understanding of inclusive growth hinges heavily on the greater distribution of opportunities to increasing poor people across sectors, regions and less employed factors of production. Hence the similarity, with Ali and Son (2007) as well as AsDB understanding is clear. Another perspective of the determinants of inclusive which Ngepah (2018) considers that of the African Development Bank (AfDB). In simple terms, the key factors are economic, social, spatial and political. In other words, income should increase and be more widely spread programs which provide for social safety nets (McKinley, 2010) should be available; actual regions hitherto suffering poverty should have better-living conditions and finally, there should be good governance and reduced corruption (McKinley, 2010; Ngepah, 2017). Just like Ali and Son (2007) as well as Singh and Chaturvedi (2016), Khan et al. (2012) perceived equality of opportunity as the essence of inclusive growth. Khan et al. (2012) also mentioned social justice and the distributing of growth proceeds equally. They were also guided by the Asian Development Bank Indicators. Just like Anand et al. (2013), Khan et al. (2012) found out, based on the survey they conducted in Pakistan, that macro-economic stability and financial deepening in society enhanced inclusive growth.

McKinley (2010) has also attempted a bold and comprehensive approach to measuring inclusive growth. He prepared a composite index to be used at the country level. This index reflects most of the determinants that have surfaced in the literature. The broad areas include growth, productive employment and, economic infrastructure; income poverty and equity, human capability and social protection.

While one wonders how growth could serve as a determinant of inclusive growth could be explained by the means-end concept in economics. In other words, growth that initially serves as a means later becomes an end. Hence growth has to be sustained for inclusive growth to

occur (Ali & Son, 2007). It implies the various determinants cited above must be seen to be making steady progress in the society for inclusive growth to happen. It is worthy to mention that the elements indicated as criteria were largely employed by the Asian Development Bank in their research. The Asian Development Bank (AsDB) proposed a more comprehensive framework that indicated key determinants of inclusive growth. Altogether these factors were broken down into 35 measurable items (AsDB, 2014). In broad terms, the factors included income, economic growth, and employment (McKinley, 2010) access and inputs to health and education, access to basic infrastructure(utilities), gender equality and opportunity as well as key infrastructure endowment and good governance. It is readily observed that it is Mckinley's framework that was further expanded to understand what factors indicate inclusive growth (McKinley, 2010; AsDB, 2014). It is observed that if for nothing at all, the role of education and health, apart from income, are crucial determinants of inclusive.

In the efforts to select the appropriate approach to measure inclusive growth, the study also looked at the Human Development Index (HDI). Developed by the United Nations Development Program (UNDP), the HDI is a summary measure of the average achievement in principal dimensions of human development which would translate into inclusive growth. Created to reduce the lacuna in using growth alone in assessing the economic progress of a country or region, the HDI covers various capabilities that should be affected positively for society to ultimately develop.

The ultimate development is heavily embedded in sustained inclusive growth as corroborated by Ali and Son (2007), Anand et al. (2013), Khan et al. (2012) as well as Singh and Chaturvedi (2016). The key dimensions considered by the HDI are a long and healthy life, state of being knowledgeable and maintaining a decent standard of living. In broader terms, these dimensions reflect or are determined by access to health services, good sanitation, having the capacity to improve oneself through formal/informal education and other forms of training, earning a

progressively increasing income which improves one life over time. While the HDI is simpler than the framework of inclusive growth indicators developed by the AsDB (2014) it reflects the core determinants for inclusive growth.

### 2.11 Determinants of Trade

Determinants of trade refer to all the components of trade which would have varying effects on economic growth and the economy. Tahir et al. (2018) cite investment (both human and physical capital), per capita GDP, labour force size, and foreign exchange as major determinants of trade. While investment and per capita GDP affected trade positively, labour force size and foreign exchange affected trade negatively. However, the literature is mixed regarding how the respective determinants affect trade and go on to impact growth. Yaghoob et al. (2011) found that determinants of trade included GDP of trading partners, exchange rate, the population of the country making exports as well as distance and border between trading partners. Yaghoob et al. (2011) stressed that while the determinants were varied and broad, not all of them would apply to a particular country or region. For example, in their study of Islamic countries, Yaghoob et al. (2011) observed that the level of transportation costs, currency depreciation (exchange rate), and higher exports were very critical in determining trade flows to the host countries. Just like Frankel and Romer (1999), Yaghoob et al. (2011) considered the determinants from the gravity model point of view. Frankel and Romer (1999) described the determinants of trade as a distance of host country from other countries, the proximity of host country to other countries, country size, and population as well as the volume of trade among countries in a region.

Rose (2019) has recently concentrated on monetary unions as a key determinant of trade. In his opinion, such a union enhances trade among countries and ultimately remove another key

determinant as well as a barrier to trade. His argument is corroborated by Tahir et al. (2018) who observed that the exchange rate affect trade negatively. It is worthy to note that Rose (2019) also applied the bilateral 'gravity' model of trade.

Just like Frankel and Romer (1999), Rose (2019) observed that the model was deemed appropriate for only cross-sectional studies. To overcome this challenge Glick and Rose (2001) used panel series data covering 200 countries over 50 years to test the effect of currency unions on trade. They discovered that countries who left the unions suffered a sharp decline in their trade volumes where the ones who joined experienced increases in trade.

Hoekman (2016), in a study of countries in the Middle East and North Africa (MENA) region, concluded that trade performance depended on factors such as exchange rate, trade costs, investment, political stability, trade policy, trade facilitation, and a weak economy. It is worthy to note that also spread in the literature are other determinants such as inflation, technology, human capacity financial crises, external debt (Zahonogo, 2017; Ndife 2017).

### 2.12 Barriers to Free Flow of Trade

Barriers to trade comprise all the factors that host countries as well as foreign countries, do to inhibit the free flow of trade. Iyoha and Okim (2017) note that the narrow production/export base, high trade costs, tariff and non-tariff barriers, limited access to foreign markets, and low volume of exports constitute some factors that prevent free trade in ECOWAS. Zahonogo (2017), on his part, mentioned low investment in human capital, inadequately developed financial system and low levels of technology as factors that could prevent the free flow of trade. Just like Iyoha and Okim (2017) observed that, Lee and Swagel (1994) also identify both tariff and non-tariff barriers to free trade. The latter comprises exchange rate controls, protection of infant or strategically important industries and import substitution.

Lee and Swagel (1994) explored the barriers to trade using the political economy perspective for analysis. Their results are confirmed by Engel et al. (2013) who listed the lack of implementation of regional trade agreements, inadequate commitment between public and private sectors, the disproportionately domineering role of anti-reform associations and lack of cooperatives on the part of farmers.

