

Exports and Economic Growth in Sub-Saharan Africa: The Roles of Intra- and Inter-SSA Exports.

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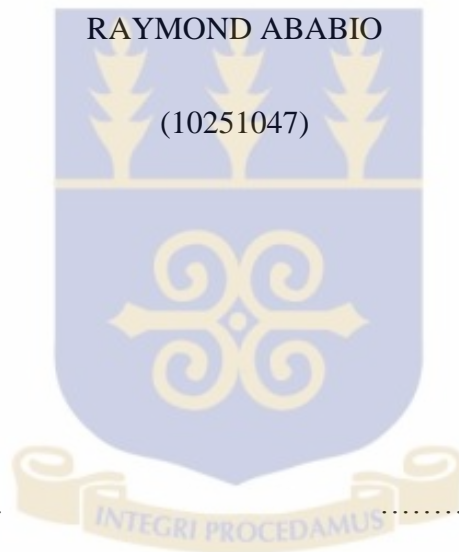
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DECLARATION

I, *RAYMOND ABABIO*, hereby declare that this thesis is original research undertaken by me under the guidance of my supervisors; and with the exception of references to other people's work which have been duly cited, this thesis has neither in part nor in whole been submitted for another degree elsewhere



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ABSTRACT

Most economies in Sub-Saharan Africa (SSA) have been lagging behind in development due to low growth performance over the years. The destinations of SSA exports have largely remained the same, with Europe commanding the ‘lions’ share of total exports while intra-regional trade remains very low over the years. However, the assessment of the effect of export destinations (intra and inter-SSA exports) on economic growth has not received any significant attention in Sub-Saharan Africa. The study investigates the relationship between intra-SSA and inter-SSA exports (represented by exports to Europe/Central Asia) and economic growth using panel data of twenty-nine (29) Sub-Saharan African (SSA) countries for the period 1995–2013.

The study adopts the system GMM estimation technique in order to obtain consistent and efficient estimates of the effect of intra and inter-SSA exports on economic growth. In relation to previous empirical studies, this study accounts for time series variations in the data and endogeneity in the estimation model.

The estimation results attest to positive effects of exports on growth as well as both intra and inter-SSA exports on economic growth. However, the magnitude of the effect of intra-exports on growth is greater than that of inter-exports. The study further shows that gross capital formation which is included as a control variable is a significant positive determinant of economic growth in SSA. Population and inflation on the other hand are found to have respectively negative insignificant and significant effect on economic growth in SSA.

It is recommended that governments in SSA should make more concerted efforts and take pragmatic measures to promote intra-SSA export in the long term as well as improve on general exports and exports to Europe in order to make higher gains from trade. Additionally, physical

capital must be increased, labour force must be equipped with relevant skills and given employment opportunities and inflation kept under control in order to enhance accelerated growth in SSA economies.



DEDICATION

This thesis is dedicated to God Almighty but for whose mercies, love and protection I would not have come this far; to my father, Mr. John K. Ababio and my late mother, Elizabeth Y. Adase who honoured God's call to take the responsibility of nurturing me.



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“Through the Lord’s mercies we are not consumed, because His compassions fail not. They are new every morning; Great is your faithfulness” — Lamentations 3:22-23.

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ACRONYMS

BRIC	Brazil, India and China
ELG	Export-Led Growth
ERP	Economic Recovery Programme
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GMM	General Method Moments
IMF	International Monetary Fund
ISP	Import Substitution Industries
OECD	Organization for Economic Commission for Development
SAP	Structural Adjustment Programme
SSA	Sub Saharan Africa
UNCTAD	United Nations Conference on Trade And Development
UNECA	United Nations Economic Commission for Africa
WITS	World Integrated Trade Solutions

CHAPTER ONE

INTRODUCTION

1.1 Background

Poor economic growth performance and the resulting high level of poverty in Sub Saharan Africa has dominated economic debates for many decades. The search for solutions to the poverty problem globally has led to various perspectives on international trade and its relevance as one of the many ways of solving the poverty problem. As largely argued in trade theory and buttressed by several empirical studies in many countries; both developed and developing, exports growth and its impact on economic growth has dominated economic debates for quite a long time and become integral part of policy making by governments. The formation of Regional Trade Blocs, governments assistance to tradable goods sectors, signing trade agreements, establishment of trade institutions and infrastructure, extension of credit to the exports sectors are among the few but notable efforts to promote growth through enhanced trade participation in the global market by SSA countries.

The popular argument that trade restrictions and protectionism lead to higher growth formed the policy orientation of many developing nations in the 1950s and 1960s. This largely informed the import-substitution and infant-industry development strategies of developing countries, including those in the Sub-Saharan Africa region during those two decades. The world economic challenges of the 1970s led to the unsustainability of these trade strategies and hence the shift towards more liberalized trade regimes. Through the advocacy and implementation of the Structural Adjustment Programme (SAP) with the help of the International Monetary Fund (IMF), liberalized trade regimes have since become an integral part of policy formulation in many developing countries. Mwaba (2000) stressed on how impossible it has become for a country to think about economic growth without considering trade as a measure to achieving that. Mwaba (2010) also asserts that the choice of liberalization or maintaining a closed and protected economy is no longer in the hands of

individual economies since the incorporation of the terms of the Uruguay Round into the World Trade Organization (WTO). Further observation indicates that African countries like many other developing countries export large share of their produce and at the same time spend the huge chunk of their income on imports as compared to advanced countries. This points to the essence of not overlooking the potentials of trade as a ‘vehicle’ for development. From the pioneering theories of David Hume (1752), Adam Smith (1776), David Ricardo (1817), Heckscher (1919) and Olin (1933), Linder (1961), Keynes (1936) and many other modern theorists of international trade, they hypothesized that trade among nations enhance productivity; and indirectly boost conditions of living. Thus, international trade is seen in theory to promote the argument that external trade enhance welfare in economies. However, the empirical literature seem not to give overwhelming consensus on the effect of trade on growth.

In the proposition of the classical theories, exports usually involve a flow of commodities produced from relatively abundant resources in exchange for commodities that are made from relatively scarce resources to advance the course of growth or economic wellbeing. On the other hand, imports involve the inward flow of commodities made from relatively scarce resources in exchange for outflow of financial resources obtained from the exports of commodities made from domestically abundant resources. By implication, the excess of a country’s exports over imports brings about positive net addition to the financial resources of a country. This can enhance living standards since aggregate demand would be boosted in the domestic economy. While excess of imports over exports implies net addition to real resources in excess of a country’s the financial resources, but will equally boost living conditions since the real resources acquired can directly increase welfare through higher consumption or indirectly enhance welfare through the inflow of capital resources that would contribute to higher productivity.

The routes through which exports promote growth has been outlined by many authors. Heitger (1986) explains this important relationship by suggesting that economists for a long time have been presuming a strong and positive relationship between a country's engagement in international trade and its economic performance. Heitger (1986) further drew reference from Adam Smith who stressed the importance of trade as a means of widening markets, thereby increasing the division of labour and thus raising the level of productivity. In this same way, Heitger (1986) points that John Stuart Mill on the other hand laid greater emphasis on the dynamic effects of international trade. Thus, it was generally believed among trade theorists that countries with a high engagement in international trade perform much better than countries that protect their home markets - the latter not being able to make use of the benefits of trade as a source of economic growth.

In another argument by Grossman and Helpman (1991b), they hypothesized that the relationship between trade openness and economic growth has been the subject of many studies and analyses, with many concluding on a positive relationship between the two. Grossman and Helpman (1991b) propose that trade can influence growth through several channels including the transmission of technological innovation. Trade openness also leads to more exposure of the domestic economy, in which increased and sustainable international trade allows domestic producers to learn, adopt, or imitate foreign technologies and incorporate them in the production process. In their estimation, trade can help transmit technological innovations and knowledge among trading partners.

Fosu (1990a, 2000) also suggests that the positive implications of exports for growth implies that export development permits the home country to concentrate investment in those sectors where it enjoys a comparative advantage. The resulting specialization is likely to augment overall productivity in the domestic economy. Also, the larger international market resulting from free trade generates economies of scale in the export sector. Fosu (1990a, 2000) further

suggests that worldwide competitive pressures are likely to lead to a reduction in inefficiencies in export production and to result in the adoption of relatively efficient techniques in the traded-goods sector. Finally, a larger export sector would provide the resources required in time to import human and physical capital; including advanced technologies in production and management, and for training high quality labour.

Chea (2012) also makes a similar argument to those outlined above that international trade allows countries to specialize in activities where they hold a comparative advantage. Trade extends the market facing local producers, allowing them to take advantage of economies of scale. Trade reform encourages a more efficient allocation of resources and thereby raises incomes, since finding new and better ways of using land, labor and capital is vital to economic growth. Openness to international trade is also closely linked to supportive investment climate (both foreign and domestic), which is positively correlated with economic growth. When markets are freed up, private investors see greater opportunities and reduced uncertainty where previous barriers may have restricted their business. Private investment brings intellectual capital and technology, and can also nudge other aspects of social infrastructure in a positive direction. Growth and investment in the agricultural and agro-food sector has an especially important role in poverty alleviation because the benefits of increased primary agricultural production spill beyond the sector and spur more general economic growth (pp. 372).

Despite alluding to the channels through which exports may positively relate to economic growth in the preceding paragraph, Chea (2012) argues for probable negative relationship between the two variables. Chea (2012) argues that due to the lack of the resources, institutions or infrastructure to facilitate the changes nor may the social safety nets, developing countries in particular not be able to cushion the negative effects of international trade on their economies in the short term. Further, Chea (2012) proposes that changes in

trade policies in the importing country can also affect growth in the exporting country through altering a country's terms of trade, which again can generate winners and losers within each developing country.

Notwithstanding any adverse effects trade liberalization may cost a nation, it is in line with the important roles of exports in enhancing productivity and consequently the development of a country and to a large extent promoting the common interests of a given economic region that Sub-Saharan African (SSA) countries also participate in international trade.

It is well noted that arguments have concentrated on promoting total exports in order to boost economic growth. Over time the argument on trade and the effect on growth seem to be expanding. New dimensions on exports and growth have and continue to be explored. A consideration of such new dimension to the export and growth argument by Bbaale and Mutenyo (2011) explored the differential effects of agricultural exports and manufactured exports on economic growth in SSA based on the hypothesis that the two components have different impacts. Other and more recent dimension which is of interest to this study is bilateral trade and economic growth relationship. Balamoune-Lutz (2010) makes a case for the effects of exports to specific destinations on growth when he asserts that it is quite plausible that the destination of exports could play an important role in determining a country's trade patterns and, hence, its development trajectory. And for that matter theoretically, there are various channels through which the destination of a country's export could influence long-term growth and the patterns of development. Sindzingre (2007) for instance, may seem also to hypothesize an association between bilateral trade and growth when he argues that many SSA countries have exhibited improved growth rates since the mid-2000s due to a change in global demand driven primarily by China. Similar consideration informed the study by Amarakoon (2012) who studied exports to China from Sub-Saharan African countries and the effect on their economic growth, compared to the

influence of exports to the rest of the world on growth in the region. Further, Rankin and Volker (2010) studied the impacts of exports from South African firms to countries within and outside of the region on incomes of workers based on the argument that trade destination has different impacts on income of workers.

Granted the arguments in the preceding paragraph, which suggest plausible benefits of international trade on growth, SSA countries have been marginalized in world trade for a long time and as a result cannot enjoy the full benefits of partaking in world trade. The structure and destinations' share of its exports have remained largely the same. Their export destinations have been dominated by Europe due to their colonial association with SSA countries, and the continual advances made by this region through the platform of trade agreements to constantly engage SSA countries in trade. Several calls have been made for the governments of SSA countries to take some pragmatic measures to increase their level of integration in international trade in order to maximize gains. Unfortunately, these calls have not seen appropriate responses or the efforts to address these calls have achieved little impacts. Taking cue from the export-oriented policies of the East Asian countries who have experienced some unprecedented growth rates in the world during the last decade, it may seem to suggest that exports to specific destinations could have differential effects on growth. The differential effects of bilateral trade can influence re-orientation of export destinations to enhance exports to specific regions as part of overcoming the marginalization in world trade or maximizing gains from trade.

Giant economies of the West, most of which serve as the major export destinations of SSA countries demand large volume of primary commodities to feed their vibrant industrial sector, given they are not well endowed with many of these natural resources. Under this circumstance, exports of manufactures from SSA which could help expand the industrial sectors of these SSA countries is low and can be a hindering factor to high productivity and

rapid economic growth in SSA. This places a limitation on the potentials of the export markets for SSA countries. Hence, though exports from SSA to Europe may represent the greater proportion of total exports, this may not have any significant implication for growth in the region since the exports mostly comprise of primary products. These primary commodities attract low prices and may have lower significant effect on enhancing industrial productivity and employment in SSA countries towards promoting growth. Given the similarities shared by SSA countries in terms of being dominant in the production and export of primary commodities and fuel, they are more likely to trade in less sophisticated manufactures which could boost capacity and generate some economies of scale for their industrial sector. However, the volume of trade among countries in the region remain very low and less likely to make any significant contribution to the growth potentials.

Given the dynamics of the probable consequence of bilateral trade on growth as outlined in the proceeding paragraphs, this study will explore the effects of exports from SSA to given trading partner regions on growth.

Additionally, notwithstanding the foregoing observations, the assessment of the effect of export volumes from SSA to given regions has not received much attention in spite of the various arguments seeking to promote exports as a mechanism to boost economic growth. This study therefore seeks to explore the relationship between volumes of exports to given regions and economic growth in SSA.

1.2 Problem Statement

Sub Saharan Africa remains the poorest in the world despite the abundance of natural and human resources that can be used to improve living conditions. Trade liberalization became a popular approach to tackle poor growth performance in the region since the intervention of the Breton Woods institutions to revert the deteriorating conditions in the 1980s. However,

the current state of economic affairs do not show evidence that much progress has been made since then. In addition to the above, Sinoha-Lopete (2006) notes that weak governance, unstable policy environments, poor public services, high transportation costs, high levels of unemployment, insufficient infrastructure, low levels of education, and high rates of HIV/AIDS infections also account for poor economic performance in Africa.

Theoretical and empirical perspectives have emphasized on increasing SSA participation in world trade. Similar arguments have also been made to increase intra-regional trade activities. In fact, there have been concerted efforts to promote higher level of free trade among SSA countries through formation of sub-regional trade blocs, removal of tariff and non-tariff barriers and formulation of government policies, but these efforts have not yielded much results in the region. Similarly, higher inter-regional trade has been recommended since exports are seen as 'engine' of growth. Trade agreements between governments of the West and countries in SSA over the decades have sought to promote the agenda of using exports to promote growth. What informs the direction of trade in SSA? Is identifying the barriers to regional trade enough to inform policy making? Or direction of exports matters for growth?

In line with general theory on export-growth hypothesis, this study attempts to consider the probable differential effects of intra-SSA exports and inter-SSA exports (using Europe/Central Asia destined exports from SSA as a proxy) on growth in the region. SSA countries are known to export the greater chunk of their commodities (mostly raw materials/natural resources) to Europe, with comparatively lower percentage of these to other external regions and within the region. Given the level of progress in industry resulting from technological advancements in Europe; the productivity enhancing effects of exporting to this region, the flow of FDI and other financial assistants to the export sector in SSA, there is some possible spillover effects from exporting more to Europe on growth in SSA countries. Also, developed regions such as Europe are known to have macro stability and therefore it

can be assumed that 'all things being equal', this should have some effects on the macroeconomic environment in SSA through large trade association. Worthy of notice is that the effects of exporting to specific regions may not only be positive but also negative. This is because, exporting to an advanced region like Europe opens up SSA economies to receipt of imports often at competitive prices. Most SSA firms do not have the capacity to compete with imports from advanced countries. This may tend to drive out most of these firms leading to redundancy, low output growth and worsening per capita income in SSA. Given these probable effects of exporting to specific destinations, have SSA countries taken these into consideration in pursuance of their exports driven policies?

Kokko (2002) further draws attention to the importance of opening up economies to trade and its relevance to growth when he argues that considering the Asian economies that have recorded the most impressive economic performance during the past decades, it is impossible not to notice the connection between strong export orientation and periods of rapid growth and development. He adds that, in most cases, high and sustained economic growth in these Asian economies was preceded by shifts from traditional import substitution to more export oriented and outward looking policies, resulting in export growth rates reaching 20 percent per year (or more). Given this background and the fact that SSA countries have also taken to opening up their economies to trade around the same time these Asian countries did, what could account for the difference in the level of growth witnessed in these two regions.

According to Fosu (2000), although domestic factors, both structural and policy, have been identified as explanatory variables for inter-temporal and cross-country differences in growth rates in the different regions in Sub-Saharan Africa, external factors are likely to be just as important. How well have these external factors been considered in policy making?

Chea (2012) argues that economic growth is key to poverty alleviation. He adds that while growth may not benefit everyone in an economy, the growth process must be strongly biased against poor people to produce perverse outcomes on poverty. He further explains that opening up an economy will often reduce risk and variability because world markets are more stable than domestic ones. But sometimes it will increase risk either because official stabilization schemes are undermined or because residents switch completely from one activity to another that offers higher average rewards but greater variability. In these cases economic vulnerability could increase, which could increase the incidence of poverty even as the average incomes of the poor increase.

Given these arguments and the generally poor living conditions in SSA despite efforts to liberalize¹, it becomes important to question the sort of impact export destinations have on growth in SSA. Alternatively, even though relatively advanced regions have well-developed markets, higher per capita income and more stable economies and remain the largest exports destination of SSA countries compared to very low levels of intra-SSA trade, to what extent have intra and inter SSA exports contributed to growth in the region.

Comparative to the not well known or established situation in SSA, Nagamo (2003) in his study of inter-regional and intra-regional trade for five selected crisis countries in East Asia² observes that while intra-regional trade in these countries after the financial crisis in 1990 progressed rapidly, the volume of inter-regional trade they accounted for remained relatively large portion of trade in the countries included in the study. His estimation indicate that despite the deteriorating terms of trade, the high elasticity of export to external demand was enough to keep the inter-regional trade in these countries relatively higher compared to intra-regional trade. Craig et al (2011) also argues that the rapid growth being observed in

¹Even though this efforts remain relatively low.

² Including Indonesia, Malaysia, Philippines, Thailand and Korea

East Asian countries (excluding Japan) can be attributed to their export-oriented policies, with export volumes increasing six-folds. They observed that growth in the region, again excluding Japan; averaged 10 percent between 1990 and 2009. Growth in exports within the same time frame exceeds the growth in output, an indication of the 'aggressiveness' of their export-oriented policies. This growth in exports resulted largely from higher growth in intra-regional compared to inter-regional exports (though it is still the larger share of total volume of exports). How does this account compare with the situation in SSA?

