CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

According to North (1991), institutions are the humanly devised constraints that structure and control political, economic and social interactions amongst various economic agents. They consist of both informal constraints (sanctions, taboos, customs, traditions and codes of conduct); and formal rules (constitutions, laws, property rights). They are a set of economic, political and social factors, rules, beliefs, values and organizations that jointly motivate regularity in individual and social behaviour (Greif, 2006). They are of three types viz; economic, political and social. Economic institutions are essential for economic growth in any country due to their influence in shaping incentives for various economic actors in a society. They do not only determine the level of economic growth potential of a country, they also determine the distribution of resources and economic gains in the country. Political institutions, on the other hand, deal with the way the political structure in a country influences the behaviour of agents especially with regards to the distribution of political power - *de jure* and *de facto* (North, 1991; Acemoglu and Robinson, 2008; IMF, 2005). Institutions have been crafted by man to create a peaceful habitation and reduce uncertainty in the exchange of values. It is also believed that they play key roles in the management of economies in recent years. This is due to the fact that, it is becoming increasingly clear that those involved in economic transactions are not only influenced by economic variables (especially price) but also by a host of other factors that can be classified as institutions (Natal, 2001).

Economic growth is a sustained expansion of production possibilities measured as the increase in real Gross Domestic Product (GDP) over a given period of time (Parkin, Powell and Matthews, 2008). The role of trade in economic growth and

development is significant. The Classical and Neo-classical economists attached so much importance to international trade in a country's development that they regarded it as an 'engine of growth'. International trade increases savings and investment, reduces unemployment and under-employment, enhances greater backward and forward linkages in the economy and ensures a larger inflow of factor inputs into the economy and outflow of goods and services. Trade liberalization, has been defined as a move towards freer trade through the reduction of tariff and other barriers and is generally perceived as the major driving force behind globalization (Wacziarg and Welch, 2008).

The Neo-classical economists believed that the economic growth of a country depends on the level of investment (Solow, 1956). Other scholars brought the concept of endogenous growth into the debate (Lucas, 1988; Romer, 1986). This was made more popular in the work of Mankiw, Romer and Weil (1992) that made human capital relevant to economic growth. Both the classical economists and the endogenous growth theorists seem to assume the institutions in countries affect economic activities. However, the insufficient benefits that accrue to developing countries from the global world suggest that there is more to economic growth and trade than implied by the neo-classical economists (Ige, 2007; Umo, 2001; Garba, 2003).

The issue of whether trade and increased openness of trade would lead to higher rates of economic growth is an age-old debate between pro-traders and anti-traders over the years. Pro-traders of free trade have lauded the gains from trade through the specialization of countries in the production of goods in which they have comparative advantage and engage in trade and exchange to meet their other needs. But the anti-traders see free trade to be the main cause of dumping of goods that have affected the developing countries adversely. New development theorists contend that openness to trade stimulates technological change by

increasing domestic rivalry and competition, leading to increased innovation; and that trade liberalization by allowing new goods to flow freely across national borders increases the stock of knowledge for technological innovations which spur growth (Ahmed and Sattar, 2004).

Countries in Sub-Saharan Africa (SSA) have implemented a series of economic reforms, including trade liberalization, with the aim of enhancing economic growth. The theoretical basis for these reforms is that trade liberalization is expected to increase trade, thereby increasing investment which in turn raises the rate of economic growth. However, the empirical evidence from the large and growing literature on trade and growth remains mixed. Edwards (1998), Rodriguez and Rodrik (2001) suggest that trade liberalization is not associated with growth; while Baliamoune (2002) and Yanikaya (2003) conclude that trade openness may even retard growth. For instance, while Sachs and Warner (1997) argued that trade openness increases the speed of convergence; the evidence from the study by Baliamoune (2002) suggested that increased openness to trade has led to income divergence rather than convergence in SSA countries. In fact, Rodrik (2001) argues that regarding trade openness and growth, "the only systematic relationship is that countries dismantle trade restrictions as they get richer".

There is a vast body of literature (North, 1991; Dollar and Kraay, 2003; Baliamoune-Lutz and Ndikumana, 2007; Flaig and Rottman, 2007; Kagochi, Tackie and Thompson, 2007; Siba, 2008; Mwaba, 2000; Gamberoni, von Uexkull and Weber, 2010; Bhattacharyya, 2011) which shows that trade and institutions have both positive and negative contributions to economic growth. Institutions can reduce or increase transaction costs because they determine the nature of exchange. They form a link for connecting the past with the present and the future - a kind of path dependency. Institutions provide the incentive structure of any

economy because they create the structure that shapes the direction of economic change towards economic growth, stagnation, or decline. Therefore, trade liberalization and institutions enable exchange of goods to take place and results in economic growth. On the contrary, economic growth can also lead to trade openness and good institutional framework from the fact that when a country is experiencing growth, this growth would result in increased domestic and foreign rivalry and competition as well as increased institutional innovation.

It has been observed empirically that one of the causes of the limited growth effects of trade liberalization is the weakness of institutions. Indeed, one strand of the literature on growth has argued for the predominance of institutions in economic growth (Easterly and Levine, 1997; Dollar and Kraay, 2003; Rodrik, Subramanian and Trebbi, 2004). Findings from empirical studies have concluded that institutions are crucial for the success of economic reforms in developing countries (Acemoglu, Johnson and Robinson, 2003; Dollar and Kraay, 2003; Addison and Baliamoune-Lutz, 2006). The evidence suggests that the failure of trade reforms to promote trade and growth in SSA countries is attributable to the poor quality of institutions. In a study by Addison and Baliamoune-Lutz (2006) on North African countries, the results of the study show that the growth effects of economic reforms depend to a large extent on the quality of institutions.

It is in the light of the above, that this study examines how the institutions in the selected SSA countries can contribute meaningfully so that trade liberalization can have a noticeable impact on economic growth and increase the rate of investment that will boost the growth of aggregate output.

1.2 STATEMENT OF RESEARCH PROBLEM

Temple (1999) stressed the importance of an economic environment that is consistent with the development and efficient use of resources. These include monetary and price stability, secure property rights and openness to international exchange that exert independent impacts on economic growth. Weak economic, political and cultural institutions as well as inappropriate trade policies can cause growth to be sub-optimal. For instance, good governance, which is a measure of quality of political institutions, has usually been considered as one of the key variables that enhance economic growth of any society. Economists have tried to look at the link between sound institutions embedded in good governance and economic growth; and have concluded that they are positively related. In any case, the level of economic growth depends, to a large extent on the strength of the institutions in place. For instance, in a study by Parsons and Robinson (2006), it was observed that Botswana experienced better growth than Zambia on account of having better institutions. There is a general discourse that the quality of institutions differs across countries because of belief and ideological differences. Since this is true for institutions, the study deduced that trade among countries can also be influenced by cultural beliefs and ideologies which would make a country to determine which country to trade with and which not to trade with (Siba, 2008).

Though the effects of trade on economic growth have been in the limelight since the existence of trade. It has been observed from literature that there are other factors that can affect the growth of a country; one of such factors is the quality of institutions prevalent in the country. Strong economic, political and cultural institutions have positive effect on the level of economic growth. For instance, Lavallee (2005) used the gravity model to examine the influence of proximity and quality of institutions on trade in one hundred and forty-five (145) countries for data spanning from 1984 to 2002, and governance indicators from International Country Risk Guide (ICRG). He found out that institutional proximity tends to

increase trade, and concluded that corruption in both importing and exporting countries acts as a barrier to bilateral exports, which is harmful to trade and economic growth.

It has also been observed that a country can enhance its economic growth by freeing up its international trade but the presence of significant institutional issues on the side of imports hinders this from being achieved. Most countries can increase imports quite quickly once trade liberalization occurs, given suitable payment arrangements and an increase in the effective demand for imports. To maintain an acceptable or manageable trade balance, exports must also increase, and this is where many countries encounter some serious practical difficulties and barriers (Hare, 2006). On the contrary, Dollar and Kraay (2003) used the rule of law as a measure of institution and ratio of trade to GDP on cross-country level of one hundred and sixty-eight (168) for the average of the time frame of 2000-2001. The authors found out that changes in trade and changes in institutional quality had a substantial positive effect of trade on growth suggesting that trade and institutions jointly affect growth.

Siba (2008) in his study on the determinants of institutional quality in SSA countries found that ethnic fractionalization has an insignificant but positive effect on institutional quality. Most of these studies have only been carried out using the Asian, Americas and European countries (as case studies). The SSA countries have not been in the limelight at least not to the researcher's knowledge. However, it has been observed from these SSA countries that there have been incessant crises occasioned by religious, ethnic and cultural disagreements amongst the people, as well as political and economic instability which have resulted in the slow pace of growth in these countries (Du, 2010). This has become a serious issue of concern as these countries have not been able to compete with the developed countries of the world.