Hoekman (2016) has also contributed to the barriers confronting free trade. He observed that countries in the MENA region demonstrated government dominance of the economy, mismanagement of the exchange rate, subsidies, barriers to trade, high trade costs, and poor regulatory frameworks. He stressed that such barriers negatively affected the real gains which these countries hope to gain from trade.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

This chapter introduced the model specification and the econometric techniques employed to analyze the data for the study. It then goes on to provide data sources and variable description, thus, the dependent and the independent variables. The chapter also provided a general overview of the panel data estimation technique together with very important post estimation checks.

## 3.2 Model Specification

In the course of the study, the traditional production function was used to explain the relationship between economic/inclusive growth and trade. This function has formed the basis for explaining the economic growth and its determinants. The approach based on the neo-classical model of Solow (1956) identifies the channels through which macroeconomic variables affect economic growth. The neo-classical model assumes that total output at any given time $Y_t$ depends on the quality and quantity of physical capital, quantity of labour and average level of skills of the labour force. Following Knight, Loayza and Villanueva (1993), we note that apart from the above factors, other factors such as exogenous technological advancements, absorbed through import of capital goods, the degree of openness of the economy and the level of fixed investment undertaken by governments are important determinants of economic growth. In this regard, we specify a general production function as follows:

$$Y_t = F\ (K_t, L_t, H_t, A_t) \qquad (1)$$

where $Y_t$ is inclusive growth

$K$ physical capital

$L$ labour

$H$ human capital and reflects the educational level of the workforce as well as its health status

$A$ overall efficiency factor. It includes the level of technology, and the quality of government management of the economy.

Following Knight et al., (1993) taking total differential of equation (1)

$$\frac{Y^*}{Y} = y_1\left(\frac{K^*}{K}\right) + y_2\left(\frac{L^*}{L}\right) + y_3\left(\frac{H^*}{H}\right) + y_4\left(\frac{A^*}{A}\right) \quad (2)$$

Equation (2) suggests that economic growth was a linear function of the growth rate of capital, labour, human capital and level of efficiency.

Labour $(L_t)$ is assumed to grow according to the following function.

$$L_t = L_o e^{nt} \quad (3)$$

$L_0$ is the base level of labour force and $n$ is the growth rate of labour force.

The efficiency factor $(A_t)$ can be expressed as a function of degree of openness of the domestic economy $(F)$, and the level of fixed investment in the economy while $p$ is population.

$$A_t = A_0 e^{gt} F^{\theta_f} p^{\theta_p} \quad (4)$$

$\theta_p$ is the growth rate of government fixed investment

$\theta_f$ is the rate of change of openness

$gt$ is the growth rate over time

Noting that physical and human capital are functions of levels of national savings

hence

$$\frac{\partial K_t}{\partial t} = s_t Y_t - \partial K_t \qquad (5)$$

and

$$\frac{\partial H_t}{\partial t} = s_h Y_t - \partial H_t \qquad (6)$$

note that:

$$\frac{H^*}{H} = \frac{\partial H_t}{\partial t} = s_h Y_t - \partial H_t = S_h^*$$

Meaning that the growth rate of human capital is a linear function of the growth rate of net savings ($S_h^*$).

so $S_h^* = s_h Y_t - \partial H_t$ Is substituted into equation (2).

substituting equation (3) and equation (6) into equation (2), we obtain

$$Y_t = \alpha + \beta_1(n_t + g + \partial) + \beta_2 s_k + \beta_3 s_h^* + \beta_4 F_t + \beta_5 P_t \qquad (7)$$

equation (7) can be modified to give

$$Y_t = \beta_0 + \beta_1 n_t^* + \beta_2 s_{k,it} + \beta_3 s_{h,it}^* + \beta_4 F_t + \beta_5 P_t + \varepsilon_t \qquad (8)$$

in a panel framework equation (8) becomes

$$Y_{it} = \beta_1 n_{it}^* + \beta_2 s_{k,it} + \beta_3 s_{h,it}^* + \beta_4 F_{it} + \beta_5 P_{it} + \delta_i + \mu_t + \varepsilon_{it} \qquad (9)$$

$\beta_4$ (coefficient of $F_{it}$) measures the impact of trade openness on economic growth. It shows that more trade may boost economic growth ($\beta_4 > 0$).

For the purpose of this study, we expand $F_{it}$ to test if the direction of openness may affect economic growth. Thus

$F = \gamma(F_{1,it}, F_{2,it})$

$F_{1_{it}}$ is the share of external trade to the total trade of country $i$ at time $t$

$F_{2_{it}}$ is the share of intra-regional trade to total trade of country $i$ at time $t$

It is therefore true that $F_{1_{it}} + F_{2_{it}} = 1$ (collinear).

the coefficients of $F_1$ and $F_2$ will therefore be estimated in separate regressions

Similarly, we replace economic growth with inclusive growth in this study. Inclusive growth is assumed to better reflect the changing dynamics of an economy than economic growth. We therefore estimate the three equations below.

$$Y_{it} = \beta_1 n^*_{it} + \beta_2 s_{k,it} + \beta_3 s^*_{h,it} + \beta_4 F_{it} + \beta_5 P_{it} + \delta_i + \mu_t + \varepsilon_{it} \quad (10)$$

$$Y_{it} = \alpha_1 n^*_{it} + \alpha_2 s_{k,it} + \alpha_3 s^*_{h,it} + \gamma_1 F_{1,it} + \alpha_5 P_{it} + \tau_i + \sigma_t + \omega_{it} \quad (11)$$

$$Y_{it} = \partial_1 n^*_{it} + \partial_2 s_{k,it} + \partial_3 s^*_{h,it} + \gamma_2 F_{2,it} + \partial_5 P_{it} + \theta_i + \vartheta_t + \varphi_{it} \quad (12)$$

It is our expectation that $\beta_4 > 0$ , $\gamma_1 > 0$ and $\gamma_2 > 0$. It is also expected that $\gamma_2 - \gamma_1 > 0$.

### 3.3 Estimation Procedure

Equation 10-12 are estimated within a panel framework. While traditional panel models, namely the Fixed Effect (FE) and Random Effect (RE) models, have been used in similar models, they are prone to several estimation biases.

Consider the generalized form of the empirical model:

$$Y_{it} = \theta Y_{it-1} + X^1 B + V_{it}$$

where

$$V_{it} = \alpha + \mu_i + \varepsilon_{it}$$

First of all, traditional FE and RE may yield inconsistent estimates due to the potential existence of endogeneity in the model. There is a correlation between the independent variables and the error term. For example, intra-regional trade is one of the independent variables and it could be correlated with the error term because in the error term we may have a variable that is correlated with intra-regional trade and inclusive growth. For instance, investment or credit in the private sector if this is not in the model then it would be captured in the error term, so the error term is both correlated in the intra-regional trade and the inclusive growth.

thus if

$$E(V_{it} \mid X) \neq 0 \text{ and}$$

$$E(X_{it}, V_{it}) \neq 0$$

Then the estimated $\beta$ s may be biased and inconsistent.