Baliamoune-Lutz (2010) found that there is no empirical evidence that exporting from African countries to China enhances growth unconditionally. However, he found a strong evidence that exporting from Africa to Organization for Economic Co-operation and Development (OECD) countries has a positive effect on growth in the region. He concludes that the evidence on the exports from Africa to OECD countries support the notion that export destination matters. Also, Santos et al (2013) in their study of 23 European Union (EU) countries found evidence in part that higher growth is fostered by export diversification across partners while enlarging the portfolio of partners, mainly to less developed and more distant countries, has negative impacts on European growth. In another study by Vacek (2010), he used data on export destinations and found that Czech manufacturing firms do benefit from exporting more. While taking into account export markets' heterogeneity, he found that it is only exporting more to developed countries that brings productivity gains to these firms.

The few studies on this hypothesis including those listed in the paragraph above have included the importance of export diversification in considering the effect of export destinations on economic growth. However, given SSA countries have been identified to have failed to diversify their export portfolios over the year, can we come to a conclusion that

export destinations should become a more important consideration for SSA countries in their quest to make higher gains from exports?

Again, taking the above evidences into consideration, one would begin to ponder if export destinations matter even in the quest of SSA to incorporate liberalized trade policies into their growth oriented policies. Do intra- and inter-regional trade have differential effects on SSA's growth?

The comparative intra/inter-regional export performance of other regions of the world, particularly developing regions such as East/South Asia and South America, and the accompanying improvements in living conditions in these other regions presuppose that intra and inter-Sub Saharan African countries export destinations could play a role in the development of the region.

Current statistics (see Table 2, page 76) shows that large volume of trade is directed from Sub-Saharan African countries to other regions of the world (especially Europe), while intra-SSA trade remains low. Using available data to assess the effects of the volumes of intra-regional trade and inter-regional trade activities on economic growth will give us an idea of the relative contributions of intra-regional export and inter-regional export.

Also, the contrast between the level of development disparity between East/Southern Asia; who have rapidly liberalized and beginning to take some dominance in the world economy and SSA countries which were once at par in terms of level of development calls for a critical examination of the important role of exports destinations also play towards improving living conditions in this region.

1.3 Research Questions

Granted the current state of poor export diversification in SSAs, this study attempts to address the following questions.

- Do exports growth matter for economic growth in SSA?
- What is the effect of intra-SSA exports on economic growth in the region?
- What is the effect of inter-SSA trade on economic growth in the region?
- Do both inter- and intra-SSA trade have positive but differential effects on economic growth of the region?
- What measures should SSA countries put in place in order to maximize the gains from export-oriented policies within and outside the region?

1.4 Objectives

The general objective of this thesis is to empirically ascertain if export destinations matter for growth in SSA using a sample of 29 SSA countries³ for the time period 1995-2013⁴.

The specific objectives of this thesis are to:

- Estimate the effect of total exports on growth in SSA.
- Estimate a dynamic panel econometric model for 29 SSA countries, capturing the relationship between intra/inter SSA exports and per capita GDP growth.
- Compare the relative effects of intra-SSA exports on per capita GDP and inter-SSA on per capita GDP.

³ See Appendix i for the list of countries included in the study

⁴ Data available can only permit the use of this period.

1.5 Justification of the Study

Trade is a powerful engine for economic growth and development. In recent years, countries have increasingly opened their economies to international trade, whether through the multilateral trading system, increased regional cooperation, or as part of domestic reform programmes, which have brought enormous benefits to many countries and citizens (WTO, 2007). Assessing the relative effects of intra- and inter-SSA exports on economic growth would help shape trade policies in SSA in terms of direction of trade that can generate higher gains, under the current circumstances.

Given the justifications provided in trade theories as the basis for international trade and the plethora of empirical studies, literature on the relationship between exports and economic growth has been overly concentrated on total volumes of exports and economic growth. The recent interest in exploring the effect of export destination on economic growth has concentrated on exports to China and effect on growth. In light of this, the potential effects of export destinations on growth has not been empirically assessed especially in Sub Saharan Africa. Additionally, Europe has been the main trading partner of SSA for many decades since trade liberalization received greater attention after the adoption of Structural Adjustment Program (SAP) and the Economic Recovery Programmes (ERP). Despite this close relationship through exports to Europe, and low volume of trade among SSA countries, literature on the assessment of this export destinations and growth is scarce. This study would therefore assess this rarely explored relationships.

Similar to empirical findings on the general Export-Led Growth (ELG) hypothesis, literature on the effect of export destinations and economic growth have had varying results; even though the study in this area is not common especially for SSA. Taking motivation from the study by Balamoune-Lutz (2010), Santos et al (2013) and Vacek (2010) as outlined in

section 1.2, this study will seek to enquire empirically the exports destination that promote relatively higher growth in SSA countries. Also, if globalization in its broad sense implies the “process of international integration arising from the interchange of world views, products, ideas and other aspects of culture”⁵, then export destination may produce the exchange of these which could bring about enhanced growth [welfare]. With this understanding, if the study by Balamoune (2002), Rankin and Schöer (2010), Arora and Vamvakidis (2005), Amarakoon (2012) and Rodríguez (2006) all of whom considered the effect of trade openness on growth could be interpreted to mean exporting more to a particular region implies higher integration, then this study will draw inference for in exploring the effects of export destinations on growth.

As it has been the popular opinion call, the under-development of SSA countries calls for opening up trade to the rest of the world in order to take advantage of development spillovers from other countries, considering the limited domestic markets due to high level of poverty. This makes a case for the development of pragmatic trade policies that seek to comprehensively boost SSA exports in order to bring about accelerated development, but this call cannot be made without any empirical basis.

The widespread bilateral and multilateral trade agreements in the face of globalization and as key mechanism for enhanced economic growth in impoverished regions of the world including SSA countries calls for a thorough examination of the differential effects of intra-inter SSA exports on economic growth in order to inform direction of trade policies towards attaining the targeted objectives.

⁵ en.wikipedia.org/wiki/Globalization — accessed on 15/06/2015

Again, in order to have an empirical basis for boosting trade within and without SSA as a means to enhance economic development, there is the need to use empirical results to justify such position.

Finally, this study will add a new dimension to the literature on the ELG by considering the differential effects of intra and inter-Sub Saharan African trade on the per capita income growth of the region.

1.5 Organization of the study

This work is divided into six chapters. Chapter one includes the introduction, the problem definition, and the justification of need for the study and the objectives to be achieved in this study. Chapter two is an overview of demographic and economic conditions of SSA. Chapter three provides an exploration of literature related to the study. Chapter four presents the methodology to be used to obtain the results in this study, including the selected economic theory and the econometric method to be followed. Chapter five presents and discusses the results obtained from the analysis. Finally, Chapter six concludes with a recommendations, limitations, and suggestions for further research.

CHAPTER 2

OVERVIEW OF TRADE AND MACROECONOMIC INDICATORS IN SSA

2.1 Introduction

This chapter presents an insight into the demographic and some macroeconomic indicators of the SSA region. Section 2.2 gives a brief overview into the demographic outlook of the SSA region, followed by an exposition of economic growth profile of the region in section 2.3. Section 2.4 discusses the poverty profile of SSA countries. Section 2.5 outlines post-independence liberalization policy framework of SSA. Section 2.6 outlines trade performance in global perspective. Section 2.7 discusses inter-/intra-regional trade performance in SSA. Finally, section 2.8 concludes on this chapter.

2.2 Demographic Outlook

Sub-Saharan Africa is the part of Africa south of the Sahara Desert: the forty-seven countries that are not part of North Africa. It is one of the poorest regions in the world and hosts many of the least developed countries in the world. Despite considerable progress over the last decade, SSA countries continue to face major development challenges, including a high incidence of poverty, increasing environmental deterioration, illiteracy, poor health conditions, conflicts in some regions, and the relentless surge of HIV/AIDS at a time when a number of regions in the developing world are benefiting greatly from economic opportunities resulting from globalization (Oruonye, 2012). According to UNCTAD (2006), SSA countries differ in several dimensions including 24 coastal countries, 16 landlocked countries and 7 insular countries located in the Atlantic and Indian Ocean. The region has the highest population growth rate in the world of about 2.7 percent compared to 2 percent and 2.2 percent for Asia and Latin America respectively. The region has a total population of 910.4 million people with the urban population of 37 percent of the total population as of

2012. SSA has gross national income per capita of US\$1351 and life expectancy at birth of 56 years as at the end of 2012 (World Bank, 2014). The total land size of the region is estimated at 2,455 million hectares.

2.3 Growth performance

Subsequent to attaining independence between 1950s and 1960s, average growth rate in SSA can best be described as low and unstable. UNCTAD (2001) reports that Africa as a whole experienced moderate growth from the mid-1960s until the end of the 1970s. While the average growth rate was well below the rate achieved by a handful of East Asian economies, it equaled or exceeded the growth rates attained by many developing countries in other regions. In particular there was a notable acceleration of growth in SSA during the 1970s, supported by a boom in commodity prices and foreign aid. Investment in many countries in the region exceeded 25 per cent of GDP, and the savings gap remained relatively moderate. Economic performance deteriorated rapidly in SSA in the late 1970s and early 1980s. Stagnation and decline in economic performance continued in SSA during the first half of the 1990s due to a combination of adverse external developments, structural and institutional bottlenecks and policy errors (UNCTAD, 2011).

The 1980s is often described as the lost decades of opportunities in Africa due to the drastic deterioration in socio-economic conditions within the period. Further, the region's growth performance over the decades has tended to rely on the global economic performance due to its heavy dependence on the exports of primary commodities as a major source of revenue for funding development. The prices of these primary commodities are unstable on the world market, except for some resilience demonstrated in recent times even in the face of global financial crisis, mainly attributable to the increasing demand for exports from China.

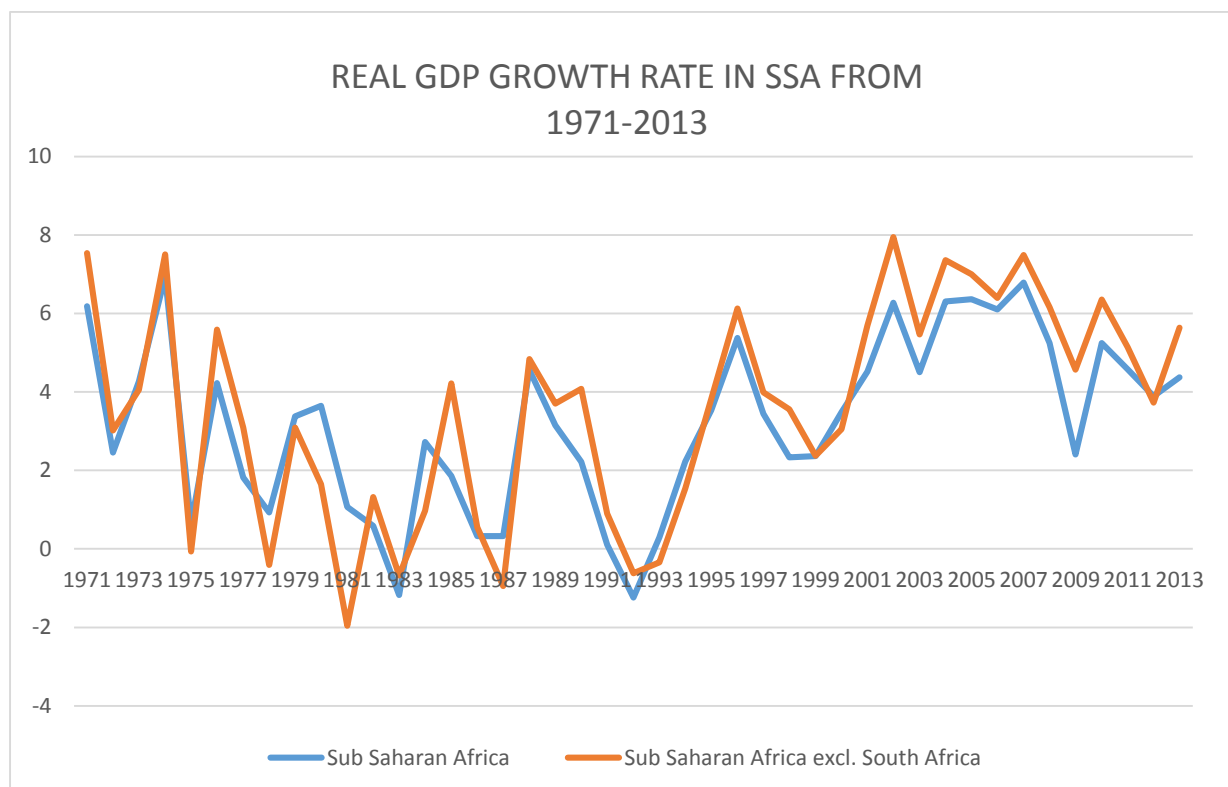
In response to the generally poor economic performance in the 1980s, most countries in the region enrolled into the Structural Adjustment Programme (SAP) and Economic Recovery Programme (ERP) initiated by the World Bank and International Monetary Fund (IMF) under the Washington Consensus to reverse the worsening economic trends of countries in the region. The implementation of the ERP brought some remarkable transformation in policy orientation to SSA economies, even though it has been criticized for the little impact witnessed in the 1980s and 1990s.

The above notwithstanding, Sindzingre (2007) explains that the experiences under the SAP and ERP programme served as an impetus for fine-tuning policies which have brought about some remarkable improvements in growth rates witnessed since the mid-2000s. Also, a change in global demand driven primarily by China can be cited as a contributory factor to the upsurge in economic growth. World Bank (2011) observes that growth in SSA regained sharp momentum in 2010, with an average growth rate of about 5.1 percent relative to 1.94 percent in 2009. This turn around has been attributed to global economic recovery and changes in domestic policies. Further, the slower growth in the region's largest economy South Africa has always made the difference in the growth trajectory within the region, often weighing down growth in the region (see figure 1). The upward trend in energy and non-energy commodity prices is thought to cause a net favourable terms of trade and therefore contributed greatly to the recovery of growth in SSA. Similarly, Sundaram et al (2011) noted that the improved growth rates posted by SSA countries since 2000 is largely due to recovery in the export prices of primary commodities from the abysmal performance during the period of the global economic crisis. They further outlined that despite the generally impressive growth performance of SSA countries, there were vast differences in growth recorded by various countries. Politically unstable countries and those heavily affected by violent conflicts performed badly, while resource-rich countries were greater beneficiaries, and

therefore had the greater share of the boom. Some notable countries leading the growth performance since 2000 include Angola, Chad and Equatorial Guinea, all major petroleum exporters (Sundaram et al, 2011).

Close observation of trend analysis in GDP growth rates in the region from 1971 to 2014 in Figure 1 indicates that SSA growth performance in the early 1970s to 1980s was relatively low, only to pick an upward trend after 2000. Since then, growth in the region has remained stable around 5 percent since 2001. This growth trend is projected to maintain their momentum, with a slight improvement but still maintaining rates between 5 percent and 6 percent in 2015 (IMF, 2015).

Figure 1: Real GDP growth in SSA from 1971-2013



Source: Author's tabulation from UNCTAD database 2015

2.4 Poverty Profile

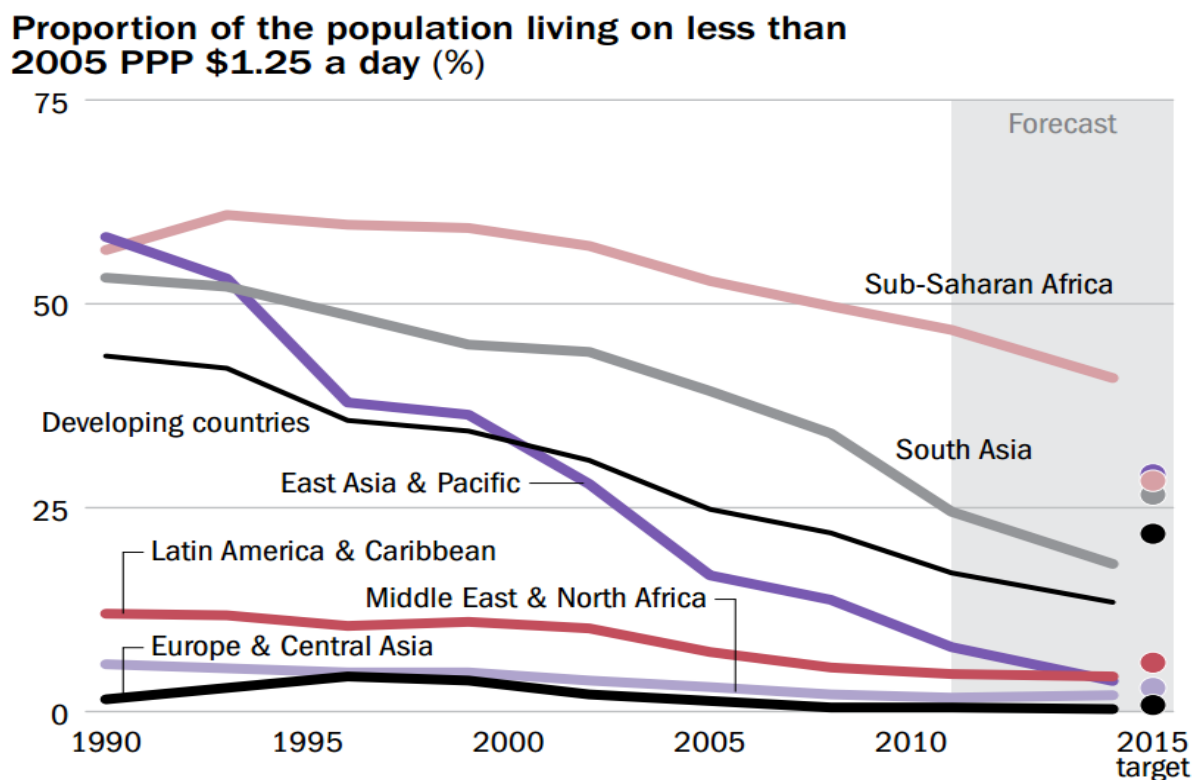
Despite the remarkable recent upsurge in economic growth in SSA as explained in the previous section, living standards in SSA can be described as the poorest (see Figure 2) in the world per the accounts of various reports. Debates have gone on concerning a standard measure of poverty, and consequently the living conditions of a people have dominated economic literature for decades. Batana (2008) supports this assertion when he posits that “up to now, there is no consensus about the best multidimensional poverty measure. For example, which measure could allow better targeting of the poor and suggest more effective poverty-reduction policies? One issue a good poverty measure needs to address is identification” (pp. 3).

While many approaches⁶ have been used in different parts of the world, one of the commonly used measure is the US\$1.25 per day measurement (Jordanna Packtor, 2014). Fosu (2010) indicates that the US\$1 per day measure of poverty has appeared arguably the most important yardstick for measuring poverty as it is used in the Millennium Development Goals (MDGs) and other global discussions concerning measure and improvement in poverty. Whatever the measurement approach adopted, it is generally estimated that Africa (dominated by SSA) remains the poorest region of the world.