The studies carried out on SSA (Fajana, 1979; Easterly and Levine, 1997; Edwards, 1998; Gerrishon *et. al.*, 2004; Du, 2010) focused on the effect of trade on economic growth and the role of institutions in the growth process of these SSA countries. But not much emphasis has been placed on the quality of institutions, that is, whether these SSA countries have weak or strong institutions that can affect the performance of trade to affect economic growth. In addition, these studies did not decompose these SSA countries into the sub-regions of Africa and did not also look at the interaction effect of trade liberalization and institutions on economic growth (this means that under which type of institutions would trade liberalization have a better impact on growth).

Therefore, this study attempts to fill the gap identified in the literature which is that, first, other studies did not carry out panel unit root tests on the data used. This study carried out panel unit root tests on the variables to see if the variables are stationary or non-stationary. This is done so as not to have spurious or nonsense results. Second, other studies did not categorize the SSA countries into the various sub-regions of Africa and the impact of the interaction effect between trade liberalization and each type of institution was not examined on economic growth. Third, this study also examined the interaction effects between trade liberalization and economic, political and cultural institutions on economic growth to see which type of institution has to be strong for trade liberalization to affect economic growth. The study also decomposed the selected SSA countries into sub-regions to see which sub-region had a better influence of trade liberalization and institutions on economic growth. By extension, this study was able to find out if strong institutions determine the extent of the impact of trade liberalization on economic growth. The study used different methods of estimation from other similar studies (the combination of LSDV and GMM techniques). The study also examined the relevance of institutions as it affects trade liberalization and hence economic growth in the selected SSA countries.

1.3 RESEARCH QUESTIONS

The research questions that this study addresses include the following:

i. How does trade liberalization affect economic growth in the selected sub-Saharan African (SSA) countries?

ii. How do economic, political and cultural institutions affect economic growth in the selected SSA countries?

iii. How does the interaction effect of trade liberalization and institutions affect economic growth in the selected SSA countries? and

iv. What role does the quality of institutions play in influencing economic growth in the sub-regions of SSA?

1.4 OBJECTIVES OF THE STUDY

The main aim of this study is to investigate the impact of trade liberalization and institutions on economic growth in selected sub-Saharan African countries. However, the specific objectives of the study include the following:

i) To examine the impact of trade liberalization on economic growth in selected SSA countries;

ii) To assess the impact of economic, political and cultural institutions on economic growth in selected SSA countries;

iii) To evaluate the interaction effect of trade liberalization and institutions on economic growth in selected SSA countries; and

iv) To investigate the role of the quality of institutions in influencing economic growth in the sub-regions of SSA.

1.5 HYPOTHESES OF THE STUDY

The essence of formulating these hypotheses is to either validate or refute the findings of this study. However, based on the objectives of this study, the following hypotheses (stated in the null forms) are formulated:

1. H_0: There is no significant relationship between trade liberalization and economic growth in the selected SSA countries.

2. H_0: There is no significant relationship between economic, political and cultural institutions and economic growth in the selected SSA countries.

3. H_0: There is no significant relationship between the interaction effect of trade liberalization and institutions on economic growth in the selected SSA countries.

4. H_0: There is no significant influence of the quality of institutions on economic growth in the sub-regions of SSA.

1.6 SCOPE OF THE STUDY

This study employed the use of secondary data. It examines the impact of trade liberalization and institutions on economic growth in selected SSA countries. There are various types of institutions but this study focused on three which are on economic, political and cultural institutions. The thirty (30) selected SSA countries are: Angola, Benin Republic, Botswana, Burundi, Cameroon, Cape Verde, Chad, Congo, Cote d'Ivoire, Djibouti, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Africa, Sudan, Swaziland, Tanzania, Uganda and Zambia. These thirty (30) countries were selected based on the World Bank's (2007) classification of countries into 'moderately outward-oriented', 'moderately inward-oriented' and 'strongly inward-oriented countries'. In addition, they are all developing countries and belong to sub-Saharan Africa and the African continent. These countries had also embarked on trade liberalization policies from the 1980s till date. The time frame for the data covers 1985 to 2012. The choice of the time frame is informed by the fact that this era witnessed the introduction of trade policy regimes and economic reforms such as the

introduction of Structural Adjustment Programmes (SAP) in most SSA countries (Ajakaiye and Oyejide, 2005; Akinkugbe, 2008). See the classification of the countries in Appendix A1.3.

1.7 SIGNIFICANCE OF THE STUDY

Taking into consideration the fact that institutions create the choice pattern that affects not only transactions and production costs but also the likelihood of engaging in economic activities which lead to economic growth (Ike, 1977, 1984; Williamson, 2000; Rodrik, 2008b), they can reduce or increase transaction costs because they determine the nature of exchange. The discourse from literature is that the impact of trade liberalization and institutions on economic growth does not have a defined pattern; the effect is either positive or negative. This study examines the impact of institutions on economic growth in selected SSA countries; this is because efficient institutions guarantee a transparent policy-making process that promotes economic growth. Coupled with this is the fact that conducive economic environments such as secured property rights, price stability, government effectiveness, the effectiveness of monetary and fiscal policies that are in agreement with the efficient utilization of resources have been found to exert some level of impact on economic growth. In this regards, trade policies and institutional quality in a country can determine such country's growth (Temple, 1999). This means that when a country has weak institutions, it can lead to the occurrence of sub-optimal economic outcomes. Therefore, institutions matter in the growth process of any country. Hence, this study would help highlight the vital significance of institutions.

Moreover, this study also examined the impact of trade liberalization on economic growth in selected SSA countries. This helped us to assess the benefits of international trade, to see if there has been noticeable growth in the selected SSA countries, or that international trade have driven some firms out of existence

because they cannot compete with the foreign products in the local market thereby reducing domestic output and hence growth, on the one hand or have helped to increase aggregate output on the other hand. This is clear from the high rate of imported goods in SSA. This is based on the assumption that a country can only gain from international trade when she is economically stable. It is pertinent to note that no country would want to trade with another country that will not be able to pay for the goods and services imported from other countries, and this will have an adverse effect on the country in question. Thus, this study would serve as an eye opener to governments of these selected SSA countries in particular to embark on and implement policies that will boost growth so as to boost trade liberalization. Aside this, taking into account the fact that culture plays a very important role in any economy in that it helps in dictating the ways of life of the citizens of the country and determines their interactive abilities; this study examined the impact of cultural institutions on economic growth.

In addition, this study also examined the trade liberalization – institutions – economic growth nexus on sub-regional classification. The selected thirty SSA countries were classified into Central, East/Southern and West Africa sub-regions. This enabled the author to examine the impact of trade liberalization and institutions on economic growth on sub-regional basis in order to know which of the sub-region fared better than the others. Due to these classifications, this study is different from other previous studies on trade liberalization and institutions.

Furthermore, this study made use of a different technique (the LSDV and GMM techniques), a methodological departure from other similar studies to examine the role of trade liberalization and institutions on economic growth in selected SSA countries. Therefore, this study unfolded the relevance of growth in a country. This is because when a country experiences economic growth, aggregate investment and savings increase, output level increases and poverty reduces. The study would also contribute to existing views on the trade liberalization –

institutions – economic growth nexus. It would give persons both inside and outside an insight into the importance and significance of trade liberalization and institutions in affecting the economy's growth. Thus, it would help to enhance the interest of persons on the academic platform seeking to carry out further study on similar topics.

Also, the recommendations from this study would be useful to policy makers in the appropriate government parastatals on how to improve on their institutions. The study would equally serve as a medium through which awareness is created to the government and society to know the measures to be taken in order to improve the economic activities that will boost economic growth which in turn will lead to the overall development of the economy. It would be useful to the government in the sense that it would enhance processes involved in taking decisions and making conclusions on how to encourage and promote the industrial sector so as to reduce importation of goods and services. Finally, it would serve as a platform for further research in related areas like the impact of trade and institutions on output and employment growths.

1.8 OUTLINE OF CHAPTERS

This study is made up of six (6) chapters. The introductory part of the study is contained in chapter one. The chapter discussed the background of study, the statement of research problem, objectives, significance, research questions, research hypotheses, scope and methodology of the study. It also contains the data sources as well as the outline of chapters. Chapter Two is the literature review. In this chapter, a critique of previous works, research and other materials related to the subject of study were carried out. Chapter three contained some stylized facts about economic and political institutions in the SSA region. It also provided background information on issues that relate to institutions and economic performance in SSA. The conceptual framework and research methodology are

contained in chapter four. In this chapter, the study examined the conceptual framework; described the variables and method of analysis used in the study. Chapter five dealt with the data analyses and interpretations. In this chapter, the data collected from secondary sources were analyzed and the results interpreted. Chapter six is the concluding part of the study. It contained the summary of major findings, policy implications of findings, recommendations and conclusion of the study as well as the limitations of the study and suggestions for further studies.