It is equally important to note that the usual Random Effect Tobit Panel Models are prone to estimation biases due to the potential endogeneity of the explanatory variables.

A way around this problem has been the estimation of the model using the Generalized Method of Moment (GMM) proposed by Arellano and Bover (1995) and Blundell and Bond (1997). While GMM yields a more consistent estimate for linear panel models, it is difficult in estimating non-linear models.

Given that the dependent variable $Y_{it}$ is left and right censored, a linear GMM model will produce inconsistent estimates. The specific source of inconsistency is due to the potential existence of endogeneity in the model. There is a correlation between the independent variables and the error term. For example, intra-regional trade is one of the independent variables and it

could be correlated with the error term because in the error term we may have a variable that is correlated with intra-regional trade and inclusive growth.

$$Y_{it} = \begin{cases} 100 & upper\ \lim \\ 0 & lower\ \lim \end{cases}$$

Further, these models ignore the potential existence of spatial correlation in the errors. This error, particularly in the context of this study cannot be overlooked. Dingel, Meng and Hsiang (2019) showed that global economic activities are spatially correlated. Thus according to them, reflects in the fact that low-income countries tend to be near other low-income countries and high-income countries are similarly clustered near each other. Hence many determinants of income are spatially correlated while spatial correlation exacerbates the problem of inconsistency of parameter estimated, they also distort the patterns of trade and underestimates the potential welfare.

This study goes around these problems by estimating the Spatial Tobit Panel Generalised Method of Moment proposed in Kelejian and Prucha (1999) and Kapoor, Kelejian and Prucha (2007). This approach is used when the dependent variable is censored and the error components are both spatially and serially correlated.

For this estimator, the standard GMM conditions still apply, Thus

1. The lagged values of the dependent variables and explanatory variables are uncorrelated with the differenced error.

$$E\left[\left(Y_{it-s}\right)\left(U_{it} - U_{it-1}\right)\right] = 0 \text{ for } s \geq 2 \text{ ; and } t = 3, ...., T \text{ and}$$

$$E\left[\left(X_{it-s}\right)\left(U_{it} - U_{it-1}\right)\right] = 0$$

2. The successive lag differences of the endogenous regressors are uncorrelated with the country specific effects and the error terms.

$$E\left[\left(X_{it} - X_{it-s}\right).\left(\alpha_i + \mu_{it}\right)\right] = 0 \text{ for } s = 1 \text{ and}$$

$$E\left[\left(Y_{it} - Y_{it-s}\right).\left(\alpha + \mu_{it}\right)\right] = 0 \text{ for } s = 1$$

### 3.4 Measurement of Inclusive Growth

Following Mitra and Das (2018) and Asian Development Bank (AsDB, 2014), we compute inclusive growth $(Y_t)$ using the following procedure:

- First we select the pillars/dimensions (U) and relevant indicators (x). We use the 4-dimensional categorizations of AsDB (2014):
  - Economic Growth, Employment and Infrastructure (U1);
  - Inequality, Poverty and General Equity (U2);
  - Accessibility (Health, Water and Sanitation) (U3); and
  - Governance (U4)

**Table 3.1: Dimensions of Inclusive Growth**

Table 3.1 presents the dimensions and related indicators. From the table, we have attempted to ensure that all aspects of inclusive growth are captured.

| Dimension | Indicator |
|---|---|
| Economic Growth and Employment and Poverty | 1. Proportion of population living below the national poverty line |
| | 2. Proportion of population living below $2 a day at 2005 PPP$ |
| | 3. Ratio of income or consumption of the highest quintile to lowest quintile |
| | 4. Growth rate of GDP per capita at PPP (constant 2011 PPP$) |
| | 5. Growth rate of average per capita income or consumption 2005 PPP$ (lowest quintile, highest quintile, and total) |
| | 6. Employment-to-population ratio |
| | 7. GDP person engaged at constant 1990 ppp$ |
| | 8. Number of own-account and contributing family workers per 100 wage and salaried workers |

| | |
|---|---|
| Key Infrastructure Endowment | 9. Per capita consumption of electricity |
| | 10. Number of paved roads |
| | 11. Number of mobile-cellular subscriptions per 100 people |
| | 12. Depositors with commercial banks per 1000 adults |
| Access and Inputs to Education and Health | 13. School life expectancy (primary to tertiary) |
| | 14. Pupil-Teacher ratio (primary) |
| | 15. Diphtheria, tetanus toxoid and pertussis (DTP3) immunization coverage among 1-year-olds |
| | 16. Physicians, nurses, and midwives per 10,000 population |
| | 17. Government expenditure on education as a percentage of total government expenditure |
| | 18. Government expenditure on health as a percentage of total government expenditure |
| Access to Basic Infrastructure Utilities and services | 19. Percentage of population with access to electricity |
| | 20 Share of households using solid fuels for cooking |
| | 21. Proportion of population using an improved drinking water source |
| | 22. Proportion of population using an improved sanitation facility |
| Gender Equality and Opportunity | 23. Gender parity in primary, secondary, and tertiary education |
| | 24. Antenatal care coverage (at least one visit and at least four visits) |
| | 25. Gender parity in labour force participation |
| | 26. Percentage of seats held by women in national parliament |
| Good Governance and Institutions | 27. Voice and accountability |
| | 28. Government effectiveness |
| | 29. Control of corruption |

*Source: Developed from the policy pillars of inclusive growth as adapted from Zhuang and Ali (2007) Asian Development Bank*

Second, we generate normalized series (x) for each indicator by country.

$$x_{ij}^{*} = \frac{x_{ij} - min\, x_j}{max\, x_j - min\, x_j}; \forall i = 1,2,3\ldots 46$$

The normalized values varies from 0 to 1 thus $1 \geq x_{ij}^{*} \geq 0$.

Third, we perform a Principal Component Analysis (PCA) on the normalized indicators. For details on how this is generated, see Abson, Dougill and Stringer (2012) and Abdi and Williams, (2010).

After computing the component loadings from PCA, we calculate the component scores $C_k$ for each country for a given principal component by multiplying the country's normalized value on a variable by the corresponding component/factor loading of the variable for the given component $C_k = x_{ij}^* * C_j$ and summing these products $\sum_c C_k = \sum_c x_{ij}^* * C_{c,j}$; $c = 1, 2, \ldots$.

A non-standardized index (NSI) for each country and each pillar is then calculated by adding up the component scores weighted by the proportion of total variation explained by each component $U^* = \sum_{k=1}^{n} \frac{P_k}{P} C_k$ where pk is the variation explained by component k, P is the total variation explained by all the principal components, Ck is the component score of the kth component, and n is the number of principal components.