Figure 2 shows that in spite of the fall in poverty in the region, poverty rates in SSA remains the highest since 1990 to date compared to any other region of the world.

⁶ Commonly used UNDP measures of poverty include Human Development Index, Gender-related development index, Gender empowerment measure, Human Poverty Index (developing countries)(HPI -1) and Human Poverty Index (developed countries)(HPI - 2)-see ODI poverty briefing, 1999. Also, see Batana (2008)

Figure 2: proportion of the population living on less than 2005 PPP \$1.25 a day (%) by region: 1990-2015.



Source: World Bank PovcalNet (<http://iresearch.worldbank.org/PovcalNet/>).

Figure 2 indicates that though poverty rates in SSA fell from 1990 to 2010, and projected to fall further by the end of 2015, the region remains the poorest in the world. World Bank (2015) notes that despite drastic fall in poverty rates in poor regions of the world, this has not been even. Statistics reported show that, SSA performance in poverty reduction is the least; falling—from 53% to 47%, East Asia—from 78% to 8%, and South Asia—from 61% to 25% for 1981 and 2011 in each case.

SESRTCIC (2007) also observes that the poor in SSA region are estimated to be relatively worse off than their counterparts in other parts of the world. Citing extremely low per capita GDP and savings rates, the study is of the view that most countries of the region are in dire need of substantial public investment through external assistance to reverse the current poverty trends. It is in line with reducing poverty using various measures that the MDGs were

proposed and adopted at Millennium Summit of the United Nations in 2000; and implemented in developing countries including those in SSA (SESRTCIC, 2007).

Jordanna Packtor (2014) notes that seventy-five percent of the world's poorest countries are located in Africa, including Zimbabwe, Liberia and Ethiopia. The Democratic Republic of Congo, Africa's second largest country, has been ranked the poorest in the world. Additionally, ten countries with the highest proportion of residents living in extreme poverty were all in SSA. Thus, those living on US\$1.25 or less a day accounted for 48.5 percent of the population in SSA region in 2010. The author also noted that women in SSA are over 230 times more likely to die during childbirth or pregnancy than women in North America and approximately five percent of the region's gross domestic product (GDP)—exceeding the total amount of foreign aid sent to sub-Saharan Africa in 2003 is lost to water and sanitation problems. Further, of the 738 million people globally who lack access to clean water, 37 percent are living in sub-Saharan Africa with more than 50 percent of Africans estimated to have a water-related illness like cholera and 239 million people (around 30 percent of the population) in sub-Saharan Africa were unable to regularly obtain sufficient food in 2010.

Despite the remarkable growth performance after the global economic crisis which started in 2007, not much has changed with regards to the level of poverty in SSA. Again, several reports⁷ have suggested the unlikelihood of not meeting the MDG goals by countries in SSA by the scheduled time of 2015, therefore more proactive measures need to be put in place to turn the trend in the poverty rates.

UNESCO (2015) also reports on poverty conditions in the SSA region that mortality rates per thousand people remains very high. School enrolment is also estimated to remain very low in comparison to other regions. For instance, mortality rates for 2000 and 2013 were 158 and 93

⁷ See SESRTCIC 2007, MDG Report 2013, MDG Report, UNDP/GHANA (2012), UN/IMF/World Bank (2005), and Agénor et al (2005).

respectively in SSA, compared to 64 and 35, 39 and 18, 32 and 18, 92 and 55 for Central Asia, East Asia/Pacific, Latin America/Caribbean and South/Western Asia respectively between the same periods. School enrolment between 1999 and 2012 for the various regions above follows as 11 and 20 for SSA, 15 and 25 for Central Asia, 38 and 68 for East Asia/Pacific, 54 and 74 for Latin America/Caribbean and 22 and 55 for Western Asia. Average life expectancy is a mere 47 years in 2004 as compared to the world average of 67 (UNESCO, 2015).

2.5 Post-Independence Trade policy

According to the UNCTAD (2008), many countries in Africa including SSA countries adopted an inward-looking policy called Import Substitution Policy (ISP) in the early part of independence, primarily between 1960 and 1980. These policies imposed significant restrictions on importation through various policy approaches. Government intervention in the production and marketing of local produce was strictly enforced.

Beginning from the early part of the 1980s, many economies in Africa began to experience the external shock resulting from the global economic crisis due to the oil shock of 1973 and 1979. This affected the demand for exports from Africa coupled with a fall in the price of export commodities from the region. These imposed so much restriction on export performance of Africa. The constraints eventually signaled the unsustainability of the ISP.

In response to the economic crisis in Africa at the time, the Breton Woods Institutions, led by the IMF advocated a policy package of market-oriented reforms. Under the Structural Adjustment Program (SAP), which was advocated and implemented through the close supervision of the IMF, trade liberalization was an integral part. This has changed the face of trade policies in many developing countries including those in SSA from inward-looking to liberalized trade policies. In another account by Ng and Yeats (2000), they argue that the

inward-looking development policies were believed to be one of the best ways of achieving industrialization by providing a cushion for infant industries, improve foreign exchange reserves, enhance security in food supply, offset negative prospects for primary commodity exports and these objectives were used to justify the establishment of a highly protected, state controlled and anti-export based trade regime. They further indicated that historical developments show these trade regimes, characterized by a lack of transparency and unpredictability, heavily encouraged rent seeking, corruption, and caused the misallocation of economic resources along with other adverse economic consequences. The general failure of these inward oriented policies emphasized that increased openness is the best approach to improving trade performance and achieving higher growth rates.

2.6 Trade Performance

Sub Saharan African countries in general have been marginalized in world trade for various reasons. Hartzenberg (2011) notes that Africa continues to engage at the periphery of the global economy, as is evident from the continent's declining share in global production and trade. The majority of sub-Saharan Africa's 47 countries are small and least developed. Most of Africa's countries have low per capita income levels and small populations which result in small markets. Not only are most SSA economies small and poor, but 15 are also landlocked, an important contributory factor to high trade transaction costs, and more generally to the high costs of doing business in Africa. In addition to border barriers, many other constraints exist, increasing the transaction costs of trade. Geography is an important consideration. Low per capita densities of rail and road transport infrastructure also posed challenges to the transport of goods and services (pp. 4).

Chea (2012) supports the view that SSA countries have been marginalized in trade with his evidence that in 2008 and 2009, SSA accounted for an insignificant 3 percent of global

exports and imports as compared to about 6 percent for Latin America and a massive 27-30 percent per for developing Asia. Even the 10 Association of South East Asian Nations (ASEAN) together accounted for around 6 percent of global trade, twice as high as SSA's share. This limited participation of African countries in world trade is attributable to many factors but a major reason cited in many studies is the protectionist policies of African countries. This position is affirmed in the study by Mwaba (2000) who concluded that studies by Fosu (1990), Ojo and Oshikoya (1995), Ghura and Grennes (1993) and Sachs and Warner (1997) all confirm the negative effects of trade restrictions on growth in Africa.

Chea (2012) indicates further that the last decade was characterized by trade dynamism and enhanced participation⁸ of developing countries which has brought robust growth and important progress towards the Millennium Development Goals (MDG). He observed that as a result of the growth in trade activities, developing countries' share of global exports rose from 31.2 to 38.7 percent and SSA countries for the first time in decades, saw their aggregate share of trade exceeding 1 percent in 2008 but remain marginalized.

Again, Chea (2012) observes that aggregate global export performance of SSAs and Regional Economic Communities in the region outperformed the world average and Asian economies since 2000. Further, during 2002-2009 statistics indicate that real export do not indicate any superior performance of SSA export over developing Asia or developing America. SSA countries' real average growth (3.3 percent) lagged behind both developing Asia (12.7 percent and America (4.3 percent) as well as the world economy as a whole (6.9 percent).

⁸ "This is reflected in developing countries' strong share of global trade in GDP, rising from 35 percent in 2000 to 42 percent in 2008 and from 23 to 29 percent for least developed countries. Merchandise exports expanded annually between 2000 and 2008, averaging 17.1 percent for developing countries, 23.2 percent for least developed countries, 11.2 percent for developed countries and 13.6 percent for global exports. Commodity prices reached historic peaks by mid-2008, especially for metals, minerals, and crude oil".
– Chea (2012, pg 361)

Some common limitations on the share of global trade controlled by SSAs outlined by UNECA (2004), Sindzingre (2007), UNCTAD (2009) and Chea (2012); and for which if addressed can turn around the story in SSA include their failure to produce a diversified range of exportable goods and services, high cost of exporting in terms of the documentation and transportation, weak trade-related infrastructure, market access and entry constraints in developed country markets as well as in South-South markets especially non-tariff barriers and measures inhibiting service exports, lack of credit facilities purposed at supporting the export sector, low policy attention to economic and trade issues in national development strategies and weak trade-related institutional and regulatory measures and the ‘resource curse’⁹ argument.

2.7 Direction of trade

In an argument by Chea (2012), following the dawn of political independence across SSA countries in the 1960s, conscious efforts were made to achieve economic independence by these countries. This enthusiasm led to the popular inward-looking policies of SSA countries initiated to protect and grow infant industries. In his thoughts, this policy orientation to international trade can be said to be responsible for the abysmal growth performance in the 1980s and 1990s mainly due to lack of openness.

Regional integration and increasing the volume of trade activity within the region has also been strongly identified and advocated as a potential source of growth. The shift in policy direction after adopting and implementing the SAP and ERP has brought some concerted efforts to increase exports towards enhancing growth.

Sub Saharan Africa’s intra-regional trade has remained low compared to inter-regional trade over the decades. This position is well noted in the observation by UNECA (2010) that, in

⁹ Which suggests that countries that are well endowed countries with natural resources has the tendency to specialize in resource-intensive exports.

spite of efforts to grow trade among SSAs, the situation is disappointing and has remained consistently low compared with its intercontinental trade.

Hartzenberg (2011) presents a clearer picture of the poor state of intra-SSA trade when he accounts that more than 80 percent of Africa's exports are still destined for outside markets, with the European Union and the United States accounting for more than 50 percent of this total. Asia, and China in particular, are also important export markets for African countries. At the same time, Africa imports more than 90 percent of her goods from outside the continent, despite resource endowments which provide the potential to supply her own import needs.

Historically, Europe was the main trading partner for Africa, and as such World Bank (2004) notes, Africa has tended to view trade with European countries as more important than trade with other regions. During the past decade, SSA countries have increasingly started exploiting new markets, marking what seems to be a historic reorientation of their trade and investment toward new partners, including those within the region. Very importantly, this reorientation has largely occurred through trade creation rather than trade diversion, as engagement with traditional partners has continued to grow in recent years, though at a slower pace than that with new partners, with non-traditional partners accounting for 50 percent and 60 percent of exports and imports, respectively. This reorientation is driven mostly by the large economies of Brazil, India and China (BIC), but also by a substantial increase in trade with partners within SSA. A similar reorientation is also taking place in investment flows, with China now accounting for 16 percent of total foreign direct investment (FDI) flows to the region; other emerging countries are also making considerable investments in SSA (World Bank, 2004).

As evident from Figure 3, the share of SSA trade in terms of export and import between 1995 and 2010 is largely dominated by European partners. Even though the observation below shows that other regions are beginning to increase trade shares with SSA, European exports and imports have continually dominated SSA trade.

Figure 3: Destinations and origin of SSA Exports and Imports: 1995-2015

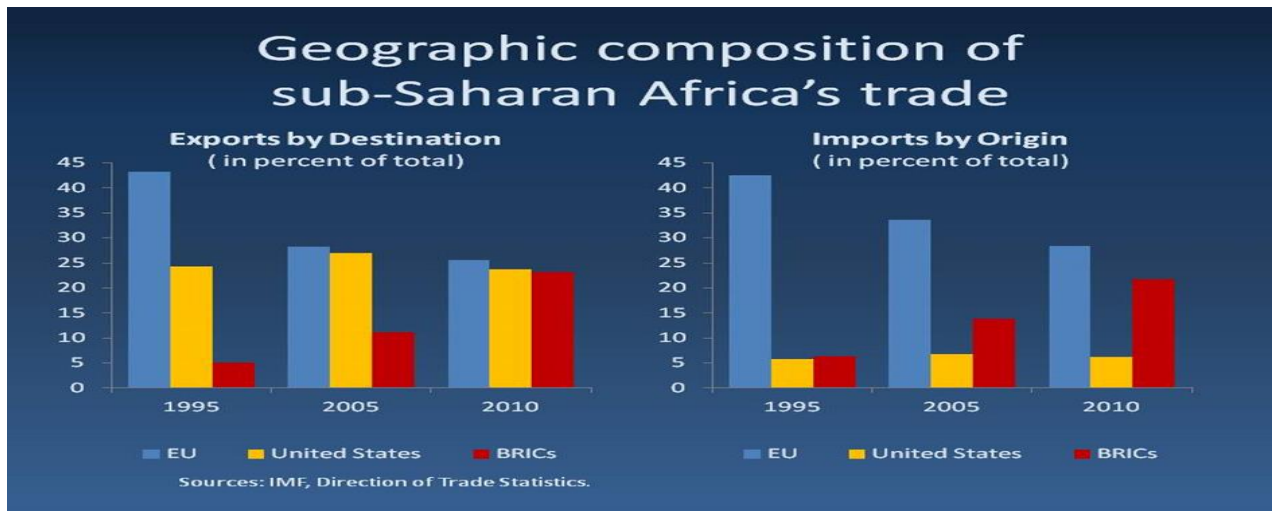
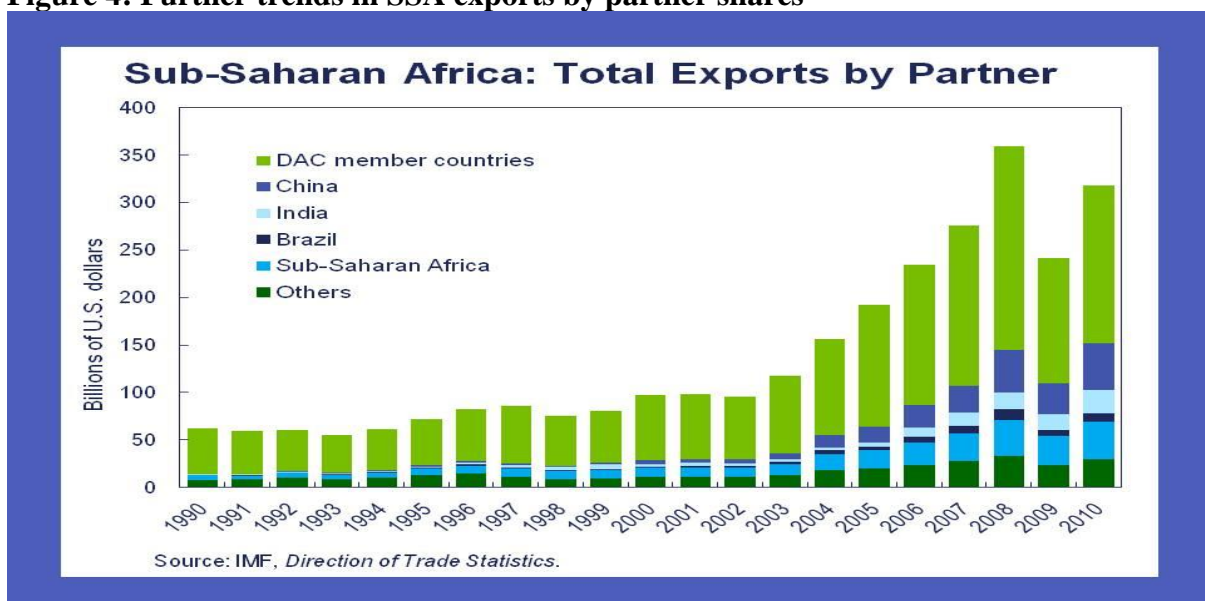


Figure 4 also shows some further dimensions of export destinations to some countries and regions of the World.

Figure 4: Further trends in SSA exports by partner shares



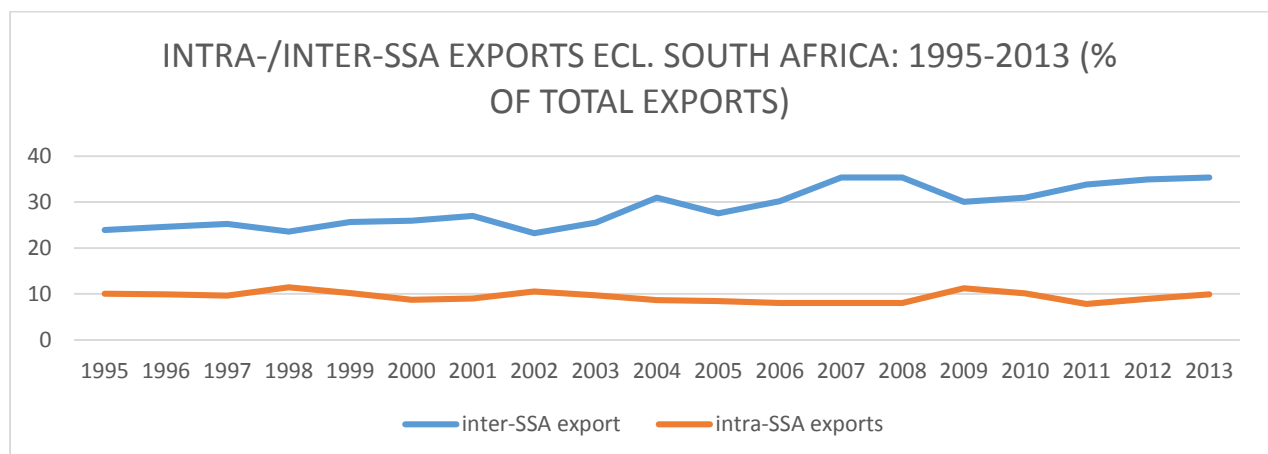
*DAC member countries denote Development Assistance Committee members under the OECD

Sub Saharan Africa's trade with other regions are beginning to take a new trend mainly due to increasing demand for raw materials from these regions and some trade agreements entered into with these regions. For instance, World Bank (2004) observes this phenomenon in SSA countries' trade with the United States of America (USA). It explains that SSA countries' engagement with the USA has only become important through the introduction of the African growth and opportunity act (AGOA) in 2000. The publication also draws attention to the fact that trade with the West has been a significant component of Africa's trade due to the various preferential trade initiatives which some developed countries have pursued with Africa.

Further details on the state of intra-SSA trade by Chea (2012) estimates that trade within the region accounts for a modest global share of less than a tenth, barely more than in 1960. The contribution of intra-SSA to SSA's aggregate trade performance is the lowest compared to other regions. For instance, intra-SSA trade accounted for about 10 percent of SSAs total trade in 2009 as compared to 22 percent of Latin America and 50 percent for Asia. So far intra-SSA trade engagement since the 1980s does not seem to have provided a significant boost.

Figure 5 below shows that inter-SSA exports remains higher than intra-SSA exports from 1995 to 2013.