1.9 DEFINITION OF TERMS

Contract: A contract is a legally enforceable agreement. It involves a formal, legal obligation to which each party gives express approval and to which a particular body of law applies, (Acemoglu and Robinson, 2008).

Cultural Institutions: These are the rules, beliefs and norms that a given society will usually hold, that shape collective actions of the constituting human agents, (North, 1991).

***de facto* and *de jure*:** *de facto* is a Latin word that means 'by the fact'. In law, it means 'in practice but not necessarily ordained by law'. *De jure*, on the other hand, means 'concerning the law' especially when referring to legal matters, standards and governance. Specifically, in legal parlance, *de facto* defines action of what happens in practice while *de jure* describes what the law states in letters. In this study, both would be included in the conceptual framework, (North, 1991).

Economic Institutions: These are economic arrangements that a country is involved in, which can be domestic and international. They are essential for economic growth in a country due to their influence in shaping incentives for various economic actors in a society, (North, 1991).

Exports: These are goods or services that are sold to other countries by a domestic country, (Todaro and Smith, 2011).

Imports: These are goods or services that are bought by a domestic country from other countries, (Todaro and Smith, 2011).

Institutions: Institutions are the humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions and codes of conduct) and formal rules (constitutions, laws, property rights), (North, 1991).

New Institutional Economics (NIE): This incorporates a theory of institutions into economics by building on and extending neo-classical theory. NIE has developed as a movement within the social sciences, especially economic and political science, which brings theoretical and empirical research to examine the role of institutions in economic growth, (North, 1991) .

Non-Tariff Barriers (NTBs): These are trade barriers that restrict imports but are not in the usual form of tariffs. They also mean a number of agreements that deal with various bureaucratic or legal issues that could involve hindrances to trade such as health and safety requirements or technical barriers, (IMF, 2005).

Political Institutions: These are defined by the nature of political leadership structure or governance structure that is persistent in the country. Examples of political institutions include the form of government in a country (democracy or dictatorship), civil liberties and the extent of constraint of political rights, (North, 1991).

Property Rights: They are divided into economic and legal property rights. The economic property rights of an individual over a commodity/an asset are the individual's ability to consume the good or the services of the asset directly or to consume it indirectly through exchange. Examples of economic property rights are: the right to earn income from an asset, the right to use an asset and contract over the terms with other individuals, while the legal property rights are the property rights that are recognized and enforced by the government, (North, 1991).

Tariff: This is a kind of tax imposed on goods when they are moved across a national political boundary. It is also a schedule of duties imposed by a government on imported or in some countries exported goods, (Todaro and Smith, 2005).

Tradable and Non-Tradable: A tradable good is a good or service that can be sold in another location distant from where it was produced. The opposite is the Non-Tradable. Different goods have differing levels of Tradability, usually the higher the cost of transportation and the shorter the shelf life, the less tradable a good is (IMF, 2005).

Trade: This is the exchange of goods and services within a country (domestic or home trade) or between countries (international or foreign trade).

Trade Liberalization: This is defined as a move towards freer trade through the reduction of tariff and other barriers and is generally perceived as the major driving force behind globalization.

Transaction Costs: These are costs used for the creation, maintenance, use and change of institutions and organizations. They include the costs of information,

negotiation and enforcement, costs of defining and measuring claims, costs of using and enforcing the rights specified, (Acemoglu and Robinson, 2008).

Moderately outward-oriented countries: These are countries where the overall incentive structure is moderately biased towards the production of goods for the home market rather than for export, and favours the purchase of domestic goods.

Moderately inward-oriented countries: These are countries that have a more definite bias against exports and in favour of import substitution.

Strongly inward oriented countries: These are countries where trade controls and the incentive structures strongly favour production for the domestic market and discriminate strongly against imports.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, a review of relevant literature on definitional issues as regards trade liberalization, institutions and economic growth are carried out. Also contained in this chapter are sub-sections that explained the reasons for trade liberalization, benefits of trade liberalization and the link between trade liberalization, institutions and economic growth. It also contains a review of theoretical and empirical studies similar to this study already carried out.

2.2 REVIEW OF DEFINITIONAL ISSUES

2.2.1 The Concept of Trade Liberalization

Liberalization creates interdependencies among people and organizations around the world. The phrase "economic liberalization" covers both stabilization and structural adjustment measures. It includes liberalization of both domestic and external sectors. Stabilization deals with controlling the fiscal balance, the balance of payments and external payment deficits and maintaining a low rate of inflation. External sector liberalization includes foreign trade, investment and exchange rate liberalization and depends upon various factors like the dependence of the economy on foreign trade, financial sector liberalization on external account e.t.c. It expects trade to act as an engine of growth. If a country's dependency on foreign trade is limited, internal liberalization has a greater importance in influencing the growth of the economy.

Trade Liberalization generally refers to reductions in trade barriers, liberalized external capital flows, diffusion of technology and international migration of labour. It covers decontrol – the elimination of non-tariff measures – as well as policies that shift the trade regime toward neutrality – a reduction in the bias

toward a particular activity, especially the production of import substitutes. Neutrality is defined as a situation in which the effective exchange rate for a country's exports – nominal exchange rate adjusted for export taxes and export subsidies and tax credits is equal to the effective exchange rate for imports – nominal exchange rate adjusted for duties and premiums resulting from quantitative restrictions (Bhagwati, 1988). Trade liberalization is an important component of economic liberalization and includes the removal of trade barriers, such as tariffs and non-tariff barriers, as well as internal restrictions, such as directed credit and preferential purchasing.

Trade liberalization measures the extent of export promotion that is, shifting resources from import substitution to export activities, increase in the degree of openness, increase in the share of export and import in national income and marketisation as well as changing the structure of incentives and institutions (Mwaba, 2000). Trade liberalization is a wide concept and includes the impact of some specific liberalization policies, such as, foreign capital inflow, tariff reduction among others. Chaudhuri, Yabuuchi and Mukhopadhayay (2006) made an attempt to analyze the effects of liberalized trade and investment policies on welfare and open unemployment in a developing economy in terms of a three sector Harris-Todaro type general equilibrium model. The study assumed that there is wage rigidity in urban sectors, which leads to the simultaneous existence of open unemployment and an urban informal sector in the migration equilibrium.

The issue of trade liberalization has generated three different schools of thought. The first school, being the proponent of trade liberalization (pro-trade liberalization), believes that it is the best thing that could happen to the world. They believe it has brought about a lot of benefits to the entire world. These benefits include, access to modern technologies that are not available domestically, exchange of fruitful ideas, access to goods and services at relatively

cheaper rates compared to the domestic economy, it encourages specialization and competitiveness, enhances modernization, access to latest information and frontier of knowledge. The school argues that all these put together would enhance the economic activities in any country and thereby accelerate economic growth and development.

The second school of thought (anti-trade liberalization) believes that the advent of trade liberalization has really brought more havoc than good to many economies. The school argues that trade liberalization encourages dumping of goods and services in countries that are not competitive, especially those, in the developing world. It is also observed that it discourages local production of goods and services, given that the goods produced in less developed countries cannot compete favourably with those of the advanced countries. Then domestic industries would be forced to go out of business, thereby leading to massive retrenchment and thus, increased unemployment level in the country.

The third school of thought opines that trade liberalization can have positive or negative effect depending on the way each country approaches it. Their argument is based on the fact that while some countries have gained others have not. For instance, the Asian Tigers gained due to their approach to trade. But, in the developing countries, the reverse is the case as most of their domestic industries are not protected and thereby wind up due to international competition which in turn leads to reduced growth (Mwaba, 2000; Chaudhuri, Yabuuchi and Mukhopadhayay, 2006).

The liberalized trade paradigm has been cited in the literature as the major reasons for the increase in the growth of the economy. The popular argument is that a competitive economy and an uncertain environment due to trade liberalization lead entrepreneurs to embrace higher capital-intensive productions that affect the

growth of manufacturing sector in two ways: first, for mostly labour-abundant developing countries, moving away from labour-intensive production is a harbinger of unemployment, which people can ill-afford and subsequently seek employment in the informal sector. Secondly, in a bid to reduce costs to sustain competitive pressure, entrepreneurs are keen to sub-contract few or all the stages of their production process to informal units, whereby they can curtail their costs of training and maintenance of the labour force and vary their production with demand fluctuations. There are also cases where the hitherto protected industries, which get exposed to foreign competition, fail to sustain themselves and are compelled to lay off workers or, in extreme cases, shut down operations. These retrenched workers largely prefer informal sector employment to remaining unemployed (Rodrik, 1998).