Given that $U^*$ can take up any real value, with larger values implying better performance by a country. Since it has no bounds on the values it can take, we standardize this to ease interpretation. The standardized index (SI) is calculated as

$$SI = \frac{U^* - \min(U^*)}{\max(U^*) - \min(U^*)}$$

This SI is specific to each pillar. There will be four such SIs which are then weighed equally and summed up to arrive at the final IGI.

$$IGI = 0.25(SI_1 + SI_2 + SI_3 + SI_4)$$

The summary results of the PCA are presented in Annex 1.

### 3.5 Data Description

The present empirical analysis spans from 1995 to 2016 with a sample size of 46 African countries. The variables of interest about countries are sourced from different databases. They are, inclusive growth data was sourced from the World Development Indicators and the trade

data was sourced from the United Nations Conference on Trade and Development (UNCTAD). Both the dependent and the independent variables are fully explained below with a description of how they are arrived for the study.

| List of African Countries | |
|---|---|
| 1. Algeria | 24. Guinea-Bissau |
| 2. Angola | 25. Kenya |
| 3. Benin | 26. Lesotho |
| 4. Botswana | 27. Liberia |
| 5. Burkina Faso | 28. Madagascar |
| 6. Burundi | 29. Malawi |
| 7. Cabo Verde | 30. Mali |
| 8. Cameroon | 31. Mauritania |
| 9. Chad | 32. Mauritius |
| 10. Comoros | 33. Morocco |
| 11. Congo, Dem Rep. | 34. Mozambique |
| 12. Congo, Rep | 35. Namibia |
| 13. Cote D'Ivoire | 36. Niger |
| 14. Djibouti | 37. Nigeria |
| 15. Egypt, Arab Rep. | 38. Rwanda |
| 16. Equatorial Guinea | 39. Senegal |
| 17. Eritrea | 40. South Africa |
| 18. Eswatini | 41. Sudan |
| 19. Ethiopia | 42. Tanzania |
| 20. Gabon | 43. Togo |
| 21. Gambia | 44. Tunisia |
| 22. Ghana | 45. Uganda |
| 23. Guinea | 46. Zimbabwe |

### 3.5.1 Dependent Variable

#### 3.5.1.1 Inclusive Growth Measure

Inclusive growth is one of the new concepts of growth. It came about as a result of identified weaknesses in the contemporary measures of growth at the time. For some time, growth was measured using economic data, GDP. However, it was identified that GDP growth was not actually 'all inclusive'. Example, a country's GDP may be increasing but that would not

necessary reflect in the living conditions, health and well fare, etc. Inclusive growth advocates equitable distribution of growth across all factions. Thus, equal opportunities for growth focuses on equity in health, living standards, improved environment, food security and protection (Kamel, 2013) as cited in Singh and Chaturvedi (2010).

To measure inclusive growth, the researcher used the Framework for Inclusive Growth Indicators (FIGI) by the Asian Development Bank which was developed from the policy pillars of inclusive growth as adapted from Zhuang and Ali (2007). AsDB listed 35 inclusive growth indicators. Due to data unavailability the researcher used 29 indicators for a sample size of 46 African countries with a time period of 1995 to 2016. To compute for the inclusive growth measure, the researcher used Mitra and Das (2018) estimation. First, we selected the pillars/dimensions (U) and relevant indicators (x) and used the 4-dimensional categorizations of AsDB (2014). Secondly, normalized series (x) was generated for each indicator by country. Thirdly, Principal Component Analysis (PCA) was performed on the normalized indicators multiplying the country's normalized value on a variable by the corresponding component/factor loading of the variable for the given component. An Inclusive Growth Index (IGI) of 0.00 represents that the country has a low inclusive growth, while an IGI of 0.10 implies that the country has a high inclusive growth.

The data was sourced from World Bank, Development Research Group.

### 3.4.2 Independent variables

#### 3.4.2.1 Intra-regional Trade

Muuse (2010) did a study on transport infrastructure and intra-regional trade Muuse (2010) defined Intra-regional trade as trade within the South American region. Kitavi (2014) looked at the Effect of Intra-African Regional Trade on Economic Growth in the East African

Community. He defined Intra-African Trade as trade among the countries within Africa. With regards to this study, Intra-regional trade is defined as trade within the African Region which is in line with studies by Muuse (2010) and Kitavi (2014). It is measured as the exports plus imports as a percentage of total trade within the African Region.

The data is sourced from the United Nations Conference on Trade and Development (UNCTAD).

#### 3.4.2.2 Extra-Regional Trade

Jenish (2013) researched on Regional Trade and Economic Growth in Commonwealth of Independent States (CIS). He defined Intraregional Trade as trade within the CIS Region and extra-regional trade as trade between CIS and Russian Federation. Wooster, Dube and Banda (2006) did a paper on The contribution of Intra-regional trade and Extra-regional Trade on Growth: Evidence from the European Union. They defined intra-regional trade as trade within the European Union (EU) and Extra-regional Trade as Trade with Non-EU countries. Younes (2010) did a study on the Contribution of Trade to Growth of the Arab Countries. He defined intra-regional trade as trade among member countries (13 Arab states) and Extra-regional trade as trade with nonmember countries (Arab states and European Union). For the purpose of this study Extra-regional Trade is defined as trade between Africa and other continents which is in line with the studies by Jenish, 2013; Wooster, Dube and Banda, 2006; Younes, 2010. It is measured as the Exports plus imports as a percentage of total trade between the African Region and other countries.

The data is sourced from the United Nations Conference on Trade and Development (UNCTAD).

### 3.4.2.3 Total Trade

For the purpose of this study Total Trade is defined as the overall trade in Africa and other parts of the World. It is measured as intra-regional trade plus extra-regional trade as a percentage of GDP.

The data is sourced from the United Nations Conference on Trade and Development (UNCTAD).

### 3.4.2.4 Population Growth Rate

The Population growth rate is defined as the number of individuals by which populations increase Iyoha and Okim, (2017). Zahonogo (2017) did a study on Trade and economic growth in developing countries: Evidence from Sub-Saharan Africa. He measured the population using the growth rate. Younes (2010) did a study on the Contribution of Trade to Growth of the Arab Countries. He also measured the population using the growth rate. Wooster, Dube and Banda (2006) did a paper on The contribution of Intraregional trade and Extra-Regional Trade on Growth: Evidence from the European Union. He measured the population using the growth rate. For our research, we will use population growth rate which is in line with Zahonogo (2017), Younes (2010) and Wooster, Dube and Banda (2006). The data is sourced from World Development Indicators (WDI).