Figure 5: Intra-SSA and Inter-SSA exports profile



Source: Author's tabulation from UNCTAD database, 2015

Afari-Gyan (2012) estimates that among the several reasons that explain the poor intra-regional trade in SSA include the weak intra-regional trade performance in SSA, one of which is that the approach to regional integration on the continent has so far focused more on the elimination of trade barriers and less on the development of the productive capacities necessary for trade¹⁰. Further explaining, the limited role of the private sector in regional integration initiatives and efforts has also contributed to the weak trade performance of the continent. Another reason cited by UNECA (2013) is that, the emerging rise in Africa's trade with its new partners also contributes to the stalling of intra-regional trade.

2.8 Product Composition of SSA Exports

Africa in general; and specifically SSA countries are said to be net exporters of raw materials and net importers of manufactured goods.

UNCTAD (2008) observes that exports from African countries in general remains largely in primary products because it follows from the Heckscher–Ohlin (H-O) theory, which asserts that a country's export composition reflects its resources. The report suggests further that according to the H-O theory, African countries should specialize in the production of primary commodities, given the continent's relatively generous endowment in natural resources.

Further, UNECA (2013) observes that compared to other regions such as developing Asia and the Americas, SSA's exports are highly concentrated and consist predominantly of fuels and less sophisticated primary products such as tomato, maize, and other cereals.

Considering from a general African perspective, Mutambra (2013) also accounts that Africa's exports are dominated by Fuels which contributed 45 percent to 63percent of Africa's exports

¹⁰She further explains that even though it is important to attach some importance to the elimination of tariff barriers, this may not yield the relevant results if it is not complemented with policy measures to boost supply capacities.

in the period 2001-2011. Fuels together with Ores and metal jointly contributed 52 percent to 72 percent to Africa's exports in this period. He posits that Africa in general is a resource-rich continent, and as per the Heckscher-Ohlin theorem, would logically have most of its exports originating from the mining sector. Until 2007, Africa's manufactured goods exports were mainly those categorized as labor-intensive and resource-based manufactures. After 2007, manufactures with high skill and technology intensity became more dominant followed by manufactures with medium skill and technology intensity (Mutambra, 2013).

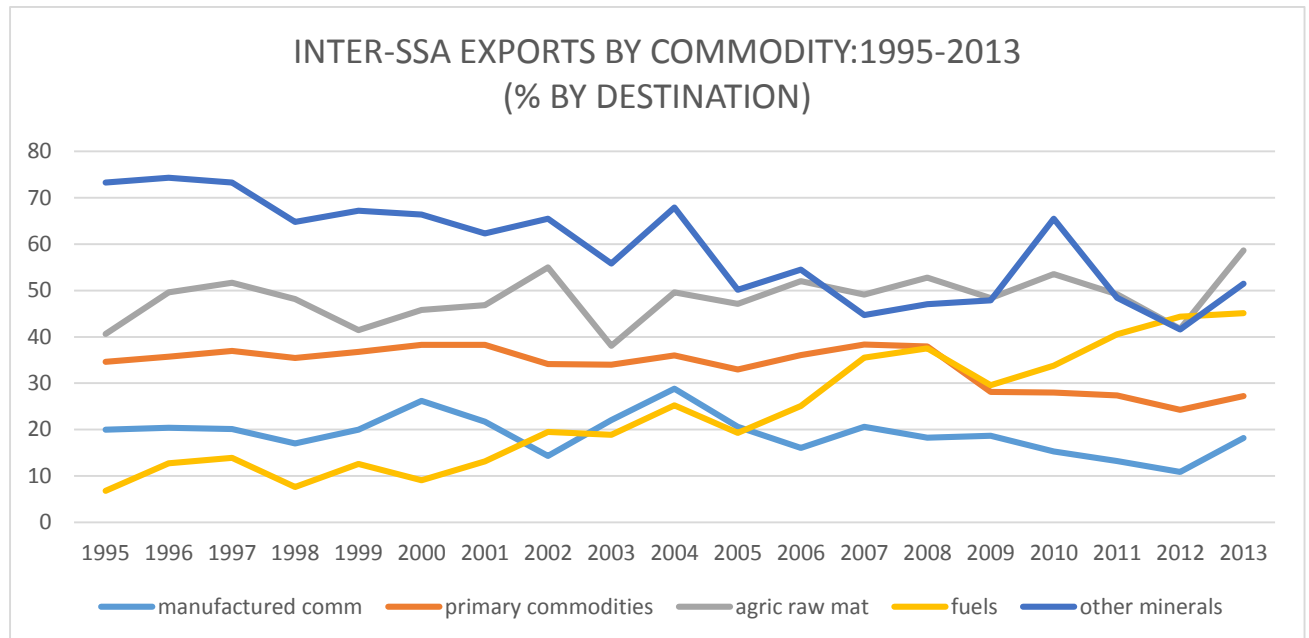
On the other hand, Mutambra (2013) further indicates that the structure of Africa's imports are composed of manufactured products. This category of products constituted 61 percent to 65 percent of Africa's imports in the period 2001 to 2011. African countries are categorized as developing countries and as such their industrial bases are still relatively weaker. As such, from the perspectives of both classical and neoclassical trade theories, Africa's import basket should rightly contain relatively more manufactured goods imported from regions with industrial bases which are more developed and complex.

Chea (2012) estimates that the structure of intra-SSA trade, similar to SSA's trade with the rest of the world, has concentrated on few primary commodities. His outline of the products traded among SSA economies can largely be grouped into two categories: (1) primary commodities including petroleum oils, crude, nickel ores, coal, minerals, carbon, copper ores, tea, lime, gold) and (2) some limited manufactures including printed material, textiles, cement, sleepers of wood, tobacco, tea, ships, boats, aircraft and associated equipment, perfumery and cosmetics .

Figure 6 shows that the structure of inter-SSA exports (exc. South Africa) mainly comprise of minerals, agricultural raw materials, followed by primary commodities and fuels export taking a steady increase right from 1995 to 2013. Exports of manufactures, as indicated

below remains the lowest component of the export commodities from SSAs within the same period.

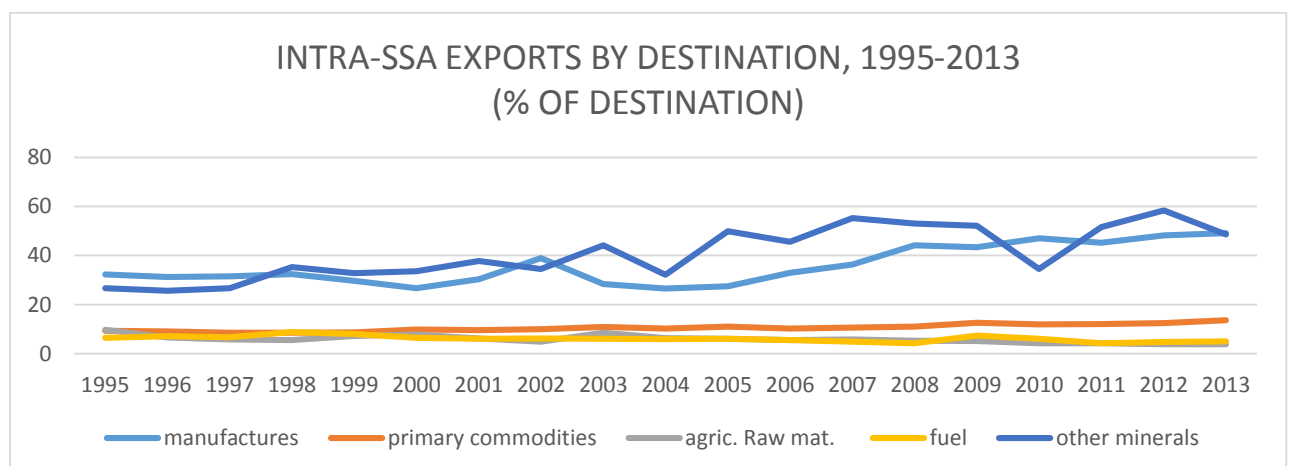
Figure 6: Inter-SSA exports composition from 1995-2013



Source: Author's tabulation from UNCTAD database, 2015

Observation from Figure 7 also indicates that minerals form the major component of intra-SSA exports, followed by manufactures while agricultural goods and fuel being the least intra-SSA exports item. Comparatively, SSA countries trade more in manufactures among themselves than with other regions of the world.

Figure 7: Intra-SSA exports composition from 1995-2013



Source: Author's tabulation from UNCTAD database, 2015

2.9 Concluding Remarks

Largely, SSA countries have performed quite creditably in terms of economic growth in recent years relative to the poor performance in the 1970s to 1990s due to policy shift from import-substitution to more liberalized economies seem to benefit SSA countries. The region's heavy dependence on the export of raw materials largely to other regions of the world contribute to instability in growth trajectory. However, the region remains marginalized in world trade despite concerted efforts to liberalize the economies. A more worrying situation is that; exports within the region remains low compared to other regions of the world. High level of poverty remains one of the greatest challenges of the region, with the region tagged as the poorest in the world. Considering the various reports on poverty conditions in the region from the early 1980s to date, little has improved and therefore more resources and policies must be committed to turning the tides.

Notably, exports composition from SSA countries have been dominant in fuel and other raw materials, with manufactures constituting just an insignificant portion of inter-exports as compared to intra-exports. Given manufactures usually attract higher prices on the international market and enhances the productivity of industry in the exporting country, it can be suggested that SSA countries need to diversify and increase their exports into the area of manufactures in order to benefit more from free trade. Intra-SSA for the period 1995 to 2013 averaged 28 percent as compared to 48 percent to Europe/Central Asia (see Table 1 in appendix).

In the face of poor conditions of living despite greater efforts being made to liberalize SSA economies, this study will seek to ascertain the relative significance of intra-SSA exports and inter-SSA exports on growth in the region.

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

This chapter of the study provides theoretical and empirical underpinnings in support of the study. Literature is reviewed on the theories and empirical works that provide explanations as to how exports in general; and more specifically export destination, matters for economic growth. Section 3.2 presents a review of the theoretical literature on the ELG hypothesis. Section 3.3 also reviews literature on the broad ELG hypothesis. Section 3.4 reviews some of the empirical literature in relation to export by destinations and growth. Finally, section 3.5 concludes on the key observations from the chapter and makes a case for the necessity of this study.

3.2 Theoretical Perspectives

The advancement of argument in favour of exports to improve the well-being of a nation dates back to the 16th and 18th centuries on the popular proposition by the mercantilists. Mercantilism operated on bullionism which suggested that the economic wellbeing of a nation is measured by the amount of precious minerals it possessed. If a country exports more than it imports, the gain in gold and silver increases the country's well-being. This therefore required that nations work towards accumulating surplus bullions. Mercantilism suggests that governments should implement protectionist policies that enhance exports and restrict imports in order to increase the wealth of a nation. The mercantilist proposition can be said to be a zero-sum game in which a nation gains at the expense of the other.

Belief in mercantilism began to fade in the late 18th century, as the arguments of Adam Smith (1776) and other classical economists began to dominate economic thought. Adam Smith criticized the mercantilist argument explaining that; when trade is free, it benefits both parties. In other words, trade is a positive sum game. Adam Smith further argues that

specialization in production allows for economies of scale, which improves efficiency and growth. Again, he pointed out that the mercantilist system sought to benefit government and the bourgeoisies, hence proposed that international trade needs to take into account the welfare of the entire population.

In his Absolute Advantage theory of trade, Adam Smith strongly proposes that when a nation is more efficient in the production of a commodity but is less efficient than the other nation in producing another commodity, then both nations can gain by each specializing in the production of the commodity in which it has absolute advantage and exchange part of its output with the other nation for the commodity in which the second nation has absolute disadvantage. This ensures that resources are utilized most efficiently and enhance higher output than if each nation diversify in the production of the two goods. In this way, specialization as a measure to promote free trade brings gains to the nations involved.

Subsequent to the Absolute Advantage theory was the Comparative Advantage theory by David Ricardo (1817). This theory seeks to provide further argument for promoting free trade even in the presence of no Absolute Advantage for one country while some other country possess Absolute Advantage in producing everything. The principle of comparative advantage therefore hypothesizes that a country should specialize in the production and exporting of the commodity in which it has relative or comparative cost advantage compared to other countries, and imports commodities in which it has comparative cost disadvantage. Thus, a country should specialize in the production and export of the commodity in which it has lower opportunity cost in exchange for commodities which other countries have lower opportunity cost.

Following from the works of Heckscher (1919) and Ohlin (1933) theorem include the works of Stolper-Samuelson (1941) theorem, Rybczynski (1955) theorem, and Linder (1961)

theorem amongst others which lend support to the export-cause-growth framework. These trade models collectively and in various ways predict that an economy will tend to be relatively effective at producing goods that are intensive in the factors with which the country is relatively well endowed (Mwaba, 2000).

Another major explanation of the relationship between exports and national income growth is hitched on the Keynesian national income identity which states that; Aggregate expenditure in an economy is the sum of household expenditure, gross business investment, government expenditure and exports minus imports.

Thus, $Y=C + I + G + X -M$ (1)

Where $dY/dX > 0$ (2)

Dreger and Herzer (2011) supports the neoclassical assertion from a demand-side perspective in which they argue that sustained growth cannot be maintained in domestic markets because of their limited size and hence the need for opening up trade with the rest of the world. Similarly, Maneschiöld (2008) supports this notion by emphasizing that increased openness to trade will enhance competition for firms producing for the international market. Such an environment generates incentives for an increased productivity and incentives for innovations as well as the possibility to pay higher wages in line with the increased productivity. Bbaale and Mutenyo (2011) also argue that the theoretical exposition of the relationship between exports and economic growth is based on the premise that exporting influences economic growth via productivity enhancement.

The hypotheses of the various theories seem to suggest a positive relation between exports and growth. This positive relation is assumed to result from the technology transfer, access to large market (considering the demand potential of the export destinations), productivity enhancement via higher demand from partner countries and the inflow of export related

Foreign Direct Investment (FDI). This interaction may bring about changes in the structure of the economy through institutional changes as well as driving the country towards a particular line of specialization (depending on the commodity demanded by the trading partner). For instance, in the estimation of Balamoune-Lutz (2010), China is beginning to take some large proportion of Africa exports of natural resources and this can influence policies of African governments in this area of trade and the consequent long term effect on growth. This outline may propose that, volume of exports alone is not enough to tell the full effects of export on growth in a country (or region), but also other dimensions such as of export destinations and the feedback effects on growth matters.

In the context of these routes through which exports bring about economic growth as outlined in the preceding paragraphs, total, intra and inter-SSA exports are important in promoting economic growth in SSA. Intra-SSA trade remains low for all these decades despite several attempts by policy makers to improve on the situation as compared to inter-regional trade. This is largely attributed to non-tariff barriers and the similarities shared by export commodities of SSA countries. Despite this situation, intra-regional and inter-regional exports equally have the potential to promote productivity and growth since exporting in general increase market size, create employment and can promote higher productivity.

Before proceeding to add to the stock of existing knowledge on the broader framework of ELG hypothesis and specifically export-destinations-growth analysis, the study reviews two broad categories of empirical research; export destinations-cause-economic growth and studies on the broader Export-Led Growth hypothesis.

3.3 Empirical Results on the General Exports-Growth Hypothesis

This study is not a deviation from the main line of argument that exports-cause-growth but an extension to the argument. Therefore, the study examines some empirical evidence on the

ELG hypothesis from panel and country-specific analysis as follows. The studies in this area are varied and numerous. Those examined below are based on their focus on developing countries and SSA in particular.

3.3.1 Empirical literature review on the ELG from panel studies

Bbaale and Mutenyo (2011), who in their study of the ELG hypothesis argued that it is not exports per se that matters, but different exports components influence growth in varying ways. They employed the GMM estimator to study the relationship between real per capita income and agricultural/manufactured exports in 35 Sub-Saharan African countries. Their results show that growth in agricultural exports is positively and significantly associated with per capita income growth for countries in the sample. However, the contribution of manufactured exports to per capita income growth is insignificant. They therefore concluded that, a growth-enhancing effect can be attributed to agricultural exports and not manufactured export for the case of countries in their sample. The conclusion in this study therefore provides support for the ELG hypothesis.

Mehrara and Firouzjaee (2011) also used Granger causality relationship between non-oil export and economic growth to investigate panel cointegration analysis for 73 developing countries during the period 1970-2007. Their sample countries are categorized into two groups of oil dependent countries and non-oil developing countries. They reported results which show that in both bi- and tri- variate models, there is bi-directional long-run causality between export and GDP growth for both groups of countries. Also, in the bi-variate model, there is bidirectional short-run causality between export and GDP growth for nonoil developing countries. However, for oil countries, there is no short run causality relationship between the oil exports and economic growth, in any of the two models.

Biyase and Zwane (2011) applied five panel data models: pooled ordinary least square (OLS), fixed effects model (FE), random effects model (RE), Two-Stage Least-Squares (2SLS) and generalized methods of moments (GMM) to investigate the link between growth and export for 30 African countries between the period 1990 to 2005. Their results from these models provide evidence that exports cause growth for African countries. Specifically, they estimated that a 1 percent increase in export leads to 0.056 percent increase in economic growth.

Sinoha-Lopete (2006), examines the validity of the Export-Led Growth (ELG) hypothesis in nine Southern African countries using annual data for the period 1980-2002. Using the results of the co-integration tests on both types of bi-variate¹ models show that all three² Granger-causality alternative models fit the ELG study for Southern Africa. In both types of models, the direction of causation (unidirectional or bidirectional) between GDP and exports was tested using Seemingly Unrelated Regression (SUR) system of equations by computing the Likelihood-Ratio (LR) test. Without exogenous variables, the ELG hypothesis is found to be valid in Lesotho and Swaziland, and, with exogenous variables, it is valid in Botswana, Lesotho, and Swaziland. The study concluded that expanding exports can contribute to economic growth, poverty reduction, and job creation in all three countries.

Maneschiöld (2008) analyzed the export-led growth hypothesis for Argentina, Brazil, and Mexico using cointegration and causality techniques. Cointegration is found for Argentina and Mexico in both a pre-break and post-break period. [The break is related to the introduction of the North American Free Trade Agreement (NAFTA)]. It was also found that the causal relationship is either bi-directional or unidirectional from export to GDP revealing support to the hypothesis and therefore favored an outward oriented policy for the countries studied.

Ekanayake (1999) used cointegration and error-correction models to analyze the causal relationship between export growth and economic growth in eight Asian developing countries using annual data from 1960 to 1997. While conventional wisdom suggests that export growth contributes positively to economic growth, this study also provides strong evidence supporting the export-led growth hypothesis. The empirical results show that bi-directional causality exists between export growth and economic growth in India, Indonesia, Korea, Pakistan, Philippines, Sri Lanka and Thailand. There is also evidence for export-led growth in Malaysia. Furthermore, there is evidence for short-run Granger causality running from economic growth to export growth in all cases except Sri Lanka. However, there is no strong evidence for short-run causality running from export growth to economic growth.