According to Krueger (1999), a major problem faced by developing countries in the trade liberalization process is that a country may be able to control how fast to liberalize its imports and thus increase the inflow of products but cannot determine by itself how fast its exports grow. Export performance partly depends on the prices of the existing exported products and developing countries have suffered serious declines in the prices of their commodity exports and their terms of trade and also on having or developing the infrastructure, human and enterprise capacity for new exports. Thus, trade liberalization can (and often does) cause imports to surge without a corresponding surge in exports. This can cause the widening of trade deficits, deterioration in the balance of payment and employment and the continuation or worsening of external debt, which act to constrain growth prospects and often result in persistent stagnation or recession (Krueger, 1999).

Trade policy in many SSA countries has been dominated by significant restrictions. SSA countries' protectionist trade policies were initially influenced

by the perceived need to stimulate local industrial development, under the banner of import substitution and infant industry protection. In many SSA countries, tariffs and quantitative restrictions have constituted the most important form of trade restriction. A large proportion of imports into Africa were either subjected to outright prohibition or high tariffs or some sort of import ban or licensing mechanism. Usually an industry can be protected from imports by either applying a quantitative restriction or imposing a tariff. Trade barriers in SSA were however, excessive in that countries applied quantitative restrictions, tariffs, inappropriate use of import and export licences, undue government interventions, indiscriminate use of import bans and foreign exchange regulations to control the flow of imports and exports (Aigbokhan and Ailemen, 2006; Iyoha and Oriakhi, 2002). Protectionist policies were actually instituted to totally block imports into the countries, except those deemed as priorities by the government and obtainable through elaborate licensing arrangements.

In SSA and other developing regions, trade plays a very important role, because it has given these countries the opportunity to be able to import the goods they cannot produce and export the goods they produce. It has been discovered that the larger a country's Gross Domestic Product (GDP), the smaller its trade ratios. Most SSA countries have high ratios of external trade to Gross Domestic Product (GDP), which makes trade policy vital to the functioning and prospects of their economies. In Nigeria, for example, the percentage contribution of foreign trade to Gross Domestic Product rose from 35 percent in 1960 to over 60 percent in the 1980s, over 75 percent in the 1990s and 78 percent in 2009. Other SSA countries depict similar characteristics – for example in 1997, the trade to GDP ratio for Botswana was 88 percent and that for Zambia 66 percent. The comparative ratios for the developed countries were United Kingdom 28 percent, the United States of America 11 percent and Japan 9 percent (World Development Indicators, 1996; 1997).

2.2.2 Determinants of Trade Liberalization

There are economic differences between the developed and developing countries that lead to a different behaviour among them which contributes to the determination of bilateral trade flows. The following are the determinants of trade liberalization:

a) Country heterogeneity issue – countries of the world differ in their geographical locations, what they produce, factor and natural endowments among others which makes them specialize in the production of a good or service in which they have comparative advantage hence the need to trade with one another.

b) Sector heterogeneity issue – differences in the goods and services produced by countries of the world also account for why countries trade with one another.

c) Trade costs – differences in tariff and transport costs. Depending on the continent, transport costs differ from one another.

d) Geography and the role of Distance - distance is much more than geography; it is history, culture, language, social relations. Factors such as informational costs, tastes and preferences as well as unfamiliarity have been included in the distance factor (Siba, 2008).

e) Technological innovation difference is another determinant of trade liberalization. This explains the international competitiveness of countries which brings about specialization.

f) Language and Colonial ties – there are also differences in the languages spoken in countries of the world which hinders free trade from taking place. Closely linked to this is the fact that these SSA countries have different colonial masters that colonized them before they got independence, and some of them are still tied to the apron strings of their former colonial masters to the extent that they determine the activities in these SSA countries (Siba, 2008).

2.2.3 Why Liberalize Trade?

According to Ghosh and Paul (2008), trade liberalization aims to promote an economy's exports to the world, creating employment opportunities to growth. Contrary to this argument, it has been seen in the developing countries, including Nigeria that trade liberalization has exposed all the industrial units to the inherent risk of free market economy. They tend to compete with the advanced countries in the international market. For doing so, some of the consequences include:

1) Modern capital intensive technology replaces the labour intensive technology. So, there is large number of employment loss in the formal sector. The retrenched workers from the formal sector are getting absorbed in the informal sector due to its easy entry.

2) A large number of workers are informally employed in the formal sector since they are under-employed.

3) There may be a change in the organization of production in the formal sector. A significant amount of sub-contracting still takes place. By giving contract to the informal sector to produce semi-finished products, formal sector is reducing their cost of production. The output of the informal sector is used as a raw material of the formal sector.

The major impact of trade liberalization is typically on the manufacturing and other organized sectors of the economy, while the urban informal sector and subsistence agriculture are largely the producers of non-tradables, the labour market and employment are affected indirectly by trade liberalization through changes in relative prices and in the probability of obtaining employment in the organized sector. Moreover, there exists substantial heterogeneity in the employment profiles of individuals and households within these sectors that vary largely in terms of their skills and endowments of assets. This implies that the impact of trade liberalization on employment also varies significantly according to these differences in initial conditions (Schneider and Enste, 2000).

The dispute over trade liberalization affecting economic growth has wide ramifications for the future path of the global economy and its governance. A basic issue is that of the implications of trade liberalization for economic development and the reduction of inequality between advanced and developing countries. If trade liberalization is, as the critics claim, detrimental to economic growth in developing countries then the current path of the global economy will lead to growing inequalities between advanced and developing countries rather than an eventual convergence. Moreover, if, as claimed, trade liberalization also harms the poor in developing countries it will thwart a basic common objective of the international community, that of the reduction in global poverty (Hasan, Mitra and Ramaswamy, 2003). Apart from this, what is also at stake is the viability of the current governance structure of the global economy. If the effects of trade liberalization are those depicted by its critics then the value of the World Trade Organization (WTO) and the multilateral trading system it promotes and upholds is put in serious doubt. Similarly, in the eyes of its critics, the role of the Bretton-Woods institutions is also compromised by their strong support for trade liberalization in their policy conditionality at the country level and for continued multilateral trade liberalization.

However, a major problem faced by developing countries in the trade liberalization process is that a country may be able to control how fast to liberalize its imports (and thus increase the inflow of products but cannot determine by itself how fast its exports grow. Export performance partly depends on the prices of the existing exported products and also on having or developing the infrastructure, human and enterprise capacity for new exports (Khor, 2005). Export performance in developing countries also depends on whether there is market access for the country's potential exports especially in developed countries. Therefore, developing countries have suffered serious declines in the prices of their commodity exports and their terms of trade. Herein lies a major

problem beyond the control of the developing countries, for as is well known, there are many tariff and non-tariff barriers in the advanced countries to the potential exports of developing countries. Unless the barriers are removed, the south's export potential will not be realized and this will affect employment negatively.

As Trade and Development Report puts it: "developing countries have been striving hard, often at considerable cost, to integrate more closely into the world economy". But protectionism in the developed countries has prevented them from fully exploiting their existing or potential competitive advantage. Thus, trade liberalization can (and often does) cause imports to surge without a corresponding surge in exports. This can cause the widening of trade deficits, deterioration in the balance of payment and employment and the continuation or worsening of external debt, which act to constrain growth prospects and often result in persistent stagnation or recession (Khor, 2005).

2.2.4 Institutions in Relation to Trade Liberalization

Without doubt there is enough theoretical foundation that supports the fact that trade liberalization does influence institutions. North (1981) emphasized the role of market size and technology in engendering institutional change over time. It is widely accepted that both market size and technology are influenced by trade. Hence, trade liberalization can bring about institutional change. Rogowski (1989) showed that trade liberalization affects domestic political alignments through changes in factor prices. Acemoglu *et al.* (2005) opined that trade induces institutional change by strengthening commercial interests. Acemoglu and Robinson (2006) showed that trade induces institutional change through the transfer of skill-based technology which increases the income share of the middle class. The 'critical juncture' results are also related to Hasan *et al*. (2003), LaPorta *et al.* (1999), Acemoglu *et al.* (2001, 2002), Rodrik *et al.* (2004), and many others

who find evidence in favour of the historical origin of institutional divergence across countries.

The origin of trade in the early forms of economies was conceived of as local exchange within a small community. Trade usually expands beyond this kind of community scene to the region and longer distances and eventually to the rest of the world. At each developmental stage, economies have elements of increasing specialization, division of labour and more efficient technological usage. This story of gradual evolution from local autarky to specialization and division of labour was derived from the German historical school of thought (Glitz, 2012). Specialization is elementary whereby self-reliance is one of the key features of most individuals. Limited level of community trade exists within a given social network of informalities, which determines the local exchange of goods and services (North, 1991). Thus, the transaction costs that associate this context are low because people have somewhat intimacy with one another due to repeated transaction.