### 3.4.2.5 Foreign Direct Investment

Iyoha and Okim (2017) did a study on the Impact of Trade on Economic Growth in ECOWAS Countries: Evidence from Panel Data. He measured Foreign Direct Investment (FDI) as inflows as a share of GDP. Singh and Chaturvedi (2010) did a study on Trade and Inclusive

Growth. He measured FDI as inflows as a share of GDP. For our study, we will measure FDI as a percentage of GDP following Iyoha and Okim (2017) and Singh and Chaturvedi (2010).

#### 3.4.2.6 Inflation

Zahonogo (2017) did a study on Trade and economic growth in developing countries: Evidence from Sub-Saharan Africa. He used the standard measure for inflation (rate of change in price levels). Wooster, Dube and Banda (2006) did a paper on the contribution of Intraregional trade and Extra-regional Trade on Growth: Evidence from the European Union. They proxied inflation with GDP deflator. Younes (2010) did a study on the Contribution of Trade to Growth of the Arab Countries. He proxied inflation as the rate of change of the GDP deflator. Anand, Mishra and Peiris (2013) did a study on Inclusive Growth: Measurement and Determinants. They proxied inflation with consumer price index annual percentage change. Mongoe (2013) researched on the Impact of International Trade on Economic Growth in South Africa: An Econometric Analysis. He measured inflation as annual percentages of average consumer prices year-on-year changes. For our research, we will measure Inflation with consumer price index which is in line with Anand, Mishra and Peiris (2013). The data is sourced from World Development Indicators (WDI).

# CHAPTER FOUR

# DATA ANALYSIS AND DISCUSSION OF RESULTS

## 4.1 Introduction

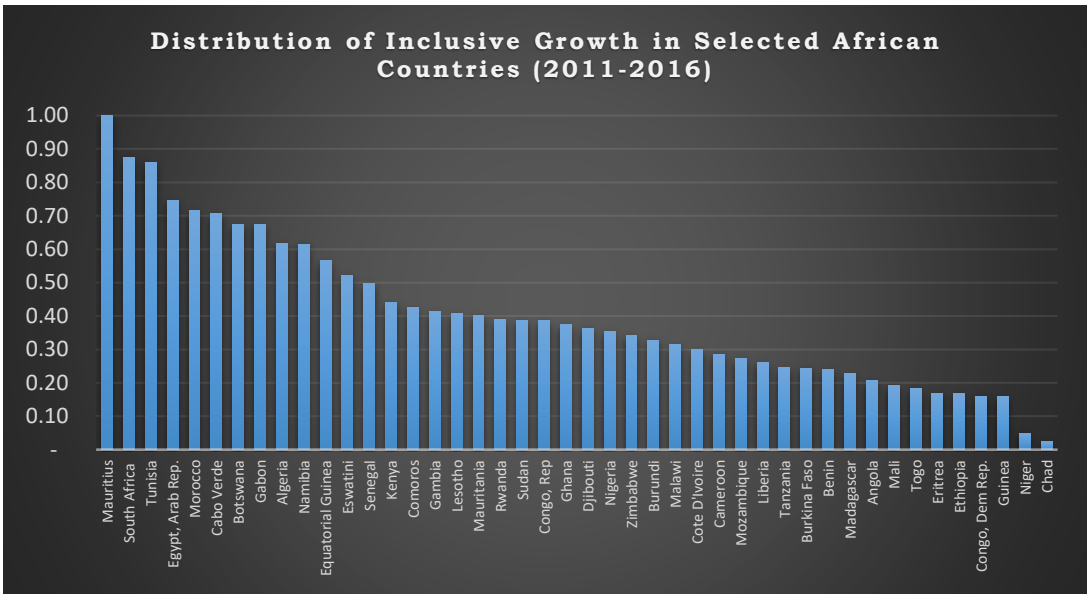
This chapter presents an in-depth discussion of the techniques used to estimate our model. Specifically, the first section considers the discussion of the dependent variable. The next sections present estimation results and discussion. The last section presents the diagnostic tests to appropriately analyze the data using the required estimation technique.

**Figure 4.1 Distribution of Inclusive Growth in selected African countries (2011-2016)**

From Figure 4.1 and Annex 1.1, Mauritius recorded the highest Inclusive Growth Index (IGI) of 1.00. According to IMF (2019), Mauritius achieved a real GDP growth of 3.9 percent in 2016. The high GDP was attained by tourism, construction, information technology and financial services sectors. As a result, in the development of these sectors, Mauritius recorded the lowest unemployment rate of 7.2 percent in 2016 from 7.9 percent in 2015. This was as a result of increase in tourism, financial services and investment. According to the World Economic Forum's Global Competitiveness Index ranking, Mauritius has attained the most competitive country in Africa. Mauritius has been able to achieve this as a result of provision of infrastructure, higher education and training and market efficiency.

South Africa recorded the second highest IGI of 0.92.

*Inclusive Growth Index*




*Source: Authors' computation based on Inclusive Growth Data from WDI*

**Figure 4.2 Trends in Inclusive Growth in Africa (1995-2016)**

The global crises that occurred in 2009 accelerated, because of the financial crises in the advanced countries. The financial crises began with the financial markets in the United States in September 2008 (Fosu, 2013). This increased recession in the advanced economies. The shock was actually felt in 2009, though, with a crash on the African economy. The graph (Figure 4.2) shows the trend of inclusive growth between 1995 and 2016. It is observed that inclusive growth (just as economic growth) is susceptible to global economic volatility. In particular, the sharp decline in inclusive growth could be observed in 2009, following the global financial and economic crisis of 2008/9. According to Fosu (2013), Africa experienced the financial and trade shock. Fosu (2013) considered these two shocks as an external negative shock. The financial shock implied a decrease in credit facility while the trade shock presupposes a decrease in demand for Africa's exports resulting into economic crises. Gross Domestic Product (GDP) growth for Africa decreased from 7.1 percent in 2007 to 5.6 per cent

and 2.8 per cent in 2008 and 2009, respectively (IMF, 2012a, 2012b) as cited in Fosu (2013). This means that global crisis that affected African economies, adversely affected GDP growth, consumer price inflation, exports, and international terms of trade of the national economies and more importantly shrinks the governments capacity to deliver social services, including quality health care, basic and secondary education as well as other pro-poor programmes.


*Source: Authors' computation based on Inclusive Growth Data from WDI*

## 4.2 Empirical Results and Discussion

This section presents the estimation results of the Spatial Tobit Panel Generalized Method of Moments (STPGMM) Estimation. The STPGMM estimation was estimated for the three models. The STPGMM is employed when the dependent variable is censored and the error components are both spatially and serially correlated. A test for spatial autocorrelation is reported in Table 4.1. In Table 4.1 the researcher conducted three tests for spatial

autocorrelation as a way to validating the choice of STPGMM. The first, tests for spatial auto correlation in the residuals; the second for spatial autocorrelation in the lagged dependent variables and the third for general spatial autocorrelation. A rejection of the null hypothesis (as specified in Table 4.1) means the existence of spatial autocorrelation in the residuals, the lagged dependent variables or in the full model. The results of the Lagrange Multiplier (LM) test in all three cases suggest the existence of spatial autocorrelation in the model. This implies that estimating the model without cognizance of the spatial effects would yield biased and inconsistent estimates. The models are therefore estimated with STPGMM estimator, which corrects for the spatial autocorrelation in both the residuals and the lagged dependent variables.