Jamal (2010) examines the ELG hypothesis for eight Middle East and North African (MENA) countries. The study utilized Johansen and Juselius cointegration procedure and error correction modeling to test the ELG hypothesis. The empirical evidence supports the existence of a “stable” long-run equilibrium relationship among real output, real exports, terms of trade, and finds strong support for the ELG hypothesis in all but one of the MENA countries analyzed.

Shirazi and Manap (2005) investigated the export-led growth hypothesis for five South Asian countries by employing cointegration and multivariate Granger causality test. The study found strong long-run relationship among exports, imports and real output in all countries except Sri Lanka. Feedback effects existed between exports and GDP for Bangladesh and Nepal, and unidirectional relationship from exports to GDP was found for Pakistan. No causality was found between exports and GDP for Sri-Lanka and India, although it was discovered that exports and GDP induce imports. Feedback effects were also identified between imports and GDP for Pakistan, Bangladesh and Nepal, as well as unidirectional causality from imports to output growth for Sri-Lanka. The study concludes by providing

long run evidence for the export-led growth hypothesis, but contradicts other findings that support the hypothesis in the short run.

Contrary to the general consensus painted about ELG hypothesis in the studies outlined above, some studies had mixed conclusions. For instance, Laszlo (2004) investigated the possibility of export-led growth and growth-driven export by testing for Granger causality between the logarithms of real exports and real GDP in twenty-five OECD countries. Two complementary testing strategies were applied. First, causality was tested with Wald tests within finite-order vector autoregressive (VAR) models in levels and/or in first-differences. Then a modified Wald procedure is used in augmented level VAR systems. The study reports no causality between exports and growth in Luxembourg and in the Netherlands; exports cause growth in Iceland; growth causes exports in Canada, Japan and Korea. Two way causality was noted between exports and growth in Sweden and United Kingdom. The study also concludes with not much level of certainty that there is no causality in Denmark, France, Greece, Hungary and Norway, exports caused growth in Australia, Austria and Ireland, and growth caused exports in Finland, Portugal and the USA. Results on Belgium, Italy, Mexico, New Zealand, Spain and Switzerland were deemed too controversial to pronounce in their estimation.

Anwer and Sampath (1997) hypothesized that economists are divided about the relationship between exports and economic growth. In an attempt to resolve the difference, they examined causality between exports and economic growth by employing the unit root and cointegration techniques for 96 countries for the period of 1960-1992. They had a mixed finding. They discovered that there was no long run relationship for 30 countries; 20 countries show causality at least in one direction, with unidirectional causality from GDP to exports for 12 countries. From exports to GDP, 6 countries show unidirectional relationship and bidirectional causality for 2 countries; and 11 countries do not show any causality between

GDP and exports. Further evidence show that there are only 9 out of 96 countries which show positive impact of economic growth on exports. Contrary to the common thinking that exports promote economic growth, they found that majority of the countries do not show any relationship between exports and economic growth.

Further, Kundu (2013) also investigated the export-led growth (ELG) paradigm for South Asian Association for Regional cooperation (SAARC) countries¹¹ using panel data for the period 1971 to 2011. The paper applied pooled ordinary least square (OLS), fixed effects model (FEM), Random Effects model (REM) and Hausman test. Fixed effects and random effects model lead to conclusion that, there is no significant relationship between the size of GDP growth rate and export rate for these countries. On the other hand, panel unit root tests imply that there is strong evidence of stationary process for both GDP and export at level. The paper concludes that export could be seen as the ‘engine’ of growth in these countries.

Dreger and Herzer (2011) in their study challenged the common view that exports generally contribute more to GDP growth than a pure change in export volume, as the export-led growth hypothesis predicts. Applying panel cointegration techniques to a production function with non-export GDP as the dependent variable, the study found for a sample of 45 developing countries (including 24 countries from Africa) that: positive short-run effect of exports on non-export GDP and vice versa (short-run bidirectional causality), negative long-run effect of exports on non-export output, and large differences in the long-run effect of exports on non-export GDP across countries.

¹¹ Including India, Bangladesh, Srilanka, Pakistan, Nepal, Bhutan, Maldives

3.3.2 Time Series Studies on the Export-growth hypothesis

Similar to the previous section, several country-specific studies have been conducted on the Export-Led Growth hypothesis on countries around the globe. A brief summary of the major conclusions of some the studies assessed in organizing this study are as follows.

Ugochukwu and Chinyere (2013) used data covering the period of 1986 to 2011 to study the export-led growth hypothesis in Nigeria. They employed Ordinary Least Squares (OLS) and Granger Causality test econometric techniques to determine the level of impact export has on growth, or vice versa as well as the direction of causality between them. The result arising from the findings indicates that oil export positively and significantly impacted on the growth of Nigeria's economy for the period under review. It was also shown in the result that non-oil export has a positive and significant impact on GDP. The result of the granger causality test indicates that there is unidirectional causality between oil export and GDP.

Jordaan and Eita (2007) investigated the causal relationship between export and economic growth for Botswana, using quarterly data for the period 1996 to 2007. The results show that there is bi-directional causality between export and economic growth. The results suggest that in order to achieve high economic growth, policies aimed at export expansion should be promoted. It is also necessary to devote resources on the non-export goods and services production in order to increase exports. The results suggest further, that Botswana can expand its limited domestic market by increasing exports.

Gupta et al (2013) investigated the dynamic causal link between exports and economic growth for South Africa using both linear and nonlinear Granger causality tests from 1911-2011. The linear Granger causality result shows no evidence of significant causality between exports and GDP. However, using the Diks and Panchenko (2005) test, they found evidence of significant bi-directional causality. They concluded that South Africa can expand its

domestic market by exporting more both in terms of volume and diversified goods and services.

Enu et al (2013) examined the effect of foreign trade on economic growth in Ghana by using a Johansen cointegration analysis. The results of Johansens's cointegration test indicated that there exist a long run and short run relationship among real gross domestic product, foreign direct investment, exports, imports and foreign direct investment in Ghana. The study also indicated that in the long run, exports had a positive effect on real gross domestic product. Imports and foreign direct investment had a negative effect on real gross domestic product, respectively.

Waithe et al (2011) studied a case of economic growth in Mexico against the backdrop of export-oriented policy reforms in that country in the mid-1980s. Using an export-augmented neoclassical production function, the validity of the Export-led Growth Hypothesis for Mexico was tested over the period 1960-2003. The study employed the multivariate cointegration techniques of Johansen (1988) and Johansen and Juselius (1990), Augmented Dickey-Fuller (ADF) test by Dickey and Fuller (1979, 1981), the Phillips-Perron (PP) test by Phillips and Perron (1988) and the KPSS test by Kwiatkowski et al. (1992) to examine this hypothesis. Evidence offers support for the Hypothesis in the short run; however, contrary to the Hypothesis, long-run results suggest an inverse relationship between exports and GDP. A likely explanation offered by the authors is the high import content and diminishing local content of exports, and weak linkages with domestic suppliers, thus reducing possible spillover or multiplier benefits. The study concludes that if Mexico is to succeed in its quest to achieve high and steady economic growth, current incentive schemes that allow tax-free entry of imported inputs and raw materials for export purposes must be reconsidered. Also, it was suggested that policies that promote technological innovation in manufacturing and linkages with local suppliers are imperative.

Dar et al (2011) revisited the export-growth nexus over the reform period ranging from January 1992 to October 2011 in India. Using the methodology of wavelet correlation and cross correlation and different measurement of time, they found that exports and output are not related in the short run but are related in medium and long run.

Narayan and Smyth (2004) employs cointegration and error-correction modelling to test the causal relationship between real income, exports and human capital stock using data for China over the period 1960 to 1999. In addition to other useful relationships found there is neutrality between real exports and real income.

Yifu Lin and Li (2011) states that many studies, based on the accounting identify of gross domestic product (GDP), found that the contribution of foreign trade to China's economic growth over the past 20 years was very small. The study re-examined the issue and find that those studies underestimate the contribution of exports to GDP growth by overlooking the indirect impacts of exports on domestic consumption, investment, government expenditures and imports. The study proposed and used a new estimation method including Ordinary Least Squares (OLS), Two-Stage Least Squares (2SLS), Three-Stage Least Squares (3SLS) and Seemingly Unrelated Regression (SUR); and find that a 10% increase in exports resulted in a 1 percent increase in GDP in the 1990s in China, when both direct and indirect contributions are considered.

Hameed et al (2012) arguing that the nature of the relationship between exports and country's economic growth has been one of the most debated topic in the recent past, yet with little consensus. They stressed that central to this debate is the question of whether strong economic performance is export-led or growth- driven. Their study then set out to investigate the causality between exports and economic growth of Pakistan, through the application of the Granger causality by using real exports of Pakistan, real GDP of Pakistan, and real terms

of trade of Pakistan. The results are based on annual data collected from 1960 to 2009. The empirical results from Granger causality technique clearly indicate that there exists unidirectional causality from GDP to exports in Pakistan but not vice versa.

3.4 Review of Empirical literature on export destinations and economic growth.

In hypothesizing a probable effect of export destinations to China on growth, Balamoune-Lutz (2010) provides empirical evidence in support of the impact of exports by destination on economic growth. He employed Arellano-Bond GMM estimation technique using panel data over the period 1995-2008 and explores the growth effects of exports from Africa to China. The results indicated that exports to China do not enhance growth unconditionally. Additionally, the results suggest that export concentration enhances the growth effects of exporting to China, implying that countries which export one major commodity to China benefit by a greater proportion than countries that have more diversified exports. He also indicated that contrary to the widely held view that increasing imports from China would have a negative effect, empirical results show that the share of China in a country's total imports has a robust positive effect on growth. The study concludes that results seem to lend credence to the ELG hypothesis, and given that he found strong evidence that exporting to OECD countries has a positive effect on growth in Africa, then export destinations matters.

Santos et al (2013) assessed if and how the product and the destination structures of exports shape the growth dynamics for the EU. They used panel data estimation for 23 of the 27 EU members over the period 1995-2010. They found that economic growth is enhanced through export specialization in high value-added products, such as manufactures and high-technology. In addition the study found evidence that higher growth is fostered by export diversification across partners while enlarging the portfolio of partners, mainly to less

developed and more distant countries, has negative effect on European growth. This study also confirm that export destination matters for economic growth.

Arora and Vamvakidis (2005) examined the extent to which a country's economic growth is influenced by the economies of its trading partners. Panel estimation results based on four decades of data for more than 100 countries show that trading partners' growth has a strong effect on domestic growth, even after controlling for the influence of common global and regional trends. Trading partners' relative income levels are also positively correlated with growth, suggesting that the richer a country's trading partners, the stronger is conditional convergence.

Maswana (2009) suggests that Africa might benefit from China's growth through technology embodied capital goods imports. The findings lend support to the view that the gains from global trade depend less on the mere effects of trading than on the ability of countries to appropriately position themselves along the global value chain.

Bandara (2012) concludes that "Variance decomposition in a VAR system indicate that exports to the rest of the world appear to be still dominant in explaining the variation in economic growth than exports to China both in the past and in recent years in the full sample of all Sub-Saharan African countries. However, exports to China appear to have a stronger influence on economic growth in countries which receive Chinese FDI than the rest. Variance decomposition of GDP growth in this group of countries also appears to support the growing influence of Chinese investments and exports to China on the economy than the rest of the world, particularly in the long run" (pp.1).

Eichengreen et al (2004), using a gravity model of bilateral trade, find that an increase in Chinese output, and thus in both China's appetite for imports and capacity to export,

positively affects the exports of its high-income neighbors but negatively affects the exports of less-developed countries in the region.

In his study of trade openness and growth, Rodríguez (2006) concludes that if there were any significant relationship between trade openness and growth as argued by some early proponents of the hypothesis, then at least that broke down during the 1990s. This conclusion is based on his evidence that more open economies demonstrated negative relationship between openness and growth, while countries that had very restrictive trade policies showed positive relationship between openness and growth. Rodríguez (2006) argued further that coming to a conclusion that openness is an insignificant determinant of growth based on the insignificant relationship between the two variables in the 1990s is inappropriate because the results from studies would produce more meaningful results if country-specific studies are conducted. He also debunked the assertion that the results are indicative of the pitfalls of cross-country regressions.

From a micro-perspective, Vacek (2010) hypothesizes that all markets are not equally valuable for learning and therefore expected firms to benefit more from exporting to developed markets. This further posits that productivity gains from exporting more differ according to the export destination and that exporting to more developed regions brings higher productivity gains. Vacek (2010) employed GMM estimation techniques to show that only exports to more developed countries bring productivity gains to Czech manufacturing firms. Another study by Shevtsova (2012), applying the propensity score matching (PSM) technique found that Ukrainian firms that export to the European Union and other OECD countries experience higher advances in their total factor productivity (TFP) than firms exporting to Commonwealth of Independent States (CIS) countries. Further, Rankin and Schöer (2010) used the Instrumental Variables (IV) estimation technique to show that workers in South African firms that export to the region earn less than those that produce for

the domestic market. Those firms that export outside the region earn more than either domestic producers or Southern African Development (SADC) only exporters. The results support previous theoretical and empirical works which suggests that export destination is related to product quality which in turn is related to worker quality and therefore wages.

In similar discovery, Barboni et al (2013) studied the effect of export destinations on Total Factor Productivity (TFP) of manufacturing firms in Uruguay for the period 1997-2006, and found that, just like national and international evidence, exporting firms exhibit higher productivity levels than non-exporting ones. Additionally, the evidence found that the differentials in productivity are higher for those firms that have developed countries as their main export destination. Such firms are argued to be characterized by higher export propensity and size with respect to those firms exporting to markets of similar or lower level of development than Uruguay.

Cebeci (2014) evaluates the role of export destinations on productivity, employment, and wages of Turkish firms by comparing the performance of firms that export to low-income destinations and high-income destinations with firms that do not export. Cebeci (2014) concludes that exporting per-se results in persistently higher firm TFP and employment starting from the year of entry into export markets but in a moderate wage effect that starts only after the second year of exporting. The study additionally observes that unlike exporting to high-income destinations, exporting to low-income destinations does not result in significantly higher TFP and wages. Employment effects of exporting to low-income destinations are comparable to those of exporting to high-income destinations, however.

With evidence from these micro-based empirical studies and other relevant studies cited elsewhere, there seem to be some coherent conclusion that export destination matters for productivity at least at the firm level. These may suggest implications for macroeconomic

performance since the macro performance comprises of the aggregation of the micro level outcomes.

3.5 Concluding Remarks

Empirical studies on the export-destinations and growth hypothesis is quite rare. However, the few cited in this tour of empirical literature show the results available do not share consensus and therefore the need for further studies on the hypothesis. With particular reference to SSA countries where the question of what the effect of the high level of engagement with other regions (particularly Europe) comparative to the low intra-regional export has served on the growth advancement in the region remains unanswered. Some studies on micro units (firms) also share in this inconclusiveness on how the effects of exporting to some specific destinations provide impetus for firm level growth. If this micro-level findings can be extended to the macro-level, then the hypothesis has no different situation from the broader ELG hypothesis.

From the broader literature on the ELG hypothesis, many studies have employed some of the traditional methods of establishing econometric relationship between exports and economic growth. Some of the multivariate regression techniques used in previous analysis include the Ordinary Least Squares method (OLS), Granger Causality Test, Variance Auto-Regressive (VAR) model, Augmented Dicker-Fulley (ADF), Unit Root, Cointegration test approach, 2SLS method, pooled regression amongst others. Some recent studies have attempted to obtain a more conclusive reports on this relationship by using different units of analysis and more recently developed methodologies such as Random Effects (RE), Fixed Effects (FE) and Generalized Methods of Moment (GMM).

However, these newer approaches to the export-growth perspective have not resolved the inconclusiveness on the consensus, and therefore provokes further studies. This study

therefore aims at providing an extension to the ELG hypothesis by employing the appropriate static / dynamic panel estimation techniques to consider the differential effects of intra-SSA destined exports and inter-SSA destined exports on growth in the region (i.e. to explore whether export destinations matter in SSA).

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

This chapter discusses the theoretical framework and statistical techniques to be employed in examining the relationship between per capita GDP growth and Intra/Inter SSA exports. This chapter is divided into six sections. The theoretical framework is discussed in section 4.2. Section 4.3 discusses the model for empirical estimation Section 4.4 describes the variables employed in the study and the source of data for the analysis. Section 4.5 discusses the estimation technique employed. In Section 4.6, some diagnostic tests on the model are discussed, and finally the conclusion in Section 4.7.

4.2 Theoretical framework

The model to be estimated follows the traditional neoclassical growth model adopted in many empirical studies conducted on the ELG hypothesis. The neoclassical trade theory estimated in this study is adopted and modified from the study by Fosu (2000) in which a neoclassical production function framework incorporates an additional factor of production (exports) into the production function is used. Exports by their destinations are incorporated into the production function to capture their relationship with GDP per capita growth. The augmented neoclassical production function is specified as follows:

$$Y=F(K, L, X) \dots \dots \dots (3)$$

Where Y is GDP per capita growth, K is capital stock, L is labour force, and X represents exports.

Similar to intuition provided by Fosu (2000), the inclusion of exports (i.e. intra-SSA exports and inter-SSA exports) are not a proper argument of the production function since it is not a production input in the neoclassical sense. However, the exports by destination are included to capture the productivity enhancing effects of the large market derived from exporting to

given destinations, the technology transfer that occurs in international trade etc., which may influence productivity but are not captured in L or K.

Taking total differential of the variables:

$$Y' = e_k K' + e_l L' + e_x X' \dots \dots \dots (4)$$

Where Y', L', K' and X' are the growth rates of Y, K, L and X respectively, and e_L , e_K and e_X are the respective elasticities with respect to L, K and X. For estimation purposes, the modified version of the above homogeneous equation (3) may be written as:

$$Y' = b_1 + b_2 L' + b_3 K' + b_4 X' + u \dots \dots \dots (5)$$

Where b_1 is the constant term to allow for possible nonhomogeneity of the function; b_j ($j=1, 2, 3$) are the respective labour, capital and exports coefficients to be estimated; and u is the stochastic error term.

According to neoclassical economic thought, both growth of capital and labour are hypothesized to have direct relationship with GDP per capita growth, except if the capital-labour ratio declines. Additionally, exports,—irrespective of their destination are expected to have positive effect on GDP per capita growth due to the spillover effects of technology transfer, enhanced market size, economies of scale etc., that results from exporting. However, as empirically observed in the works of Baliaoune-Lutz (2010), Baliaoune (2002), Rodrik (1997), Chea (2012) and Mukhopadhyay (1999), trade liberalization or openness (exporting) may not necessarily result in growth but could adversely affect per capita GDP growth.

4.3 Model for Empirical Estimation

In accordance with recent developments in software for estimating panel regression relationships, this study will employ the Stata Corp's 13 software package to run static and dynamic panel estimates of intra and inter-SSA exports on per capita GDP growth.