As trade continues to expand more and more, the likelihood for conflicts over the exchange of values becomes a source of concern- an issue that has to be considered before engaging in trade. The size of the market increased and transaction costs also increased markedly due to the multifaceted social networks that exist. In this case, more resources have to be employed in order to enforce rules and orders for effective trade to take place. In the absence of a state that can enforce contracts; religious and cultural beliefs can also exert some measure of standards for the conduct of those involved in the process. However, their effectiveness in lowering the costs of transaction depends on the degree to which the laid down guidelines were adhered to. With time, some economies of scale and specialization would emerge as a major characteristic of the trade relation. This has been noted in early Britain where overseas ventures were pursued

through trade expansion and joint stock corporations (Gonzalez de lara, Greif and Jha, 2008).

The growth of long distance trade usually poses two distinct transaction cost problems namely; the traditional problem of agency – the costliest of measuring performance where the influence of kingship determines the outcome of such agreements (or contracts). As the size and volume of trade expands, the problems of 'agencification' would become a significant constraint to trade. The second problem consists of contract negotiation and enforcement where there is no readily accessible way to achieve agreements and ensure contract enforcements. Negotiation and enforcement with other parts of the world involve the development of standardized weights and measures, units of account, a medium of exchange, merchant law courts and enclaves of foreign merchants, among others (North, 1994; Williamson, 2000).

The expansion of the market normally entails more specialized producers. Economies of scale would result in the hierarchy of organizations with workers working either in a central workplace or in a sequential production process. Occupational distribution of the population at this stage would reflect a considerable increase in the proportion of the labour force that is engaged in manufacturing and services, though the predominance in agriculture still exists. These evolving stages also reflect a significant shift towards societal urbanization. These kinds of societies would need effective, impersonal contract enforcement due to personal attachments. Isolations are no longer effective as more complex and impersonal modes of exchange occur.

To establish a realistic commitment to property rights (the rights individuals appropriate as a result of the ownership of labour or goods and services they possess) protection over time would require either a leader that exercises forbearance and restraint in using coercion, or the restraint on the ability to avert illogical seizure of assets. For instance, it has been found that in countries where

political institutions have considerable discretionary powers in the allocation of resources relative to market institutions considerable efforts would be used in capturing political powers such that the dissipation of financial, physical and intellectual resources would leave very diminutive resources needed to create suitable conditions for development (Adewole and Osabuohien, 2007).

In the last stage where specialization has increased, agricultural activities require a small percentage of the labour force. Economies of scale here apply to large-scale organization, not only in manufacturing but also in agriculture. Thus, individuals live by taking part in a specialized function and relying on a network of interconnection to provide the large amount of goods and services necessary for them. The occupational distribution of the labour force is expected to shift progressively from dominance by agriculture to manufacturing and eventually to services. In this final stage, specialization requires increasing percentages of the resources of the society to be engaged in transaction, so that the transaction sector rises to be a large percentage of GDP. This is so because specialization in international trade, finance, transport, communication, banking, insurance and so on, involves an increasing proportion of the labour force. Therefore, highly specialized modes of transaction and organizations will emerge. Specialization and division of labour across countries would require institutions and organizations to safeguard property rights across different international boundaries in order for markets to take with trustworthy obligation of all the agents or actors that are involved.

2.3 REVIEW OF THEORETICAL LITERATURE

This section looks at the literature and some theoretical issues. The trade liberalization - institutions - economic growth nexus in SSA has received attention since about two decades ago, whether from a theoretical or an empirical point of view. One probable reason why this is so could be because the

relationship cannot be defined with precision and it is quite unpredictable because even in some developed countries, employment has decreased when it opened up the economy, particularly the trade regime. Studies by Revenga (1992); Feenstra and Hanson (1996) concluded that increase in import competition or outsourcing has significant effect in terms of decrease in growth in United States of America (USA).

A basic proposition in international trade theory states that free trade is superior to protection because it allows a country to fully exploit its comparative advantage. All countries gain from trade through specializing in the production and export of goods in which they are relatively most efficient and importing the rest of their requirements from other countries that can produce them at a relatively lower cost. The result is that a given level of output can be produced more cheaply for all countries participating in international trade and invariably more employment is generated. Two major extensions of this standard proposition, namely the Hecksher-Ohlin model and Stolper-Samuelson theorem are used to explain comparative advantage. These theories are explained in succession below.

Fitzgerald and Perosino (1995) state that the H-O model unambiguously predicts the direction of change of aggregate and sectoral employment and factor prices. Output increases in the exportable sector and decreases in the importable sector as instantaneous adjustment takes place along the production possibilities frontier. As the exportable sector is more labour intensive than the importable sector, the change in the composition of employment increases the aggregate demand for labour and reduces demand for capital. Based on this, the equilibrium real wage rises and capital rental falls. Aggregate employment does not increase because supply is rigid, but the increase in wages encourages producers to adopt more capital intensive techniques in both sectors. According to Claustre, Timoh and Kim (2008), many analysts interpret the H-O model more realistically to include

labour market rigidities and unemployment. This means that an increase in manufactured trade between developing (labour surplus) and developed (labour scarce) countries is likely to result in an increase in employment in the former.

The basis for international trade arises not because of inherent technological differences in labour productivity for different products between different countries, but because countries are endowed with different factor supplies. Relative factor prices differ because of differences in factor endowments, for example, labour is relatively cheap in labour-abundant countries, and this makes them have a relative cost and price advantage over countries with relatively expensive labour in products that make intensive use of labour (this explains why the developing countries specialize in the production of primary/agricultural products). Conversely, countries well endowed with capital will have a relative cost and price advantage, that is, capital is relatively cheap, there will be capital abundance, and they will specialize in the production of capital-intensive products like aircraft, automobiles, computers among others - the case of the developed countries (Todaro and Smith, 2004). The relevance of this to the developing countries is that they can specialize in the production of their labour- and land-intensive agricultural produce for exports and generate revenue thereby benefiting from free trade. Besides, the generated revenue can be invested on projects that will aid economic growth. On the contrary, the capital-intensive products these developing countries cannot produce will be imported from the developed countries that produce them.

However, this is somewhat distant from reality, predominantly in developing countries, where market imperfection is pervasive, industrial production is characterized by economies of scale and market failures are common. It has also been assumed in the standard trade theory that resources are fully employed and trade is always balanced. But in these developing countries, characterized by high

unemployment levels, trade liberalization can impinge heavy adjustment costs in the form of reduction in output and aggravating trade deficits and unemployment. In these developing countries, trade liberalization predominantly fosters import liberalization that mainly involves lowering tariffs in unskilled labour-intensive protected sectors. In accordance with the Stolper-Samuelson (SS) theory this has the immediate effect of decline in factor reward to unskilled labour, widening the wage gap between skilled and unskilled labour and also loss of jobs for many unskilled workers.

As regards institutions, the New Institutional Economics (NIE) theory is a new development in economic thought based on institutional economics and some of the principles of Neo-classical economics (Natal, 2001). It has been applied in varying contexts. For instance, it can be engaged as non-technologically determined controls that can influence social interactions by providing the incentives to maintain regularity in human behaviour in historical comparative institutional analysis, (Greif, 1998). The NIE theory posits that economic activities that individuals engage in can be influenced by some social and legal relationships that exist among them. Hence, NIE embraces other areas outside the immediate domain of economics like politics, science and sociology as well as the interaction they can exert on economic outcomes. This is what makes institutions to be an area of economics that has made economics more closely in touch with other social science disciplines as they can be subjected to economic analysis.

The basic assumptions of New Institutional Economics (NIE) that relates to trade are three folds assumptions on individuals, assumptions on how and why individuals engage in contract; and assumptions on how individuals govern collective actions (Natal, 2001). In all the assumptions, the bottom line is that there should be some mechanism that regulates the participants' behaviour, as individuals can be opportunistic at times that could result to moral hazards

(Akerlof, 1970). Though some of the assumptions of NIE have been critiqued especially with regards to institutional change and predictability; it is still very relevant when assessing the roles institutions play in economic relations in particular and human relations in general.

LaPorta *et al.* (1999) developed the theories of institutional development which centre on factors that can lead to the formation and persistence of a given institutional framework in a society. The theories of institutional development can be classified into three based on their structural composition namely: economic, political and cultural institutional theories. The economic theory of institutional framework believes that institutions are essentially crafted when it is efficient to create them. The connotation of this is that institutions are mostly created by economic actors when the perceived social benefits of such creation significantly exceed the perceived transaction costs that are associated with their creation.