**Table 4.1: Model Selection: Diagnostic Tests Spatial Panel Autocorrelation Tests**

| Tests | Null/Alternate Hypothesis | Test Type | Test Statistic | P/Z Values |
|---|---|---|---|---|
| a. Test for Spatial Autocorrelation in Residuals | Ho: Error has No Spatial Auto-Correlation<br>Ha: Error has Spatial Auto-Correlation | LM Error (Burridge)<br>LM Error (Robust) | = 416.0113<br><br>= 410.3721 | P-Value > Chi2(1) 0.0000<br>P-Value > Chi2(1) 0.0000 |
| b. Test for Spatial Autocorrelation in Lagged Dependent Variables | Ho: Spatial Lagged Dependent Variable has No Spatial Auto-Correlation<br>Ha: Spatial Lagged Dependent Variable has Spatial Auto-Correlation | LM Lag (Anselin)<br>LM Lag (Robust) | = 105.0647<br><br>= 99.4255 | P-Value > Chi2(1) 0.0000<br>P-Value > Chi2(1) 0.0000 |
| c. General Spatial Autocorrelation | Ho: No General Spatial Auto-Correlation<br>Ha: General Spatial Auto-Correlation | LM SAC (LMErr+LMLag_R)<br>LM SAC (LMLag+LMErr_R) | = 515.4368<br><br>= 515.4368 | P-Value > Chi2(2) 0.0000<br>P-Value > Chi2(2) 0.0000 |

The results of the STPGMM are presented in Table 4.2. The findings are discussed alongside the interpretation of the regression results.

In Model 2 and 3 both Intra-regional and Extra-Regional Trade are positive and significant at five percent. This means for a unit increase in intra and extra regional trade, inclusive growth increases by 0.310 and 0.323 respectively. Also in model 1, the coefficient associated with total trade is positive and significant, implying for a unit change in total trade, inclusive growth increases by 0.422. Previous empirical studies that use similar specifications found that both

intra and extra trade increase inclusive growth. This confirms the finding by Wooster et al. (2008), Kitavi (2014) and Younes (2010) who found intra-regional trade to significantly increase growth. Our results confirm the findings by Younes (2014) and Jenish (2013), who found extra-regional trade to significantly increase growth.

Concerning Wooster et al. (2008), Younes (2010) and Jenish (2013), who found the effect of extra-regional trade to outweigh the effect of intraregional trade on growth, we found similar results in our case. We found in terms of magnitude that extra-regional trade has a higher effect on inclusive growth compared to intraregional trade. For instance, from the spatial tobit panel GMM results, whereas the effect of intra-regional trade reports an increase in inclusive growth about 0.310 units, extra-regional trade increases it a bit higher by about 0.323 units. Alcala and Cicone (2003) explained that the effect of trade on growth was dependent on the country's size (Market size) and structural linkages between growth and trade patterns (Wooster et al., 2008). Results in this study found similar results in this study and thus tend to agree with the conclusion from their studies that extra regional trade has the tendency to expose countries to larger and diverse market than intraregional trade. With this understanding, we are not surprised that the resultant effect of extra-regional trade is higher than intra-regional trade on inclusive growth measured by the various determinants.

National savings, and Foreign Direct Investment exhibit significant and positive coefficients, as expected in all the three models, which means that inclusive growth increases as national savings and FDI increase. Previous empirical studies that use similar specifications found that national savings and FDI are key determinants of inclusive growth (Alfaro et al, 2004 and Johnson, 2006). For a unit increase in national savings and FDI, inclusive growth increases by 0.017, 0.016 and 0.017 for national savings and 0.042, 0.043, 0.038 for FDI in model 1, 2 and 3 respectively. This finding is supported by Alfaro et al. (2004) who found FDI to significantly

induce growth. Also, Johnson (2006) found FDI inflows to enhance growth, especially, in developing countries which is exactly the context with which our estimations are done.

Population Growth Rate and Consumer Prices (inflation) produced negative relationships with inclusive growth. In addition, population growth rate showed significance at 1 percent whilst inflation showed statistically insignificant relationship with inclusive growth. This means for a unit increase in population growth rate, inclusive growth decreases by 0.0214, 0.020 and 0.0186, whilst for a percentage increase in inflation rate, inclusive growth decreases by 0.019, 0.021 and 0.018 in models 1, 2 and 3 respectively. This means that rapid population growth is destructive to inclusive growth in Africa. Previous empirical studies that use similar specifications found that inclusive growth will be slow when population growth rate and inflation have a negative relationship with inclusive growth (Younes, 2010; Zahonogo, 2017 and Iyoha & Okim, 2017).

**Table 4.2: Results of the Spatial Tobit Panel Generalized Method of Moments (STPGMM) Estimation**

| | (Model 1) Inclusive Growth | (Model 2) Inclusive Growth | (Model 3) Inclusive Growth |
|---|---|---|---|
| Lagged Inclusive Growth (dependent variable) | -0.203*** | -0.202*** | -0.194*** |
| | (0.019) | (0.0193) | (0.0193) |
| National Savings | 0.017*** | 0.016*** | 0.017*** |
| | (0.002) | (0.001) | (0.000) |
| Consumer Prices (Inflation) | -0.019 | -0.021 | -0.018 |
| | (0.012) | (0.0204) | (0.0021) |
| Population Growth Rate | -0.0214*** | -0.020*** | -0.0186*** |
| | (0.0043) | (0.0041) | (0.0042) |
| Foreign Direct Investments (% GDP) | 0.042*** | 0.043*** | 0.038** |
| | (0.0108) | (0.0106) | (0.0120) |
| Total Trade (% GDP) | 0.422*** | | |
| | (0.1031) | | |
| Intra-Regional Trade (% Total Trade) | | 0.310*** | |
| | | (0.0429) | |
| Extra-Regional Trade (% Total Trade) | | | 0.323*** |
| | | | (0.0403) |

| | | | |
|---|---|---|---|
| Constant | 0.422*** | 0.475*** | 0.183 |
| | (0.0326) | (0.0365) | (0.0427) |
| *Number of Countries* | 46 | 46 | 46 |
| *Number of Years* | 21 | 21 | 21 |
| *Wald Statistics (P-Values)* | 205.14 (0.000) | 205.06 (0.000) | 205.00 (000) |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The study compares the results from the Spatial Panel Tobit GMM estimates with the Arellano and Bover (1995) and Arellano and Bond (1991) GMM linear estimation of the model. The linear GMM model in Table 4.3 performs rather poorly in estimating the impact of the trade on inclusive growth. Given that the dependent variable $Y_{it}$ is left and right censored, a linear GMM model will produce inconsistent estimates. Of the three measures of the trade variables (Total Trade, Intra-Regional Trade and Extra-Regional Trade), only total trade has a statistically significant impact on inclusive growth. The other two indicators, intra-regional trade (0.003) in model 2 and extra-regional trade (-0.003) in model 3 were insignificant. Apart from the coefficient of the lagged dependent variable, the Tobit GMM produce much higher estimates of the coefficient than the linear GMM estimates.