The panel estimation is adopted to capture both between and within variations. Compared to conducting a time series analysis on the hypothesis, the panel approach can be preferred because panel data gives more informative data, more variability, less collinearity among variables, higher degrees of freedom and more efficiency (Gujarati, 2004). Further, the panel approach to studying any economic-phenomenon allows us to study individual dynamics and give information on the time-ordering of events and allows us to collate data on as many entities (or countries). Panel analysis also enables the study of more complex behavioral models and makes it possible to account for certain unobserved individual country characteristics that are invariant with time which may cause differences in export-destinations-GDP per capita growth relationship.

The model below adopted and modified from the work of Biyase and Zwane (2011) will be used to estimate the relationship between intra/inter-SSA exports and real per capita GDP growth under the static and dynamic panel assumptions respectively. Equations (5) and (6) respectively specifies the static and dynamic panel models to be estimated.

$$\text{GPC}_{git} = \beta_0 + \beta_1(\text{INTRA_EXP})_{it} + \beta_2(\text{INTER_EXP})_{it} + \beta_3(\text{CAPITAL})_{it} + \beta_4(\text{LABFOR})_{it} + \beta_5(\text{INFL})_{it} + \gamma_{it} \dots \dots \dots (5)$$

$$\text{GPC}_{git} = \text{GPC}_{git-1} + \beta_1(\text{INTRA_EXP})_{it} + \beta_2(\text{INTER_EXP})_{it} + \beta_3(\text{CAPITAL})_{it} + \beta_4(\text{LABFOR})_{it} + \beta_5(\text{INFL})_{it} + \gamma_{it} \dots \dots \dots (6)$$

Where: i represents each country; t represents each time period; GPC_{git} is annual GDP Per Capita growth for country i during period t; GPC_{git-1} is the first lag of real GDP per capital,

$(INTRA_EXP)_{it}$ is Intra-SSA Exports; $(INTER_EXP)_{it}$ is intra-SSA Exports; $(INFL)_{it}$ denotes Inflation; $(CAPITAL)_{it}$ is Gross Domestic Private Investment and $(LABFOR)_{it}$ is Labour force; for country i during period t respectively. The β s are the coefficients to be estimated and γ_{it} is the error term.

Before proceeding to estimate equation (6), the study will first attempt to establish the ELG hypothesis by considering the relationship between total exports growth and GDP per capita growth.

4.4 Description of Variables and Data Source

This subsection is a summarized explanation of the variables included in the panel data model of 29 SSA countries for the period 1985 to 2013. The choice of countries included is based on data availability. Also, the choice of included variables for this study is guided by classical and neoclassical economic growth models and existing empirical studies on the export-by-destination growth hypothesis. The variables under consideration include: Real per capita GDP growth, share of exports to SSA countries (intra-SSA exports), share of exports to Europe/Central Asia (inter-SSA exports), gross domestic investment as a percentage of GDP, inflation (percentage change in average consumer price index) and labour force (percentage population aged between 15 and 64). Data on all the variables are obtained from World Integrated Trade Solution (WITS) Online Database 2015, International Monetary Fund's World Economic Outlook Database 2015 and World Development Indicators (WDI) Database 2015.

Real GDP Per Capita: This is the explained variable in the study. In the neoclassical models of growth, initial income is often used to capture conditional convergence. Despite the controversy regarding the use of per capita income as a proxy for the measurement of welfare, it remains the most widely used measure of comparing welfare across countries. Stewart (1974) argues that critics of economic growth, as measured by national income tend

to emphasize the growth of material welfare while ignoring what is happening to the “quality of life” or “social welfare. Nordhaus and Tobin (1972) share in this criticism of national income and its derivatives as measures of welfare, and propose alternative measures of welfare which accounts for environmental defects on enhanced productivity. Van den Bergh and Antal (2014) put forward similar arguments against the use of per capita income as measure of welfare and propose four alternative ways of better measuring welfare¹². Despite the oppositions, they all allude to the widespread usage and convenience of using per capita income as a measure of welfare. This study proceeds to use real per capita GDP growth as the proxy for capturing welfare due to its theoretical and empirical underpinnings as a measure of welfare.

Exports: This variable is key in this study as it forms the backbone of the hypothesis to be tested. The exports variable in this study is categorized into three parts, namely; 1) total exports growth 2) exports from SSA countries to other countries within the region (i.e. intra-SSA exports) and 3) exports to countries outside SSA (i.e. inter-SSA exports). This is done with the main objective of first of all establishing the ELG hypothesis and then capturing the differential effects of intra- and inter-SSA exports on GDP per capita growth. Empirical studies on the ELG hypothesis over the years have had some mixed results in terms of the impact of export (in whatever categorization) on economic growth. However, drawing inference from the traditional theories of international trade including Keynes, Ricardo and Heckscher-Ohlin, as well as a plethora of empirical literature that agree on the positive effect of exports on economic growth, this study hypothesizes positive effects of total, intra-SSA and inter-SSA exports on per capita income. In considering the relationship between destinations and economic growth, Baliamoune-Lutz (2010) for instance found a positive relation between African exports to OECD countries and economic growth in the region. This

¹² see van den Bergh and Antal (2014)

study uses data on total exports as a percentage of GDP and intra/inter-SSA exports as a share of total exports. For inter-SSA exports, the study uses exports from SSA countries to Europe/Central Asia not only based on data availability but the fact that Europe remains the largest destination of SSA exports.

Gross Capital Formation: In line with the Keynesian aggregate expenditure identity and the Solow growth model, an increase in the level of domestic private investment has positive effect on national income, and consequently per capita income growth; all things being equal. According to the predictions of the augmented Solow model, an increase in capital formation would raise the steady state of capital per worker. This brings about an increase in output per effective worker; and hence higher growth. Empirically, Mankiw et al (1992) in their study of the Solow model demonstrated that increased stock of physical capital has significant positive effects on growth. UNCTAD (2013) advocates that an expansion of intra-African trade requires investments in infrastructure and in building productive capacity for trade. The report concludes that if African governments wish to enhance the likelihood of achieving the objective of boosting intra-African trade, they have to intensify efforts to increase domestic investment. Biyase and Zwane (2011) reckon that investment is a component of aggregate expenditure, thus an increase in investment will lead to an increase in economic growth and development. By implication therefore, it is expected that gross capital formation will bear a positive relationship with real per capita GDP growth. This study will use gross fixed capital formation as a percentage of GDP as a proxy for physical domestic capital to capture the productivity and welfare enhancing effects of increased investment in stock of capital.

Population: The effect of population on economic performance can be either negative or positive depending on the quality of the labour force and the impact on investment decisions. From the augmented Solow model, countries with high population growth rate would have very low capital-labour ratio and hence record low growth rates in per capita output. In the

empirical study by Mankiw et al (1992), evidence shows that high population growth negatively affects economic growth. The explanation for this result is that in case of high population growth, per head capital stock would decline and contribute to low productivity and consequently low economic performance. Opposed to the Solow explanation, it can be argued as put forward by Hodey (2013) that a larger population dominated by quality (well educated) labour force provides the high calibre of human resource required for accelerated economic performance. Also, large population size would provide large market for domestic producers, and hence motivate them to boost production through higher domestic and foreign investment. This would eventually result in large scale production and the associated benefits in terms of economies of scale. Based on the above exposition, the expected relation between population and per capita income could be positive or negative. The percentage population between 15 and 64 years which constitutes the true labour force population; per the internationally accepted definition by International Labour Organization (ILO) will be used in the empirical estimation.

Inflation: Inflation means an increase in the general price level over time, usually one year. When prices of goods and services are high, aggregate demand falls and hence productivity reduces. This leads to deterioration in welfare (Biyase and Zwane, 2011). Therefore in principle, high rate of inflation reduces the purchasing power of consumers, accompanied by a deteriorating effect on economic performance. Pollin and Zhu (2005), Judson and Orphanides (1999) in their empirical studies lend support to the explanation that there is a negative relationship between inflation and economic growth. Similarly, Bbaale and Mutenyio (2011) found negative relation between inflation and per capita income and explains that the negative sign implies that an excessive increase in prices in an economy is a sign of macroeconomic instability and therefore retards economic growth. In line with the above therefore, the study includes the inflation variable to capture the deteriorating effect of

inflation on the competitiveness of SSA exports, and indirectly on per capita GDP growth. It will be expected that the effect of inflation on per capita income will be negative.

Table 1 below summarizes the details on the explanatory variables on the study.

Table 1: Explanatory variables, expected Signs and data source

VARIABLE	INDICATOR	EXPECTED SIGN OF COEFFICIENT	DATA SOURCE
Intra-SSA exports	Share of total exports	Positive (+)	WITS
Inter-SSA exports	Share of total exports	Positive (+)	WITS
Total exports growth	Annual percentage change	Positive (+)	World Bank
Gross capital formation	Percentage of GDP	Positive (+)	World Bank
Labour force	Percentage of population	Positive/negative (+/-)	World Bank
Inflation	Percentage change in CPI	Negative (-)	IMF

Source: Author's compilation

4.5 Estimation Technique

One of the useful and widely applied estimation techniques for regression analysis of economic relationship has been the Ordinary Least Squares (OLS) technique, especially in time series analysis. In spite of its usefulness over the years, one common problem that has rendered the estimates using OLS biased and inconsistent is the problem of endogeneity¹³. This problem is dealt with in this study using the appropriate model beyond the pooled OLS. Beyond pooled OLS, the estimation process will choose the appropriate model between the Random Effects Model (REM) and Fixed Effects Model (FEM) based on relevant assumptions. Additionally, when appropriate criteria are satisfied, the General Method of Moments (GMM) techniques will be used to improve on efficiency.

¹³ This is the situation where at least an explanatory variable is correlated with the error term. This could result from unobserved heterogeneity, simultaneity, omitted variable bias and measurement error.

4.5.1 Pooled OLS

According to Greene (2010), the pooled model is also called the *population averaged model* under the assumption that any latent heterogeneity has been averaged out. He further explains that the pooled OLS assume that all cross-sectional units are the same. Thus, the pooled OLS estimator is obtained by stacking the data over i and t into one long regression with NT observations, and estimating by OLS (Cameron and Trivedi, 2005)

The general form of the pooled OLS can be stated as:

$$y_{it} = \alpha + x'_{it}\beta + \varepsilon_{it} \dots\dots\dots(7)$$

Where $i=1 \dots\dots n$, $t=1 \dots\dots T_t$

With the assumption that;

$$E [\varepsilon_{it}|x_{t1}, x_{t2}, \dots\dots, X_{tTt}] = 0$$

$$Var [\varepsilon_{it}|x_{t1}, x_{t2}, \dots\dots, X_{tTt}] = \sigma_\varepsilon^2$$

$$Cov [\varepsilon_{it}, \varepsilon_{js}| x_{t1}, x_{t2}, \dots\dots, X_{tTt}] = 0, \text{ if } i \neq j \text{ or } t \neq s$$

Thus, with the assumptions of zero conditional mean of ε_{it} , homoscedasticity, independence across observations, i , and strict exogeneity of x_{it} , then pooled OLS is appropriate for estimating the panel analysis. The pooled OLS under panel analysis comes with merits of being able to capture variations that do not only emerge through time or space, but the variation of these two dimensions simultaneously. This is because, instead of testing a cross-section model for all countries at one point in time or testing a time series model for one country using time series data, a pooled model is tested for all countries through time. Additionally, the small sample problem suffered by both time series and cross-sectional analysis is captured. The $N \times T$ dimension of the pooled OLS analysis helps to avoid the small sample problem and increases the degree of freedom. Also, pooled models have gained

popularity because they permit inquiry into “variables” that elude study in simple cross-sectional or time-series.

Despite the merits of the pooled model outlined above, the model is not without weaknesses. Stimson (1985) explains that the basic assumptions underlying traditional OLS regression are violated in a pooled model, and such departures may exhibit severe consequences for the reliability of the estimators. This is because if the unobserved effect is combined with the idiosyncratic error term to form the composite error term, assuming that the idiosyncratic error term is uncorrelated with the regressors alone does not guarantee an unbiased and inconsistent estimators of the pooled OLS. Thus, because of possible heterogeneity bias (i.e. correlation between the country-specific unobserved effect and the explanatory variables) the parameter estimates would be rendered biased and inconsistent. Hence, pooled OLS estimator is not ideal due to possible correlation between the unobserved effect and the explanatory variables.

The above deficiencies therefore calls for consideration of a model that at least takes into account the possible correlation between the unobserved effect and the explanatory variables.

4.5.2 Random Effects Model (REM)

Given the earlier model in (7) as:

$$y_{it} = \alpha + x'_{it}\beta + \varepsilon_{it}$$

Where $i=1, \dots, n$, $t=1, \dots, T$

A major assumption for applying the pooled model is that correlation between the error terms of different time periods is zero. However, Schmidheiny (2014) explains that the observations are independent across individuals but not necessarily across time. This is guaranteed by random sampling of individuals. With panel data, there is always reason to suspect that the errors of an entity, ε_{it} are correlated over time (autocorrelation). When dealing with panel

dataset it cannot be overlooked that the observations are independently distributed across time and therefore serial correlation of regression residuals becomes an issue. Unobserved factors, while acting differently on different cross-sectional units, may have a lasting effect upon the same statistical unit when followed through time.

From the foregoing therefore, to apply the REM we assume that the individual-entity specific effects are uncorrelated with the independent variables. Thus, most factors causing differences between entities in a panel data are not observable. Therefore they have to be treated as errors. The approach in panel data analysis is to add an error term that varies between entities, but is constant within entities. The REM therefore is a model that takes into account the fact that observations are not independent across time and entities. In doing so, equation 4.6 can be re-stated as follows under the REM.

$$y_{it} = \alpha + \beta_1 x_{it} + v_i + \varepsilon_{it} \dots \dots \dots (8)$$

ε_{it} are assumed independent of traditional error term v_{it} and regressors x_{it} , which are also independent of each other for all i and t . Here the unobservable component, v_i , is treated as a component of the random error term. v_i is the element of the error which varies between groups but not within groups. ε_{it} is the element of the error which varies over group and time.

4.5.3 Fixed Effects Model (FEM)

FEM is appropriate and alternative approach to the REM in situations where the individual-specific intercept may be correlated with one or more regressors. Thus, the term “fixed effects” is due to the fact that, although the intercept may differ across entities, each entity’s intercept does not vary over time; that is, it is time invariant. The unobserved variable, v_i in equation (7) takes into account the differing intercepts, one can use dummy variables. The dummies seek to capture the possible errors that account for differences between the entities.

In FEM, the intercept in the regression model is allowed to differ among individuals in recognition of the fact that each entity, or cross-sectional unit may have some special characteristics of its own.

In applying the FEM as alternative model to the REM, it is assumed that the unobserved variable that varies from one entity (country) to another, v_i does not vary over time and correlated with the regressor. Estimating equation (7) by OLS would be problematic if the heterogeneity term, v_i is correlated with x —thus $(x_i, v_i) \neq 0$.

The panel data solution to the problem of correlated effects is to eliminate them by using suitable transformation of the data. There are 2 methods of transforming the data to eliminate the correlated effects under the FEM:

- The within transformation, and
- The first difference transformation.

The within transformation transforms equation (7) by differencing with the average of each variable for each entity. In this process the unobserved variable remains the same and therefore the differencing process eliminates it. While the first difference transformation transforms equation (7) by differencing with the lagged values of the variables for each entity.

The within and first-difference transformations adjusts the transformed error term for serial correlation within each unit. The differencing process therefore eliminates the country-specific effects from the equation. The presence of heteroscedasticity in the estimation model would therefore favour the FE model, as it assumes heterogeneity in the error term across countries.

4.5.4 Choice of Model for Static Panel Estimation

In estimating the empirical model in equation (5), the appropriateness of the pooled model or REM will be determined by testing for country heterogeneity using the Breusch-Pagan Lagrangian Multiplier test. This is the test for the significance of the parameter for the individual heterogeneity. If the parameter is significant, we reject the null hypothesis and conclude that the REM is preferred over the pooled regression. For purposes of not overlooking possible correlation between unobserved country-specific characteristics that are time-invariant but correlated with the error term, the Hausman test will be conducted to test the appropriateness of the REM or FEM. Rejecting the null¹⁴ hypothesis will imply that the model favours the use of the FEM, else the REM will be favoured.

The various other approaches to estimating equation (6) include Instrumental Variable (IV) and the Two-Stage Least Squares (2SLS) estimation techniques; which are special cases of the GMM technique. These techniques are applicable as alternatives if the model fits the FEM technique. These techniques could equally be used to estimate the regression equation in which some variables are suspected to be endogenous; but the limitation is that they make use of “external” instruments. The problem with using external instruments is that they are usually weak and hardly satisfy the conditions of “validity and relevance” in order to yield unbiased estimates. It is also very difficult to obtain instruments which are correlated with the endogenous variables and at the same time uncorrelated with the stochastic error terms.

Under the circumstance of finding “valid and relevant” instruments, the GMM technique is preferable as it uses the lagged values of the endogenous regressors as valid instruments; in which case the endogenous variables are predetermined and are therefore not correlated with the stochastic error terms (Biyase and Zwane, 2011).

¹⁴ . The Hausman specification test (Hausman, 1978) compares a random effect model to its fixed counterpart. If the null hypothesis that the individual effects are uncorrelated with the other regressors is not rejected, a random effect model is favored over its fixed counterpart

When the necessary conditions are satisfied, the GMM technique will be used to estimate and explain the relationships stated in the objectives of the study as captured in equation (6). This methodology is best suited for dynamic panel models because it eliminates the “dynamic panel bias” problem which results from endogeneity associated with such models. In the presence of dynamic panel bias in equation (6), the OLS estimators yield inconsistent and positive biases.

The GMM technique was introduced by Arellano and Bond (1991) which yields efficient estimates, brings with it the advantage of consistency in the presence of arbitrary heteroscedasticity, but at a cost of possibly poor finite sample performance (Baum, 2003). In order to deal with the endogeneity problem under the OLS, the dynamic panel model has proven to be best estimated using the GMM estimation technique. Additionally, in estimating growth models, GMM is superior over other estimators for simple cross-section regressions and other dynamic panel data models. This is because the methodology eliminates biases originating from:

- Omitted variables
- Endogenous right-hand-side variables
- Omission of initial efficiency, and
- Presence of measurement error

The Arellano and Bond (1991) technique is based on the notion that the instrumental variables approach does not exploit all of the information available in the sample. By doing so in a GMM context, the method may construct more efficient estimates of the dynamic panel data model.

Indeed, two types of GMM estimation approach are known, namely;

1. The differenced GMM (Arellano and Bond, 1991), and
2. The system GMM (Arellano and Bover, 1995 & Blundell and Bond, 1998)

Both are general estimators designed for situations with:

- “small T, large N” panels, meaning few time periods and many individuals
- a linear functional relationship
- one left-hand-side variable that is dynamic, depending on its own past realizations
- independent variables that are not strictly exogenous, meaning they are correlated with past and possibly current realizations of the error
- fixed individual effects; and
- Heteroscedasticity and autocorrelation within individuals but not across them.