The political theory of institutional development, on the other hand, hinges fundamentally on redistribution of societal resources much more than economic efficiency. The basic maxim of the political institutional development is that institutions are fashioned by those that have political powers in such a way that they can stay in power with a view to extracting economic rents. This is very ubiquitous in a multi-ethnic society where there is the existence of conflict of interests between voters of different groups and their representatives in the parliament. The conflict of interests is with regards to skirmish of policy preferences, which can result to a number of inefficient public policies that are based on political *logrolling* and compensation of political allegiances instead of efficiency (Persson, *et al.* 2003; Adewole and Osabuohien, 2007). The third category of institutional development theory is the cultural theory of institutional development which postulates that a given society will usually hold beliefs that can shape collective actions of the constituting human agents.

The trade theories are not totally practicable in real life situations because, asking countries to specialize in the production of a product or service in which a country has comparative advantage would in the real sense of it favour the developed capital-intensive countries more because they will have more goods to produce than the developing labour-intensive countries. These developed countries are gradually taking over the goods produced by the developing countries. The implication of this is that the growth of these labour-intensive countries will be at a slow pace than the developed countries.

Moreover, several similar studies carried out on trade liberalization using different methodologies have come out with varying views on the impact of trade on a country's economic growth (Meyer *et al.* 2009; Ogunkola *et al.* 2006; Lavallee, 2005; Segura-Cayuela, 2006; Flaig and Rottmann, 2007; Kagochi *et al.,* 2007; Dollar and Kraay, 2003; Alonso and Garcimartin, 2009). These studies found out that the level of growth in the current year does have a bearing with the level of growth in the previous year, and that there are varying impacts of trade and institutions on economic growth. For some of these studies, there was a positive impact, while for others a negative impact.

2.4 REVIEW OF EMPIRICAL LITERATURE

This section looks at some empirical studies and the respective methodological approaches adopted in previous related studies on the impact of trade liberalization and institutions on economic growth in selected Latin America, Europe, Asia and SSA countries. The results show varied growth effects. The choice of the selected countries in this study stems from the fact that they have some peculiar economic similarities and they are all less developed countries.

The Gap in the Literature

In terms of methodology, some of the studies reviewed used elementary techniques in their analysis of data, for instance, Oyejide (1995), Mwaba (2000), Analogbei (2011), Tussie and Aggio (2010) and Chandra, Lontoh and Margawati used descriptive data. Some other studies also used the Ordinary Least Squares (OLS) technique in analyzing their model, for example, Dollar and Kraay (2003), Flaig and Rottman (2007) and Ogunkola *et al.* (2006). These methodologies are inadequate and elementary when serious econometric analyses are needed to be carried out. Thus, there is a need to carry out the econometric analysis with more sophisticated econometric techniques which this study provided. Aside this, some of these studies had examined the impact of labour market institutions on employment, on the labour intensity of output growth, the impact of tariff reform and currency devaluation on rural poverty and inequality in Nigeria (see Flaig and Rottman, 2007; Gamberoni *et al.*, 2010; Omoke, 2006). These studies did not examine the effects of economic, political and cultural institutions on growth which is the focus of this study.

The discourse in literature is that political violence, an indicator of weak political institutions, has a negative effect on economic growth with estimated overall effect being significantly larger than the direct capital reduction effects. Another discovery from literature is that most of the studies focused on trade liberalization and economic growth, with few emphasizing on institutions and how they affect economic growth. To the knowledge of the researcher, the studies that have been carried out had not examined the impact of the combination of trade liberalization and institutions on economic growth in SSA countries; most of the studies have focused on Asian, European and Latin American countries. The findings of these studies have revealed that institutions can have either positive or negative impact on economic growth; and that countries can have weak or strong institutions.

This study is quite different from other studies reviewed in the following ways; first, the other studies reviewed did not carry out panel unit root tests (for those that used pooled data). This study deemed it fit to carry out panel unit root tests on the variables used in order to test if they are stationary or non-stationary. This is important so as not to have spurious or nonsense results at the end of the data analyses. The Augmented Dickey Fuller (ADF) unit root test was used because it combines information based on individual unit root tests and allow for a heterogeneous alternative hypothesis where the probability values can vary across countries. Second, the other distinct factor is the fact that the selected SSA countries in this study are quite distinct from countries used in previous studies.

Therefore, having carried out a critique of the studies reviewed, this study found out gaps in the literature which other studies did not examine, thereby trying to fill these gaps. This study categorized the selected SSA countries into Central, East/Southern Africa and West African sub-regions and the analysis of each sub-region was carried out. Furthermore, the selected SSA countries were also categorized based on the World Bank's (2007) classification into moderately inward-oriented, strongly inward-oriented and moderately outward-oriented countries and each were analysed separately. In addition, the interaction effect between trade liberalization and institutions was also carried out. The reason for this is for the study to examine under which type of institutions would trade liberalization affect economic growth better. Thus, this study on completion would have contributed to existing knowledge on the link between trade liberalization, institutions and economic growth in SSA countries.

The review of these studies is presented in Table 2.1.

Table 2.1: Summary of Review of Empirical Literature

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Baliamoune-Lutz and Ndikumana (2007).	The study examined the growth effects of openness to trade and the role of institutions in 39 African countries between 1975 and 2001.	Growth Theory.	Panel Data.	Arellano-Bond GMM.	The result showed that at high levels of trade, the quality of institutions plays a key role in the transmission of trade gains into growth.	Aside institutions, the under-development of African financial systems, which are characterized by pervasive inefficiencies in financial intermediation may also explain weak transmission from trade liberalization to growth, the study did not consider this.
Gamberoni *et al.* (2010).	The study examined the role of openness and labour market institutions for employment dynamics during economic crises.	Dynamic model of employment growth.	Panel Data.	GMM.	They found out that domestic debt and banking crises had more severe impact on employment than the global economic downturns and high unemployment benefits had a strong reduction on employment growth.	The study concentrated on trade openness and labour market institutions as it affects employment but this is not the only reason that accounts for low employment rates in countries.
Dollar and Kraay (2003).	It examined the importance of trade and institutions in driving growth.	Growth theory	Panel Data	Ordinary Least Square (OLS).	They found out that rapid growth, high levels of trade and good institutions go together.	The study did not focus on the decadal changes in the measures of institutional quality which can also affect trade in the long-run.
Kagochi *et al.* (2007).	It looked at the impact of economic and political freedoms on economic growth in Nigeria.	Neo-classical growth model	Time series	Error Correction Model (ECM).	They found out that economic freedom does not have a significant impact on growth while political freedom has a significant impact on the growth of Nigeria.	This study focused only on economic and political freedoms but there are other important aspects of institutions such as legal and cultural that affects economic growth as well.

Source: The Researcher's Compilation, 2012.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Flaig and Rottman (2007).	It examined the effects of labour market institutions on the labour intensity of output growth in 17 OECD countries.	The concept of employment threshold.	Panel Data	Ordinary Least Square (OLS)	They found out that the employment threshold is not only a possibly time-varying parameter but also depends on labour market institutions.	The selected countries in this study are the more developed European and Asian OECD countries than African countries. The concept of employment threshold which is the growth rate of production which is necessary for keeping employment constant is another criticism; the study did not mention the consequence of not attaining this employment threshold to a country.
Mwaba, (2000).	It looked at the impact of trade liberalization on economic growth in Africa.	Solow growth model.	Descriptive data.	Descriptive Analysis.	It found out that Africa has maintained the highest import barriers through tariffs and quantitative restrictions among the developing countries. Thus, measures should be embarked on to increase the competitiveness of their products.	This study is not so in-depth as expected because it is descriptive in nature, it made use of tables, charts and graphs as illustrations, without any statistical or econometric computation

Source: The Researcher's Compilation, 2012.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Omoke, (2006).	The study examined the impact of tariff reform and currency devaluation on rural poverty and inequality in Nigeria.	Endogenous growth theory.	Time series data.	Computable General equilibrium Framework.	The study observed that trade liberalization reduces rural real wage and rural income leading to higher labour demand with worsening inequality.	The focus of this study is mainly on reducing rural poverty, what happens to the urban areas considering the fact that the major proportion of the population in Nigeria live in the urban areas.
Analogbei, (2011)	The study examined the impact of trade policies on productivity in Nigeria.	N/A	N/A	Descriptive Analysis.	It found out that the productive sectors initially responded positively to the SAP policies, but encountered constraints such as decay of infrastructural facilities and low technological capability as the years progressed.	This study is not an in-depth one because it is descriptive in nature without any statistical or econometric computations.
Chandra, Lontoh and Margawati, (2010).	The study examined the gender implications of trade liberalization in Southeast Asia.	N/A	Descriptive Data	Descriptive Analysis.	The study revealed that trade liberalization has had profound positive and negative effects on the wellbeing of women in Southeast Asia.	We cannot use this study as a yardstick for conclusion because Southeast Asia is quite different from Africa, moreover, the study focused on women only.