**Table 4.3: Dynamic Panel (Linear) Generalized Method of Moment Estimation**

| | (1)<br>Inclusive Growth | (2)<br>Inclusive Growth | (3)<br>Inclusive Growth |
|---|---|---|---|
| Lagged Inclusive Growth (dependent variable) | -0.726*** | -0.749*** | -0.749*** |
| | (0.010) | (0.008) | (0.008) |
| National Savings | 0.000*** | 0.000*** | 0.000*** |
| | (0.000) | (0.000) | (0.000) |
| Consumer Prices (Inflation) | 0.000* | 0.000 | 0.000 |
| | (0.000) | (0.000) | (0.000) |
| Population Growth Rate | -0.032*** | -0.032*** | -0.032*** |
| | (0.002) | (0.002) | (0.002) |
| Foreign Direct Investments (% GDP) | 0.001*** | 0.000*** | 0.000*** |
| | (0.000) | (0.000) | (0.000) |
| Total Trade (% GDP) | 0.243*** | | |
| | (0.010) | | |
| Intra-Regional Trade (% Total Trade) | | 0.003 | |
| | | (0.011) | |
| Extra Regional Trade (% Total Trade) | | | -0.003 |
| | | | (0.011) |

| | | | |
|---|---|---|---|
| _cons | 0.169*** | 0.179*** | 0.182*** |
| | (0.006) | (0.006) | (0.010) |
| *Number of Countries* | 47 | 47 | 47 |
| *Number of Years* | 23 | 23 | 23 |
| $R^2$ | | | |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

### 4.3 Chapter Summary

From the above findings, both intraregional trade and extra-regional trade have significant positive effects on inclusive growth measured by the Inclusive Growth Index (IGI). However, in terms of magnitude, we find extra-regional trade to enhance growth more compared with intraregional trade. This finding is attributed to the fact that extra-regional trade exposes countries to larger and diverse markets compared with intraregional trade.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

## 5.1 Introduction

This chapter presents the summary of the study, concludes the thesis, looks at the policy recommendations to strengthen trade and boost inclusive growth in Africa. The study investigates the link between trade and inclusive growth in Africa with a sample size of 46 African countries with a time period of 1995 to 2016. The Asian Development Bank (AsDB) framework was used to measure inclusive growth while the Spatial Tobit Panel Generalised Method of Moment (STPGMM) estimator was used to estimate the impact of disaggregated trade flows (intra-regional trade and extra-regional trade).

## 5.2 Summary

A plethora of studies have established international trade as very important in propelling economic growth (World Bank, 2016). For instance, Harrison (1996) finds international trade to be associated with high economic growth (Frankel & Romer, 1999). However, there have been limited studies on international trade and inclusive growth, especially, in Sub-Sahara Africa. Inclusive growth is established by literature to extend beyond achieving a high economic growth rate. It goes beyond to consider the accessibility of growth and how equitable the distribution of growth is.

Inclusivity focuses on how the various segment of people within a country benefit from the proceeds of growth without it being skewed to some selected few people in society. Ianchovichina and Lundstrom (2013) explain that inclusive growth should place greater importance on the opportunities that come with growth (such as employment) rather than the

redistribution of incomes. Most studies that focus on trade and inclusive growth find a positive relationship running from trade to inclusive growth. For instance, a study by the United Nations (2015) finds international trade to be the surest mechanism for inclusive economic growth and poverty reduction which in the end promotes sustainable development.

Several measures are used in measuring inclusive growth but for our study, we focused on the Asian Development Bank (AsDB) framework measurement of Inclusive Growth. This Inclusive Growth Index (IGI) twenty-nine (29) variables for the measurement of inclusive growth. The IGI was computed by using 4-dimensional categorizations Economic Growth, Employment and Infrastructure; Inequality, Poverty and General Equity; Accessibility (Health, Water and Sanitation); and Governance. Also, for this study, the researcher tried to look at the trade from three different perspectives, that is, trade within the African region, trade outside the region and trade within the African region plus trade between Africa and other continents. Trade within the African region was classified as intra-regional trade, trade outside the African region was categorized as extra-regional trade and trade between and outside Africa was categorized as total trade. As part of these research questions, the researcher tried to ascertain the respective effect of these trade perspectives on inclusive growth. We assert that if trade positively affects inclusive growth, then it should translate into an equally positive relationship between the intra-regional, extra-regional trade, total trade and inclusive growth. Some studies have sought to ascertain the effects of both intra-regional and extra-regional trade on growth. Studies have established that both perspectives have a positive relationship with growth (Jenish, 2013; Wooster, Banda & Dube, 2006). It is further documented from the literature that extra-regional trade has a higher effect on growth compared with intraregional trade.

In order to address the research questions of our study, we employed the Spatial Tobit Generalised Method of Moment (STGMM) Estimator. The STGMM allows us to control for

potential spatial effect while eliminating potential biases and inconsistencies that may result from the tobit effect. The researcher found that the magnitude of the Dynamic Panel (Linear) Generalized Method of Moment Estimation yielded inconsistent estimates than the Spatial Tobit Panel Generalized Method of Moment (SPTGMM). This is because linear GMM produces consistent estimate for linear models and also given that the dependent variable $Y_{it}$ is left and right censored, a linear GMM model will produce inconsistent estimates. The researcher found that extra-regional trade enhanced inclusive growth more compared with intra-regional trade. This is inferred from the fact that extra-regional trade recorded a higher coefficient compared with intra-regional trade. This confirms the earlier findings of studies by Wooster et al. (2008), Younes (2014) and Jenish (2013), who found extra-regional trade to significantly increase growth.