Additionally, because the estimators are designed for general use, they do not assume that good instruments are available outside the immediate dataset. In effect, it is assumed that the only available instruments are “internal”—based on lags of the instrumented variables (even though this may be relaxed under some circumstances).

Arellano–Bond estimation starts by transforming all regressors, usually by differencing, and uses the GMM (Hansen 1982), and it is called difference GMM. The Arellano–Bover/Blundell–Bond estimator augments Arellano–Bond by making an additional assumption that first differences of instrument variables are uncorrelated with the fixed effects. This allows the introduction of more instruments and can dramatically improve efficiency. It builds a system of two equations—the original equation and the transformed one—and is known as system GMM (Rodman, 2009).

Differencing equation (7) in order to apply the differenced GMM yields the following equations:

$$y_{it} - y_{i,t-1} = \alpha_1(y_{i,t-1} - y_{i,t-2}) + \alpha_2(x_{it} - x_{i,t-1}) + (v_{it} - v_{i,t-1}) \dots \dots \dots (9)$$

Equation (8) can be simplified as:

$$\Delta y_{it} = \Delta y_{i,t-1} + \Delta x' \beta_{it} + \Delta v_{it} \dots \dots \dots (10)$$

By transforming the regressors through first differencing, the fixed country-specific effect is removed; thereby dealing with the inconsistency and biases resulting from the endogeneity of the explanatory variables by using lagged values of the endogenous explanatory variables as instruments. The first-differenced lagged dependent variable is also instrumented with its past levels.

The differenced GMM estimator is based on the following moment conditions under the assumptions that the regressors are weakly exogenous and the error term is not serially correlated spelt out as;

$$E[y_{i,t-1}(v_{it} - v_{i,t-1})] = 0, \text{ for } t= 2,3 \dots \dots T \dots \dots \dots (11)$$

$$E[x_{i,t-1}(v_{it} - v_{i,t-1})] = 0, \text{ for } t= 2,3 \dots \dots T \dots \dots \dots (12)$$

The differenced GMM is not without statistical and conceptual shortcomings. In the first place, the time-invariant country-specific effects may be of interest in the estimation process. Therefore, completely eliminating them may lead to misspecification problems. Secondly, the procedure poses serious biases when the dependent variable is highly persistent, and there is a weak correlation between the instruments and the endogenous variables (weak instruments). Weak instruments are harmful to the small-sample and asymptotic properties of the differenced estimator. The weak instruments actually increase the variance of the coefficients and bias the coefficients in small samples. The real per capita GDP in the estimation model is considered to be highly persistent, thereby rendering the differenced GMM estimator not be very appropriate for estimating equation (6) (Hodey, 2013).

Sometimes the lagged levels of the regressors are poor instruments for the first-differenced regressors. In this case, one should use the augmented version – “system GMM”. The system GMM estimator uses the levels equation to obtain a system of two equations: one differenced and one in levels. By adding the second equation additional instruments can be obtained. Thus the variables in levels in the second equation are instrumented with their own first differences Mileva (2007). Thus, provided that some persistency is present in the series, the system GMM estimator yields the results with increased efficiency and lowest bias.

In spite of the seeming superiority of the system GMM over the differenced GMM, the instruments used must be valid in order for the system GMM estimator to give consistent and reliable estimates.

4.6 Diagnostic tests

In order to justify the appropriateness or otherwise, as well as prove the basic assumptions underlying the chosen estimation technique. The possible methodological problems to be encountered in the estimation of equations (6) include the problem of non-stationarity, serial correlation & heteroscedasticity and endogeneity.

4.6.1 Endogeneity

Endogeneity is said to occur in estimating econometric relationship such as the one in equation (6) when there is correlation between any of the explanatory variables (x_{it}) and the stochastic error term (u_{it}) i.e. $\text{Cov}(u_{it}, x_{it}) \neq 0$.

The condition of endogeneity may occur as a result of:

- Omission of relevant time-varying factors,
- Simultaneous responses to idiosyncratic shocks,
- Measurement error.

Often failure to establish a one-way causal relationship in an econometric model also leads to problem of endogeneity, it is important to confirm or reject the presence of endogeneity since lagged values of the independent variables are used as instruments. The presence of endogeneity causes the usual OLS estimates to be biased and cannot be relied upon for inference. However, the system GMM estimator produces consistent estimates under the condition of endogeneity. The Durbin-Wu-Hausman test will be carried out to confirm or reject claim of endogeneity in estimating equation (6).

4.6.2 Stationarity

A stationary process has the property that the mean, variance and autocorrelation structure do not change over time. Thus, stationarity as often related to time series data simply refer to a situation where the probability distribution of a variable does not change over time.

Panel unit root testing emerged from time series unit root testing. The major difference to time series testing of unit roots is that we have to consider asymptotic behavior of the time-series dimension T and the cross-sectional dimension N (Nell and Zimmerman 2011).

The main difference between unit root tests in time series data and panel data concerns the issue of heterogeneity. In the time series case, heterogeneity is not a problem since the unit root hypothesis is tested in a given model for a given individual (Hurlin and Mignon, 2007).

There are a variety of different unit root tests for panel analysis, which differ in terms of the assumptions regarding the null hypothesis and how the autocorrelation is removed.

Variants of panel unit root tests include Levin–Lin–Chu (2002), henceforth LLC, Im–Pesaran–Shin (2003), henceforth IPS, Breitung (2000; Breitung and Das 2005), Harris–Tzavalis (1999), and Fisher-type (Choi 2001, Maddala and Wu, 1999) test the null hypothesis that all the panels contain a unit root. The Hadri (2000) Lagrange multiplier (LM) test has as the null hypothesis that all the panels are (trend) stationary.

Maddala and Wu (1999) and Choi (2001) evaluate the pitfalls of both the LLC and IPS tests and offer an alternative procedure for performing unit root tests on panel data. They favour using non parametric Fisher-type tests which approach panel-data unit root testing from a meta-analysis perspective.

In line with Maddala and Wu (1999) this study would employ the Fisher test of stationarity because the test has the highest predictive power in all cases and does not require a balanced panel like in the case of other unit root tests. Based on the p-values of individual unit root tests, Fisher's test assumes the null hypothesis that all series are non-stationary against the alternative that at least one series in the panel is stationary.

4.6.3 Autocorrelation and Heteroscedasticity

Heteroscedasticity is prevalent in cross sectional data and serial correlation is prevalent in time series data. Heteroscedasticity occurs when the variance of the error terms differ across observations and thus not constant (ϵ_i) $\neq \sigma$. While autocorrelation occurs when successive values of the random error term are not independent. That is $Cov \epsilon_{it}, \neq 0$ for all t and s. This implies that the level of a variable at a point in time affects its future level.

Thus, the two main sources of persistence in panel data are heteroscedasticity and serial correlation. Since panel data is a combination of cross sectional and time series data, both problems are likely to be present.

The GMM technique is one of several methods which gives standard errors of regression coefficients that are robust to heteroscedasticity and serial correlation. This means that the standard errors can be used to test hypotheses and construct confidence intervals.

To test for the presence of autocorrelation in order to confirm the validity of the estimation, the Arellano–Bond test for second order autocorrelation in first differenced errors will

therefore be conducted to test for serial autocorrelation in the idiosyncratic errors. This test examine the hypothesis that there exists no serial correlation between the error terms.

Also, given that the entities (countries) under consideration in this study have their individual unique characteristics, the issue of heterogeneity needs to be considered. It therefore becomes important to test for presence of heterogeneity. The Breusch–Pagan Lagrangian multiplier test will be conducted to test for the presence of heteroscedasticity; which the system GMM would be expected to deal with.

4.6.4 Validity Of Over identifying Restrictions

The use of the system GMM estimation technique requires that the instruments used must be valid in order to yield consistent estimates. Due to the challenge of finding exogenous instruments that are uncorrelated with the error term, the GMM uses the lags of the endogenous variables as instruments; in which case the endogenous variables are predetermined and are therefore not correlated with the stochastic error terms. The validity of the moment conditions implied by these instruments is commonly tested using the conventional GMM test of over identifying restrictions credited to Sargan (1958) and Hansen (1982). According to Baum and Schaffer (2003) “Good instruments” should be both relevant and valid: correlated with the endogenous regressors and at the same time orthogonal to the errors. In this study therefore, the Sargan test of over identifying restrictions which tests the null hypothesis that the over identifying restrictions are valid will be conducted. The Hansen (1982) test can also be used to test the same condition; but this unlike the Sargan test becomes weaker as the number of instruments increases.

4.7 Concluding remarks

There are a variety of different techniques that can be used to estimate equation (6). The standard methods of panel estimation are pooled OLS, fixed effects and random effects. The difference between them is that the pooled OLS assume that all cross-sectional units are the same (i.e. countries are the same), whereas fixed effects and random effects models don't make that assumption. The major difference between fixed effects and random effects is that the fixed effects estimates are calculated from differences within each country across time, whereas the random effects estimates are more efficient, because the predictors are used to explain not only change over time but also differences among countries. However the random effect is only efficient if the specific effects are not correlated with the explanatory variables. Though the above techniques are 'good' to be used in this estimation in equation (5) and (6), they become appropriate only when they satisfy the necessary conditions. The study will first determine the appropriateness of REM or FEM before moving on to use the system GMM methodology as the main technique to estimate the empirical model, should endogeneity be identified as a problem.

The appropriateness of the system GMM technique will be confirmed by conducting the relevant diagnostic tests for endogeneity, stationarity, autocorrelation and heteroscedasticity.

CHAPTER FIVE

PRESENTATION AND DISCUSSION OF RESULTS

5.1 Introduction

This chapter presents the estimation and discussion of the results. Version 13 of Stata Corp's statistical package is used for the empirical estimations. This chapter is divided into four main sections. Section 5.2 provides descriptive analysis of the variables under consideration. Section 5.3 presents the results of some diagnostic tests. The discussion of the empirical findings is presented in Section 5.4, followed by the conclusion in Section 5.5.

5.2 Descriptive Analysis

The descriptive statistics relates to twenty-nine (29) Sub Saharan African countries for the time period 1995–2013. The statistics under consideration are the mean, the standard deviation and the minimum and maximum values of the variables. These descriptive statistics are reported on Table 1 below.

Table 2: Summary statistics of the variables

Variables	Mean	Standard Deviation	Minimum	Maximum
Per capita GDP growth	1.828	4.399	-37.26	36.77
Intra-SSA exports as % of total exports	27.713	23.015	0.07	97.68
Inter-SSA exports as % of total exports	43.938	22.272	0.47	96.98
Gross capital formation as % of GDP	20.318	7.653	2.00	50.00
Labour force as % of total population	53.806	4.617	47.00	71.00
Inflation as end of year % change in CPI	7.807	13.267	-72.73	156.94

Source: Author's computation using Stata 13

Over the period 1995-2013, the annual real per capita GDP growth for the thirty SSA countries under study averaged 1.83 percent. With a standard deviation of 4.4 percent, this is indicative of very high variability in growth rates for the sample countries over the period as revealed by a minimum real GDP per capita growth rate of -37.26 percent and a maximum of 36.77 percent. This clearly points out the disparity in per capita GDP growth among the countries in the region.

Table 2 also shows that average exports of SSA as a percentage of GDP is 27.826. Minimum exports of any country between the periods under consideration is 4.7 percent while the maximum exports as a percentage of GDP for any country is 95.70. Unsurprisingly, inter-SSA trade is more important than intra-SSA trade for the countries of Sub-Saharan Africa. The minimum and maximum share of intra-SSA exports was 0.07 and 97.68 respectively for any country over the period. In the case of inter-SSA share of exports, the minimum and maximum shares are 0.47 and 96.98 respectively for any country for the period under consideration.

The definition of Gross Capital Formation according to World Development Indicators database, includes “outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress." From Table 2, average annual gross capital formation in the region is 20.32 percent, with some countries recording investment of as low as 2 percent and maximum of 50 percent per annum.

Annual labour force as a percent of total population averaged 53.81 percent. The minimum proportion for any country's population that formed the annual labour force is 47 percent whilst the maximum is 71 percent. This demonstrates the youthful nature of the population of SSA. This high proportion of labour force can become a major source of strengthening economic growth if the youthful population is well equipped with skills and provided with adequate resources and opportunities to become resourceful in promoting growth.

Also from Table 2, annual average inflation between 1995 and 2013 is 7.8 percent. Inflation rates in different SSA countries varied from as low as -72.73 percent to a maximum of 156.94 percent. This is a clear indication of high level of price instability in the region. This can have dire consequences for households and firms expenditure planning by increasing the cost of living as well as making exports less competitive.

5.3 Diagnostic Tests Results

This section presents the results of the diagnostic tests conducted for unit roots, endogeneity, heteroscedasticity, autocorrelation, over-identifying restrictions, and the choice of fixed or random effects models. Each of these is analyzed in the sub-sections below. The main objective of carrying out these tests is to ensure that the data fits the model and that the results from the system GMM estimations are valid and reliable.

5.3.1 Unit Roots Results

According to Choi (2001), if the number of panels is finite, the inverse chi-squared test is applicable and more powerful. This statistic has a chi-squared distribution with $2N$ degrees of freedom. The criterion for drawing conclusion on the test is that if the probability of the inverse chi-squared of a variable is less than the level of significance, the null hypothesis is rejected—implying that the variable is stationary. The null hypothesis for conducting the unit root test is that all panels contain unit roots and may be rejected for all the variables on the

basis of the inverse chi-squared test in favour of the alternative hypothesis that at least one panel is stationary. The robustness of the inverse chi-squared test results is affirmed by the results of the inverse normal, the inverse logit and the modified inverse chi-squared test statistics. The results of the Fisher type unit roots test are shown below in Table 3.

Figure 3: Fisher-Type Stationarity (Unit Roots) Test

Variable	Inverse chi-squared		Inverse normal		Inverse-logit t		Modified chi-square	
	Stat.	prob.	Stat.	prob.	Stat.	prob.	Stat.	prob.
Percapgdp_growth	424.3657	0.0000	-16.7582	0.0000	-21.7790	0.0000	34.0162	0.0000
Intra_exports	206.2047	0.0000	-9.5395	0.0000	-10.2653	0.0000	13.7605	0.0000
Inter_exports	2198499	0.0000	-10.2958	0.0000	-11.1279	0.0000	15.0274	0.0000
Gross capital formation	192.0364	0.0000	-9.1225	0.0000	-9.7113	0.0000	12.8542	0.0000
Labor force	111.9227	0.0000	-4.2654	0.0000	-4.3924	0.0000	5.2842	0.0000
Inflation	520.4514	0.0000	-18.9302	0.0000	-26.7124	0.0000	42.9375	0.0000

Ho: All panels contain unit roots

Ha: At least one panel is stationary

Source: Author's computation using Stata 13

Observation from the results on Table 2 shows that none of the variables are associated with unit roots and therefore raises no concerns over the fear of running spurious regressions.

5.3.2 Endogeneity

The study employed the Durbin–Wu–Hausman (DWH) test to verify the presence of endogeneity. If the null hypothesis that the regressors are uncorrelated with the error term is not rejected, then OLS would be appropriate because the variables are not correlated with the error term. Otherwise, the rejection of the null hypothesis indicates that the variables are endogenous; hence OLS estimators would be inconsistent. The results of the Durbin–Wu–Hausman (DWH) test show that all variables are uncorrelated error term, except for the total exports and inflation variables (see Table 4).

Figure 4: Durbin-Wu-Hausman (DWH) Test for Endogeneity

Null Hypothesis	P-value (Prob>Chi2)
Total exports uncorrelated with the error term	0.0590
Intra_export uncorrelated with error term	0.3722
Inter_export uncorrelated with error term	0.9105
Gross capital formation uncorrelated with error term	0.2308
Labor force uncorrelated with error term	0.7964
Inflation uncorrelated with error term	0.0041

Source: Author's computation using Stata 13

Clearly, Table 3 shows that intra-SSA exports, inter-SSA exports, gross capital formation and labour force are exogenous, but total exports and inflation are endogenous. This is because the p-value for each variable is greater than the 10 percent level of significance; except for total exports and inflation. This indicates that these variables are exogenous and an acceptance of the null hypothesis of each variable; except for total exports and inflation. Nonetheless, system GMM produces consistent and reliable estimates in contrast with OLS estimates under conditions of endogeneity.

5.3.3 Heteroscedasticity

The Breusch–Pagan Lagrangian multiplier test is conducted to test for the presence of heteroscedasticity. The test rejected the null hypothesis of constant variance at the 5 percent level of significance, thereby confirming the presence of heteroscedasticity (see Table 5). In this case, using the OLS estimation technique would yield biased and inconsistent estimates, resulting in unreliable and misleading results. The system GMM approach is developed such that it is able to yield consistent and unbiased estimates even in the presence of heteroscedasticity.

Table 5: Breusch-Pagan Lagrangian multiplier test for heteroscedasticity

Ho: Constant variance

$$\text{Chibar2 (01)} = 21.08$$

$$\text{Prob} > \text{Chibar2} = 0.0000$$

Source: Author's computation using Stata 13

5.3.4 Autocorrelation

This test is conducted using the Arellano–Bond test for autocorrelation in the first difference errors. The test result is reported together with the estimation results in Table 7. The test fails to reject the null hypothesis of no autocorrelation in second order for all the regressions. That is, the error terms are not correlated with each other and the condition of no autocorrelation is therefore satisfied for the use of the system GMM estimation technique.

5.3.5 Validity of Over-identifying Restrictions

The difficulty of obtaining valid external instruments under parallel estimation techniques to the GMM makes the system GMM superior technique since the estimator addresses consistently and efficiently problems of omitted variable bias and endogeneity, but this consistency relies on the assumption that the lagged values of the regressors are valid instruments. Therefore, the system GMM estimation technique requires that the instruments used must be valid in order to obtain consistent and efficient coefficients. For this reason, the Sargan test of over-identifying restrictions which tests the null hypothesis that the over-identifying restrictions are valid is employed. The test results reported in Table 6 fails to reject the null hypothesis and thus provides evidence that the over-identifying restrictions are valid for the regression model. As a result, the system GMM estimator should yield consistent and reliable estimates based on the evidence of no autocorrelation reported in section 5.3.5 in addition to the condition of validity of the instruments being satisfied.

5.3.6 Fixed Effects and Random Effects

The Hausman test is conducted to determine the suitability of the Random Effects Model against Fixed Effects Model in estimating equation (5). The presence of heteroscedasticity suggests the existence of heterogeneity across countries. The Breusch–Pagan Lagrangian multiplier test for heteroscedasticity presented in Table 5 confirms the presence of heteroscedasticity. The result of the Hausman test shown in Table 5 also confirms the appropriateness of Fixed Effects model by rejecting the null hypothesis that favours random effects model at 10 percent level of significance. However, the system GMM estimation procedure would also be applied to the model in equation (6) since it yields more consistent and reliable estimates as compared to the FEM. Again, having identified the presence of endogeneity for the inflation variable, the model therefore would produce more consistent and reliable estimates when the system GMM is used. Based on the above conditions, the study therefore estimates equations (5) and (6) using the Fixed Effects model and the GMM technique respectively.