Source: The Researcher's Compilation, 2012.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Meyer *et al*, (2009).	It examined the impact of market-supporting institutions on business strategies by analyzing the entry strategies of foreign investors entering emerging economies.	N/A	Primary Data.	Multinomial logit (M-Logit) regression model.	The study found out that the stronger the institutional framework; the more likely investors would invest in these economies and the larger the market would be.	The study only focused on market-supporting institutions as the only determinant of foreign investment but there are some other institutions such as economic, political and legal that can also affect the presence of foreign investment in a country.
Tussie and Aggio, (2010).	It examined the economic and social impacts of trade liberalization in eight developing countries.	N/A	Descriptive data.	Descriptive Analysis.	The study observed that reforms in all the countries used as case studies were so deep and all encompassing that it is difficult to separate the effects of trade reforms from the other reforms and arrive at any definite conclusions about their impacts economically and socially.	The selected countries used in this study are entirely different, and it is not in-depth because it is descriptive in nature.
Alonso and Garcimartin, (2009).	The study assessed the determinants of institutional quality.	Institutional Theory.	Panel data.	2SLS	The results of the study show that the main determinants of the quality of the institutions of a given country are its income per head and its income distribution, the efficiency of its tax system and the educational level of its population.	This study is streamlined only to the determinants of the quality of institutions; no mention is made of trade which is an important factor in the growth of a country.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Ogunkola *et al* (2006).	The study examined the impact of trade and investment policy reforms on some macroeconomic performance variables.	The New growth theory.	Time series data.	Ordinary Least square (OLS).	The study found out that that labour force growth is not a significant determinant of aggregate output growth, while the growth of investment, import share, export share and foreign direct investment ratios are major factors influencing aggregate output growth. It also found that trade and investment policy reforms do not have significant impact on aggregate output growth.	This is a restricted study in that it only focused on investment policy reforms as they affect macroeconomic performance leaving out institutions that play important role in determining macroeconomic performance.
Lavallee, (2005)	The study examined the influence of proximity and quality of institutions on trade in 145 countries between1984 and 2002.	Institutional theory.	Panel data.	Gravity model.	The result showed that institutional proximity tends to increase trade and that corruption in both importing and exporting countries acts as a barrier to bilateral exports, which is harmful to trade especially when there is weak bureaucratic quality.	The selected countries used in this study comprise countries in the Asian, European and American continents and not African countries. The study did not consider bad governance as a factor that affects trade.

Source: The Researcher's Compilation, 2012.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Soares, (2005).	The study assessed whether or not the trade liberalization process had any effect on both the reduction in the wage differential between formal and informal workers in Brazil.	Hecksher-Ohlin Trade Theory.	Time series and cross-sectional data.	Panel data analysis.	The result showed that the fall in the wage gap between formal and informal workers in the manufacturing sector was affected by trade-related variables, particularly, by the import penetration ratio.	The study's focus was only on Brazil which cannot be used as a generalized result for conclusion.
Huang and Chen, (1999).	The study highlighted the effects of trade liberalization on agriculture in China.	Welfare Theory.	Time series and cross-section data.	Partial Equilibrium Model.	The result showed that rice farmers in China gained more than the others from the process of trade liberalization due to the fact that there was a fall in production cost and a rise in domestic rice price as most agricultural inputs' prices fell with trade liberalization.	The study is a one-sector, one-country (agricultural sector, China); hence the result is not comprehensive enough for generalization.
Meon and Sekkat, (2008).	The study examined the effect of institutional quality on trade in 59 countries spanning across the American, Asian and African continents between 1990 and 2000.	Trade theory.	Panel data.	Fixed Effects Model and Instrumental Variables.	The result showed that exports of manufactured products were positively affected by rule of law, government effectiveness control of corruption and lack of political violence but control of corruption exerted more effects on export of manufactured products when compared to non-manufacture and total exports.	The study decomposed total exports into manufactured and non-manufactured exports, this is not sufficient as exports comprise more than these two categories.

Source: The Researcher's Compilation, 2012.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Oyejide and Bankole, (2001).	The study examined the unilateral and multilateral approaches of the implications of liberalization of the services sector in Nigeria.	N/A	Descriptive data	Descriptive analysis.	The result of the analysis showed that Nigeria's share of services trade in Africa rose unsteadily from the late 1980s to 1998, but indicating greater dynamism than Africa's share of world services trade.	The study was not in-depth because of the inadequate dis-aggregation of data which is an important feature of services trade in Nigeria.
Bhattacharyya, (2011).	The study examined the impact of trade liberalization on institutional development using 31 developed and 103 developing countries with data spanning 1865-1940 and 1980-2000 respectively.	Theories of Trade and Institutional Development.	Panel Data.	Limited Information Maximum Likelihood (LIML) Fuller estimation method.	The study found that the within variation in economic institutions can be explained by trade liberalization as well as a weak evidence in favour of the 'critical juncture' view of history as the country fixed effects are only weakly correlated with settler mortality and population density.	There are several channels through which trade liberalization impacts institutions but the study did not give a detailed understanding of the channels through which trade liberalization impacts institutions.
Bouis, Duval and Murtin, (2011)	The study examined the policy and institutional determinants of long-run economic growth in selected OECD and non-OECD countries.	The Human Capital Augmented Neoclassical Growth Model.	Panel data.	Pooled mean group (PMG). estimator.	The study found out that regulatory barriers to entrepreneurship, explicit barriers to trade and, especially, patent rights protection appear to be fairly robust determinants of long-run cross-country differences in technology and that some other policies and institutions such as trade liberalization speed up technology convergence.	The study was restricted to institutions as they affect entrepreneurship, and the countries cannot be used for general conclusion.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Mesike, Giroh and Owie, (2008).	The study analyzed the effect of trade liberalization policy on the Nigerian rubber industry.	Descriptive Statistics.	Time series data.	Ordinary Least Square (OLS).	The result of the study revealed that output and producers price exerted positive effects on export supply, that is, a rise in output and producer's price would cause exporters to export more natural rubber, and the domestic consumption quantity and annual rainfall were disincentives to rubber exporters.	The study has a shallow view in that trade liberalization is better viewed as a general consensus, that is, its general impact on the economy.
Djeri-wake, (2009).	The study examined the impact of Chinese foreign direct investment and bilateral trade with Nigeria economic growth.	Augmented Aggregate Production Function (APF) Growth Model.	Time series and cross-sectional data.	Ordinary Least Square method (OLS) and the Granger Causality Test.	The OLS short and long-run estimation of China-Nigeria bilateral trade result showed positive trends while the estimated coefficient of short-run are not positively correlated with Nigeria economic growth like the long-run coefficient. While the Granger causality test result revealed that the Chinese FDI inflows to Nigeria is due to the Nigeria Labour Force dynamism which have a positive impact on the China-Nigeria bilateral trade growth.	This study focused mainly on the bilateral trade between China and Nigeria; no mention is made of the quality of institutions in both countries, and yet the quality of institutions can affect trade.

Source: The Researcher's Compilation, 2012.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Oyejide, (1995).	The study ascertained the impact of trade and regional integration on the development of Sub-saharan Africa.	N/A	Descriptive Data.	Descriptive Analysis.	The result of the study showed that import restrictions made exporters face more appreciated exchange rates than would have been the case in their absence and the lesson for Sub-saharan Africa is that these elements combine to reduce the international competitiveness of the export sectors of the African countries and subsequently reduce exports and Gross Domestic Product (GDP) growth.	The study was not in-depth enough as it did not employ any econometric tool of analysis.
Siba, (2008)	The study ascertained the determinants of institutional quality in Sub-saharan African countries.	Aid – Institutions Paradox.	Panel Data.	2SLS	The empirical results have shown that historical factors such as state legitimacy determine the quality of current institutions in the region, foreign aid dependence erodes the quality of governance as measured by rule of law and the variability of aid counterbalances the destructive nature of high level of aid dependence.	This study is streamlined only to the determinants of the quality of institutions; no mention is made of trade which is an important factor in the growth of the selected Sub-saharan countries.

Source: The Researcher's Compilation, 2012.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Márquez-Ramos (2010)	The study examined the determinants of international trade in African countries using Ghana and South Africa as case studies.	N/A	Time series and cross-sectional data.	Gravity model.	The results showed that determinants of trade have a different impact in the two African countries. In South Africa, geographical and social factors play a key role on trade relationships. Moreover, technological innovation in importer countries leads to higher exports from this country. While in Ghana, exports are higher when they are addressed to countries with higher levels of economic freedom.	The study focused on Ghana and Nigeria only, this cannot be used for generalization of African countries.