## 5.2 Conclusion

The study sought to examine the linkage between trade and inclusive growth in Africa. Specifically, it set out to investigate the linkage between intraregional trade, extra-regional trade, total trade and inclusive growth in Africa. It was observed that both theoretical and empirical literature had different conclusions regarding the relationship between trade and inclusive growth, based on several ways of measuring inclusive growth. With the aim of narrowing the gap in the literature, the study employed the Framework for Inclusive Growth Indicators (FIGI) and some variables for trade openness. Results of the STPGMM model indicates that both intraregional and extra-regional trade had significant and positive effects on inclusive growth. Moreover, it was revealed that extra- regional trade contributed more positively to inclusive growth than intra-regional trade. This refutes to some extent, the notion that intra-regional trade tends to promote inclusive growth and should be encouraged. It is

recommended that African countries should nevertheless improve on both intraregional and extra-regional trade as both enhance inclusive growth in different ways.

### 5.3 Policy Recommendations

Based on the findings of the study, some recommendations were made. Empirical results show a positive relationship between intraregional trade and inclusive growth which is quite lower than the relationship between extra-regional trade and inclusive growth, so policies that will strengthen intraregional trade would also strengthen inclusive growth. African countries must facilitate intraregional trade to boost inclusive growth by reducing trade barriers, cost and promote infrastructure to enhance intraregional trade in Africa. Government of African Countries should exercise the required political will to implement regional trade agreement especially the African Continental Free Trade Agreement (AFCFTA) which was signed in Kigali, Rwanda, on March 21, 2018. Furthermore, African Countries have to consider in the long term forming currency unions to overcome exchange rate fluctuations as a barrier to free trade, and rather enhancing intraregional trade. Future studies should therefore look at Continental Free Trade Agreement (CFTA) on Intra-regional trade.

### 5.4 Limitations of the Study

The unavailability of data for some countries created the situation whereby information was not obtained for a more comprehensive analysis of the relationship between trade and inclusive growth in Africa. Moreover, there is not sufficient literature on trade and inclusive growth unlike trade and economic growth. Besides, the vast literature on trade and growth did not specify the correspondent percentage changes in growth as a result of specific changes in trade flows.

# Appendixes

## Appendix 1.1: Inclusive Growth Index for Selected African Countries

| No. | Country | 1995-2000 | 2001-2005 | 2006-2010 | 2011-2016 | African Average |
|---|---|---|---|---|---|---|
| 1 | Algeria | 0.80 | 0.80 | 0.82 | 0.62 | 0.76 |
| 2 | Angola | 0.28 | 0.27 | 0.26 | 0.21 | 0.25 |
| 3 | Benin | 0.15 | 0.16 | 0.23 | 0.24 | 0.19 |
| 4 | Botswana | 0.72 | 0.75 | 0.69 | 0.67 | 0.70 |
| 5 | Burkina Faso | 0.13 | 0.08 | 0.15 | 0.24 | 0.16 |
| 6 | Burundi | 0.22 | 0.23 | 0.23 | 0.33 | 0.26 |
| 7 | Cabo Verde | 0.61 | 0.66 | 0.69 | 0.71 | 0.67 |
| 8 | Cameroon | 0.33 | 0.31 | 0.28 | 0.29 | 0.30 |
| 9 | Chad | 0.07 | 0.05 | 0.02 | - | 0.04 |
| 10 | Comoros | 0.45 | 0.42 | 0.34 | 0.43 | 0.42 |
| 11 | Congo, Dem Rep. | 0.22 | 0.20 | 0.14 | 0.16 | 0.18 |
| 12 | Congo, Rep | 0.40 | 0.39 | 0.42 | 0.39 | 0.40 |
| 13 | Cote D'Ivoire | 0.32 | 0.30 | 0.34 | 0.30 | 0.31 |
| 14 | Djibouti | 0.44 | 0.38 | 0.31 | 0.36 | 0.38 |
| 15 | Egypt, Arab Rep. | 0.77 | 0.78 | 0.73 | 0.75 | 0.76 |
| 16 | Equatorial Guinea | 0.53 | 0.61 | 0.54 | 0.57 | 0.57 |
| 17 | Eritrea | 0.23 | 0.22 | 0.15 | 0.17 | 0.19 |
| 18 | Eswatini | 0.59 | 0.55 | 0.50 | 0.52 | 0.54 |
| 19 | Ethiopia | 0.08 | 0.10 | 0.11 | 0.17 | 0.12 |
| 20 | Gabon | 0.76 | 0.77 | 0.71 | 0.67 | 0.73 |
| 21 | Gambia | 0.39 | 0.36 | 0.47 | 0.41 | 0.40 |
| 22 | Ghana | 0.34 | 0.34 | 0.38 | 0.37 | 0.36 |
| 23 | Guinea | 0.14 | 0.15 | 0.16 | 0.16 | 0.15 |
| 24 | Guinea-Bissau | 0.14 | . | . | . | 0.14 |
| 25 | Kenya | 0.43 | 0.44 | 0.43 | 0.44 | 0.44 |
| 26 | Lesotho | 0.45 | 0.40 | 0.37 | 0.41 | 0.41 |
| 27 | Liberia | 0.20 | . | . | 0.26 | 0.24 |
| 28 | Madagascar | 0.25 | 0.27 | 0.24 | 0.23 | 0.25 |
| 29 | Malawi | 0.30 | 0.32 | 0.27 | 0.31 | 0.30 |
| 30 | Mali | 0.16 | 0.17 | 0.18 | 0.19 | 0.18 |
| 31 | Mauritania | 0.40 | 0.43 | 0.46 | 0.40 | 0.42 |
| 32 | Mauritius | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 33 | Morocco | 0.69 | 0.72 | 0.73 | 0.72 | 0.72 |
| 34 | Mozambique | 0.19 | 0.22 | 0.23 | 0.27 | 0.23 |
| 35 | Namibia | 0.66 | 0.64 | 0.62 | 0.61 | 0.64 |
| 36 | Niger | - | - | 0.03 | 0.05 | 0.02 |
| 37 | Nigeria | 0.34 | 0.33 | 0.35 | 0.35 | 0.34 |
| 38 | Rwanda | 0.22 | 0.28 | 0.31 | 0.39 | 0.31 |
| 39 | Senegal | 0.38 | 0.40 | 0.46 | 0.50 | 0.44 |
| 40 | South Africa | 0.98 | 0.94 | 0.87 | 0.87 | 0.92 |
| 41 | Sudan | 0.38 | 0.37 | 0.37 | 0.39 | 0.38 |
| 42 | Tanzania | 0.23 | 0.27 | 0.28 | 0.25 | 0.26 |
| 43 | Togo | 0.21 | 0.21 | 0.19 | 0.18 | 0.20 |
| 44 | Tunisia | 0.84 | 0.87 | 0.91 | 0.86 | 0.87 |
| 45 | Uganda | 0.24 | 0.29 | 0.31 | . | 0.28 |
| 46 | Zimbabwe | 0.47 | 0.41 | 0.30 | 0.34 | 0.39 |

Source: Authors' computation

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