Table 6: Hausman Test for Fixed versus Random Effects

Test: Ho: difference in coefficients not systematic (random effects)

$$\begin{aligned} \text{Chi2 (5)} &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 9.40 \\ \text{Prob}>\text{chi2} &= 0.0941 \end{aligned}$$

Source: Author's computation using Stata 13

From the above diagnostic tests; the system GMM technique can be considered suitable for estimating the hypothesized relationship between real per capita GDP growth and intra-/inter-SSA exports. Further, given the presence of endogeneity the estimates thereof are reliable and efficient when the GMM is used.

5.5 Discussion of Results

Table 7 presents the estimation results of the relationship between growth of per capita GDP and exports, including other controls outlined in Section 4.5. The discussion of the result will focus on the GMM estimation since the result under the system GMM is comparatively more consistent and reliable. This is because in dynamic panel models such as one in this study, the endogeneity between the lagged values of the dependent variable used as a regressor and the error term is corrected by the system GMM approach; it also allows for the use of level and lagged values of the variables in the estimation and It is able to give consistent estimates even when T (time periods in years) is small and N (countries) is large.

Figure 7: Fixed Effects and System GMM Estimation Results

EXPLANATORY VARIABLES	FEM	SYSTEM GMM	
		(1)	(2)
Constant	-7.4648 (8.0694)		
Percapgdp_growth _{t-1}		0.0736 ^{***} (0.0083)	0.0526 ^{***} (0.0100)
Total annual exports growth		0.0421 ^{***} (0.0070)	
Intra_exports	0.0029 (0.0147)		0.0197 ^{***} (0.0036)
Inter_exports	0.0005 (0.0136)		0.0139 ^{***} (0.0050)
Gross capital formation	0.1442 ^{***} (0.0273)	0.1057 ^{***} 0.0919 ^{***} (0.0062)	(0.0074)
Labour force	0.1203 (0.1508)	-0.0079 ^{**} (0.0031)	-0.0114 (0.0075)
Inflation	-0.0490 (0.0128)	-0.0425 ^{***} 0.0596 ^{***} (0.0004)	- (0.0010)
Wald chi-square (Prob>chi-squared)	0.000	0.000	0.000
Arellano-Bond (AR(2), Prob>Z)		0.836	0.4319
Sargan test (Prob>Chi-square)		0.8749	0.8993

Source: Author's computation using Stata 13

Standard errors in parenthesis

Significance level: *** for 1%, ** for 5% and * for 10%

Exports (intra/inter-SSA exports): The GMM result in Table 7 confirms that the ELG hypothesis holds for SSA countries. Further, intra-SSA and inter-SSA destined exports all

positively affect real per capita GDP growth in SSA. Coefficients on all export variables are significant at the 1 percent level. Further details reveal that a unit increase in the share of intra-SSA results in an increase in the growth rate of real per capita GDP by 0.0197 units. Similarly, a unit increase in the share of inter-SSA in total exports results in an increase in the growth rate of real per capita GDP by 0.0139 units.

Thus, comparatively, intra-SSA destined exports tend to increase real per capita GDP growth by a higher magnitude than exports destined for outside SSA (Europe/Central Asia). This result lends support to Baliamoune-Lutz (2011) in his empirical results that export destinations matter. Baliamoune-Lutz (2011) found strong evidence that exporting to OECD countries have positive effect on growth in Africa; but not to China. Our result of a relatively higher coefficient for intra-trade compared to inter-trade contradicts Arora and Vamvakidis (2005) who found that countries benefit more from trading with relatively more developed countries. Craig et al (2011) also observed that increasing exports to advanced economies as compared to low intra-regional exports account for the robust growth rates witnessed in East Asia in recent times. However, they added that this is mainly as a result of high growth in export of capital goods while consumption goods have subdued. If this observation is anything to go by, then it may be suggestive of the fact that the comparatively lower effect of inter-SSA exports on per capita GDP growth is as a result of the dominance of primary commodities in inter-SSA exports while SSA countries tend to trade in labour-intensive manufactures among themselves. This finding may thus provide some motivation to further promote the regional integration efforts of governments in the region.

Gross capital formation: This variable under the GMM estimation technique shows positive effect of capital formation on real per capita GDP growth at 1 percent level of significance. This is in consonance with the *a priori* expectation which was drawn from proposition in

theory by the Solow growth model, Keynes demand-side hypothesis and empirical study by Santos et al (2013), Mankiw et al (1992), Zwane (2011), Shahid (2014) amongst others. This evidence basically provides a further basis to push for higher investment in fixed capital in order to enhance accelerated growth in SSA. With average capital formation noted from section 5.2 to be average of 20.32 percent per annum between 1995 and 2013, increasing capital formation can be a potential source of accelerating growth.

Population: The coefficient of labour force (the proxy for population), is negative and statistically insignificant. It has been well emphasized in classical and neoclassical growth theories that labour force is a key determinant of economic growth. Empirical evidence in support of this general theoretical proposition has been mixed depending on the time, sample and the data used as proxy. Some empirical evidence by Shahid (2014) found positive effect in the long term, negative effect in the short term of labour force on economic growth in Pakistan. Also, Biyase and Zwane (2011) identified a positive effect of labour force on economic growth in their empirical study of 30 African countries. Similar to the short term relationship noted by Shahid (2014), Hodey (2013) and Santos et al (2013) found a negative relationship between the two variables—using population as a proxy for labour force. Though the *a priori* expectation of probable negative relation between labour force and real per capita GDP growth is met from the GMM results in Table 7, the statistical insignificance further raises some questions about the empirical relevance of the labour force in promoting economic growth in SSA. But the statistical insignificance does not give reason to underestimate the effect of labour force on per capita income growth. However, in conformity with the argument by Mankiw et al (1992), the result may suggest that a large labour force that is not complemented by at least the compatible level of investment in capital stock will bring about a fall in output per worker growth.

Inflation: In general theory, inflation is argued to have a deteriorating effect of demand, and therefore bring about slowdown in economic activities that can cause a fall in economic growth. From Table 1, inflation is observed to be quite unstable within the SSA region and could be cited for the inverse relationship on economic growth. The GMM output in Table 6 confirms the *a priori* expectation that inflation affects per capita GDP growth negatively at 1 percent level of significance. In detail, a 1 percent annual increase in Consumer Price Index (CPI) brings about 0.059866 decline in real per capita GDP. This confirms the results by Bbaale and Mutenyo (2011) Pollin and Zhu (2005), Orphanides (1999), Santos et al (2013), Arora and Vamvakidis (2005), and Biyase and Zwane (2011), who found negative relationship between inflation and economic growth. This study may add to the existing literature by indicating to governments of SSA countries that maintaining stability in inflation is key to maintaining welfare of the people. As a measure of macroeconomic stability and export competitiveness, higher inflation rates are associated with higher price volatility that causes difficulties to planning and, thus, depresses investment (Santos et al, 2013).

5.6 Concluding Remarks

The presence of endogeneity in the data for estimation favours the use of system GMM technique. Besides, other diagnostic tests: autocorrelation, heteroscedasticity, endogeneity and over identifying restrictions yield results that are favourable for the use of the system GMM estimation technique. The estimation results show that total exports, intra and inter—SSA exports positively affect real per capita GDP growth in SSA. However, intra-SSA trade exerts a bigger effect on growth. Also, total exports positively affect real GDP growth at 1 percent level of significance. The estimation results also show that other control variables; namely, gross capital formation affect per capita GDP growth positively. However, labour force and inflation have negative and statistically significant effect at 5 percent and 1 percent level of significance respectively.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

6.1 Introduction

This chapter presents the summary, conclusions and policy recommendations based on the findings of the study as well as the short falls of the study. Section 6.2 outlines the summary and conclusions drawn from the findings in this study. Section 6.3 details some policy recommendations based on the findings and Section 6.4 discusses the limitations of the study and suggests areas for further research.

6.2 Summary and Conclusions

Sub-Saharan African countries have been plagued by poor economic growth performance and high level of poverty for many decades. This situation may prompt one to question if SSA countries are suffering from ‘resource curse’¹⁵ problem. The quest to have empirical evidence to back the theoretical position that exports serve as an ‘engine’ of growth has motivated research on the Export-Led Growth hypothesis and other dimensions of the export-growth nexus over the decades in many parts of the world. If this argument holds, then export promotion can indeed be seen as one of the key measures to adopt in economic policy formulation to enhance development.

Inference can be drawn from empirical studies of Biyase and Zwane (2011), Sinoha-Lopete (2006), Anwer and Sampath (1997), Dreger and Herzer (2011), Bbaale and Mutenyo (2011) amongst others, who have all made suggestions for SSA countries to improve their participation in international trade in order to make higher gains. These calls are based on the identified effects of exports on growth. These proposals have been confirmed by the results in Table 7 (see page 82), that exports growth bring about economic growth. In spite of the constraints hampering SSA countries participation in world trade, export promotion remains a

¹⁵ This refers to a situation whereby a country has an export-driven natural resources sector that generates large revenues for government but leads paradoxically to economic stagnation and political instability

key component in policy persuasions. In exploring the channels through which exports bring about economic growth, studies are beginning to consider other dimensions of exports and their effect on growth. Balamoune-Lutz (2010) made this point clearer when he argues that it is quite plausible that the destination of exports could play an important role in determining a country's trade patterns and, hence, its development trajectory. The author argues further, that there are various channels through which the destination of a country's export could influence long-term growth and the patterns of development. This position is also emphasized by Santos et al (2013) who argued that since they find significant theoretical and empirical support for exports to work as an engine of growth, a more refined analysis on the nature of this relationship requires a further review on detailed aspects of exports. They further suggested that the product structure and the destination of exports is often overlooked in literature as unimportant characteristics in driving economic growth but that assumption needs to be relaxed and reconsidered.

With this background well established, the objectives of the study was to estimate (1) the effect of exports growth, and (2) determine relative effects of intra-SSA exports and inter-SSA, on economic growth using the GMM methodology. The study achieves its first objective having observed that total exports growth promotes growth in real per capita GDP growth. The second objective is also achieved given that there are positive but differential effects; specifically higher effect of intra-SSA than inter-SSA exports on real per capita GDP growth.

6.3 Policy Recommendations

The results show that total exports growth, inter- and intra-trade (exports) positively impact growth in SSA. However, the magnitude of the effect of intra-exports on growth is greater than that of inter-exports. This result can be used to propose that SSA countries must improve on the quality and quantity of exports in order to enhance growth in the region.

Commendation can also be made to push for regional integration agenda in SSA, even though this needs not be done at the expense of intercontinental exports. This is because, inter-SSA exports would continue to provide very essential resources such as government revenue, technology and investment that remain key in promoting growth in the region.

In the long term promotion of trade among countries in the region needs to be considered more seriously since this can bring about higher level of productivity which would generate economies of scale, increase employment, propel infrastructural development and eventually contribute even higher to output growth in the region. One of the reasons cited for the low level of trade in the region is the similarity in export commodities (Chea, 2012). However, labour-intensive manufactures seem to constitute a higher portion (see Figure 7 & UNCTAD, 2013) of the few commodities traded in the region, therefore promoting regional trade can transform the manufacturing sector of SSA economies to bring about the expected result in growth.

The high level of trade barriers between SSA countries may suggest that each country trades with the external regions in isolation without diffusing the benefits each derives from trade to other countries in the region. But if there is higher trade among countries in the region, there can be diffusion of benefits from external trade by individual countries among neighboring countries which can bring about growth in the region as a whole. Additionally, SSA countries can combine forces to establish some vital infrastructure to promote higher productivity and benefit the region as a group. For instance, Craig et al (2011) in examining the miraculous growth performance in East Asian countries noted that high level of intra-regional economic activity or collaboration among these countries contributed to their performance. Based on resource locations, firms located subsidiaries in different countries within the region, so that a product can travel through many countries before finishing. This promoted intra-regional economic activities in the East Asian countries and promoted technological development. In

the end, the structure of their exports have tended to concentrate more in capital goods and less consumption goods. It is also worthy observation to point out that the East Asian countries' growth example is often not cited individually but rather as a group; an indication of how important it is to address economic challenges from a regional perspective. Despite the low level of technological advancement in SSA region, adopting the approach used by the East Asian countries¹⁶ would help to enhance productivity, increase trade among SSA countries as well as improve on the quality of exports to other regions. This will ensure that while expanding intra-regional trade, higher benefits are also derived from inter-regional trade in the long term.

Further, the exploitative industry in SSA from which they derive their export commodities seem to be dominated by multinational firms often from the advanced countries. These companies partner with the few well-resourced firms in SSA countries to exploit and export the products. In the end, the capacity of local businesses cannot be expanded, there would be limited opportunities for labour force and not much of the revenue generated would be kept in the local economy to promote higher demand. For instance, Carlos Lopes (2013) argues that African economies have not benefited much from their resource abundance and exploitation due to high level of tax holidays granted to multinational companies who make huge profits from their activities. Carlos Lopes (2013) also proposes that better integration of Africa's development policies with strong backward and forward linkages in the local economy should allow local entrepreneurs and industrialists to take advantage of service provision and technology transfer opportunities in order to generate higher gains. The study further noticed that a lot of resources remained untapped in SSA countries and therefore, increasing the level exploitation of these resources can also help maximize the gains from exporting large volumes to Europe and other regions. Therefore, this study would recommend

¹⁶ Who have become a model for advocating measures to addressing growth challenges

that indigenes should be motivated and resourced to take charge of the exploitative industry in the region in order to bring about enhance productivity, increase exports and higher gains to the local economies.

As suggested by Sindzingre (2007), the author agrees with Rodriguez and Rodrik (1999) in their proposition that trade policy in SSA works as it does elsewhere. In their view, trade restrictions are obstacles to exports, and their reduction improved trade performance in SSA. The dismantling of marketing boards and the lowering of import tariffs have increased traditional and non-traditional exports. In their analysis, SSA countries' poor performance is explained by poor infrastructure, geography, dependence on a limited number of primary products, which mean that although trade reforms may raise trade volumes, their influence on economic growth is weak. In this observation and the results obtained in this study, it can be suggested that governments of SSA countries must work in harmony to remove these trade barriers in order to experience higher growth emanating from general exports and intra-regional trade.

In concluding on the policy recommendations based on the evidence gathered on the control variables from the estimation results, it is also important for governments of SSA countries to promote a climate of massive capital formation, ensure stability in inflation to make exports competitive and put in measures that empower the labour force with skills and opportunities as a way of strengthening domestic factors that will enhance the productive capacity of the economy in the export sector towards economic growth.

6.4 Limitations of the Study and Areas for Further Research

The study failed to use larger sample size and include some key variables (such as real terms of trade, real exchange rate etc.) in the estimation model due to the lack of consistent data on these variables for most countries in SSA. Also, the inclusion of exports to other regions perhaps may bring up some revealing results which can add some other dimensions to the findings.

In addition, the study did not run causality tests to determine whether intra/inter-SSA exports cause real per capita income and or vice versa, mainly due to the relatively small time span (19 years) of the study as these causality and other tests fall in the domain of panel time series analysis which require time span of 30 years or better.

Future studies can adopt other estimation techniques such as Panel Vector Auto-regressions (VARs) to further test the robustness of the outcome of this study. The outlined inadequacies may also make very meaningful contributions to the existing literature and therefore could be considered by future studies on exports-destinations cause economic growth hypothesis in Sub-Saharan Africa.

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APPENDIX

Appendix i: List of the twenty-nine (29) Sub-Saharan Africa countries in the study

Benin	Gambia	Niger
Burkina Faso	Ghana	Rwanda
Burundi	Guinea	Senegal
Cameroun	Kenya	Seychelles
Cape Verde	Madagascar	Tanzania
Central African Republic	Malawi	Togo
Cote D'voire	Mali	Uganda
Comoros	Mauritius	Zambia
Ethiopia	Mozambique	Zimbabwe
Gabon	Namibia	

Source: Author's compilation from World Integrated Trade Solutions (WITS)

Appendix ii: Pairwise Correlation Coefficients

	gdpper~h	totale~s	intras~s	inters~s	grossc~m	labour~e	inflat~n
gdppercapi~h	1.0000						
totalexports	-0.0665 0.1213	1.0000					
intrassaex~s	0.0277 0.5475	-0.1201 0.0092	1.0000				
interssaex~s	0.0403 0.3833	0.0084 0.8556	-0.6598 0.0000	1.0000			
grosscapform	0.3069 0.0000	0.2161 0.0000	-0.1001 0.0355	-0.0175 0.7138	1.0000		
labourforce	0.0470 0.2706	0.6322 0.0000	-0.2281 0.0000	0.2552 0.0000	0.2677 0.0000	1.0000	
inflation	-0.0215 0.6172	-0.0146 0.7360	-0.0587 0.2034	0.0269 0.5609	-0.0401 0.3661	-0.0442 0.3036	1.0000

Source: Author's computation using Stata 13

Appendix iii: Summary statistics of the variables

Variables	Mean	Standard Deviation	Minimum	Maximum
Per capita GDP growth	1.828	4.399	-37.26	36.77
Total exports as % of GDP	27.826	15.811	4.7	95.70
Intra-SSA exports as % of total exports	27.713	23.015	0.07	97.68
Inter-SSA exports as % of total exports	43.938	22.272	0.47	96.98
Gross capital formation as % of GDP	20.318	7.653	2.00	50.00
Labour force as % of total population	53.806	4.617	47.00	71.00
Inflation as end of year % change in CPI	7.807	13.267	-72.73	156.94

Source: Author's computation using Stata 13

Appendix iv: Durbin-Wu-Hausman (DWH) Test for Endogeneity

Null Hypothesis	P-value (Prob>Chi2)
Intra_export uncorrelated with error term	0.3722
Total exports uncorrelated with error term	0.0951
Inter_exports uncorrelated with error term	0.9105
Gross capital formation correlated with error term	0.2308
Labor force uncorrelated with error term	0.7964
Inflation uncorrelated with error term	0.0041

Source: Author's computation using Stata 13

Appendix v: Breusch-Pagan Lagrangian multiplier test for heteroscedasticity

Ho: Constant variance

$$\text{Chibar2 (01)} = 21.08$$

$$\text{Prob} > \text{Chibar2} = 0.0000$$

Source: Author's computation using Stata 13**Appendix vi: Hausman Test for Fixed versus Random Effects**

Test: Ho: difference in coefficients not systematic (random effects)

$$\text{Chi2 (5)} = (b-B)'[(V_b - V_B)^{-1}] (b-B)$$

$$= 11.34$$

$$\text{Prob} > \text{chi2} = 0.0783$$

Source: Author's computation using Stata 13