Source: The Researcher's Compilation, 2012.

Author	Objective	Theory	Data Set	Methodology	Result	Critique
Heid and Larch, (2012)	The study examined the effects of immigration and trade on unemployment in 24 OECD countries.	Neo-classical trade theory.	Panel data.	GMM	The study found out that there is no significant aggregate effect of immigrant inflows on unemployment rates in countries that engage highly in trade because immigration and trade exposure of a country are highly correlated and, therefore, not statistically independent.	The authors subtracted return migrants from total immigrants and assumed that it is only the net number of migrants which influences the unemployment rate, this is not accurate since from a theoretical point of view, it is not entirely clear whether net or total migration flows should be used. If labour markets are characterized by search frictions, total inflows may be the appropriate measure especially for quantifying the short-run impact as every new migrant has to search for a job. However, in the medium- to long-run or when labour markets are very flexible, net inflows net inflows may be more appropriate.

Source: The Researcher's Compilation, 2012.

2.4.1 Government Policies on Trade Liberalization in SSA

The gloomy performance of the Import Substitution Industrialization (ISI) policy led to the adoption of outward-oriented development strategy by many sub-Saharan African (SSA) countries as part of their structural adjustment and reform programmes from the mid-1980s. The structural adjustment programme (SAP) was adopted with the purpose of liberalizing the economies of these countries particularly the external sector. The main objective of trade liberalization in the mid-1980s was to promote economic growth by capturing the static and dynamic gains from trade through a more efficient allocation of resources; greater competition; an increase in the flow of knowledge and investment and more importantly, obtaining a faster rate of capital accumulation and technical progress. Trade policies in most SSA countries went through major changes within the

context of SAP during this period. Foreign trade was liberalized through the reduction of tariffs and non-tariff barriers and reduction of import duties applied to imports in a large number of SSA countries (Babatunde, 2009).

In addition, import permits were abolished, and duty rates as part of tariff liberalization were also lowered in many SSA countries. Currencies were devalued to encourage exporters, with the aim of boosting exports and growth, and fostering the integration of SSA into the global economy. A substantial number of SSA countries virtually eliminated parallel market premiums, with buying and selling of foreign exchange then becoming market-based, while abolishing previous restrictions on currency transactions. Thus, this new policy strategy attempted to promote greater openness in order to boost growth and encourage the competitive integration of the SSA economies into the globalizing world (Babatunde, 2009).

The failure of the import–substitution strategy and the debt crisis in the early 1980s led to a new accord on the importance of trade liberalization and   exports in growth strategies. This new accord was the main focus of the reforms initiated by SSA countries and the developing world in general from the early 1980s, within the framework of the Structural Adjustment Programmes (SAP). As a result, the mid 1980s witnessed the formulation and implementation of wide-ranging trade liberalization measures such as export promotion measures by most SSA countries with the support of the IMF and the World Bank.

The aftermath result is that starting from the mid-1980s, and especially in the 1990s, most SSA African countries liberalized their trade regime to some extent, with many countries reducing trade barriers significantly more than others (especially restrictions on imports). These reforms were aimed at making it easier to import, by reducing tariffs and non-tariff barriers, and encouraging exports, by

eliminating export taxes and providing export incentives. Tariffs are now the main trade policy instruments of most SSA countries. A wide picture of trade policy reform can be obtained by examining the trends in SSA countries tariffs level. For instance, average tariffs have been reduced significantly, almost halved on average, in SSA over the past 30 years, the average schedule tariff that was 38.5 percent between 1980 and 1985 in the West African sub-region stood at 14.4percent between 2000 and 2005 period, and 14.1 percent between 2006 and 2011 (Morrissey and Mold, 2011).

The tariff structure has also been simplified to not more than five bands in some SSA countries with the reduction of the number of bands after the adoption of trade liberalization. For example, the number of bands was reduced from 8 to 5 (0, 5, 10, 15 and 25 percents) between 1994 and 2011 in Kenya, the reduction was made to four in Zambia (0, 5, 15 and 25 percents) and Tanzania with a simplified five-tier structure with tariff rates of (0, 5, 10, 20 and 25 percents) for the same period. The modal rate, that is, the most common, ranges from 10 percent to 25 percent; and applies to between 12 to 33 percent of all tariff lines depending on the country between 1994 and 2011 (Africa Development Indicators, 2011).

Tariffs in some cases are also based on common external tariff (CET) as a result of the regional integration arrangement among the West African Economic and Monetary Union (WAEMU) countries. For instance, the CET groups custom duties into four major categories in Niger, Mali, Benin and Burkina Faso in the order of essential goods (0 percent); staple goods (5 percent), intermediate goods and inputs (10 percent) and final consumer goods (20 percent). Similarly, duty rates as part of tariff liberalization were significantly lowered in some SSA countries. For example, Mauritius reduced its rates from 250 per cent to 100 per cent; Tanzania from 200 per cent to 60 per cent; Zambia from 150 per cent to 50 per cent and in Kenya from 170 per cent to 40 per cent. In Zimbabwe and Ghana

the rates range from 5 per cent to 30 per cent and 10 per cent to 40 per cent respectively (Oyejide, Ndulu and Gunning, 1999). The general pattern is that significant tariff reductions (trade liberalization) can be observed in almost all SSA countries, although the timing and extent of reductions vary across countries (Africa Development Indicators, 2011).

In addition, other measures were also adopted to reduce anti-export bias in most of the SSA countries. Export taxes and levies were either significantly reduced or totally eliminated in most of the SSA countries. For example, Cameroon removed all export taxes while Mali abolished export levies and duties on most exports (the only export levies in force are the service provision contribution (SPC) of 3 percent on the free on board (f.o.b) value of gold, Ghana has no export quotas or voluntary export restraints. Similarly, Uganda replaced its export licensing requirements by a less restrictive export certification system in 2009 and also abolished export taxes. Most exportation in Botswana does not require permits. Significant reduction in the effective rates of protection was also achieved in most of the SSA countries. Countries such as Kenya, South Africa, Ghana, Mali, Malawi, Tanzania, Zimbabwe and Cote d'Ivoire witnessed a significant reduction in their effective protection rates (Africa Development Indicators, 2011).

The remaining export prohibitions that are still on in some cases apply only to sensitive goods because of the need to ensure quality as well as for health and environmental reasons. Export processing zones (EPZs) were also established by the government in some of the SSA countries. For example, the Free Zones Act was enacted in the Gambia. Similarly, Mali also created free trade zones as part of the measures adopted to boost export performance. Export Processing Zones companies also account for the bulk of manufacturing exports in Mauritius, which is dominated by textiles and clothing. Incentives are given which take the form of exemptions or reductions in duties and taxes. Free zone enterprises are required to

export a substantial proportion of their production; the Nigerian government is currently using an indicative benchmark of 70 percent.

Exchange rate regimes in most of the SSA countries were also liberalized. A good number of SSA countries stopped fixing exchange rates and over-valuing their currencies in order to stimulate exports and make the economy more competitive. Madagascar, Botswana, Kenya, Uganda, Ghana, Tanzania, Zambia, Nigeria and Cote d'Ivoire practically eliminated exchange rate premiums, where buying and selling of foreign exchange is now market-based and abolishing previous restrictions on current transactions. The system of multiple exchange rates was abolished in Burundi. From 1996, Ethiopian currency, the Birr, was allowed to float, thereby resulting in the convergence of the official, auction and parallel market exchange rates. After liberalizing its external sector in 1990, Benin Republic's currency was devalued and its black market premium averaged only 2 per cent between 2000 and 2010. We can therefore conclude that most SSA countries witnessed a significant relaxation of trade barriers. Import restrictions are now lower and export barriers have been significantly reduced (Africa Development Indicators, 2011).

2.4.2 Trade and Economic Growth

Countries are often advised to liberalize their trade with the rest of the world; when such advice is given it is usually interpreted to entail simple policy changes, such as reducing or eliminating import tariffs (that is, the standard forms of tax on imports), removing non-tariff barriers that constrain imports, and if necessary removing licensing and other restrictions pertaining to exports. The discourse in literature is that wherever possible, countries should liberalize their trade (Hare, 2006). Foreign or international trade has been regarded as an 'engine of growth' because a country derives both direct and indirect benefits from it. The direct benefits stem from the fact that when a country specializes in the production of

commodities which it produces cheaper in exchange for what others can produce at a cheaper cost; the country gains from trade and there is increase in national income which, in turn, raises the level of output thereby increasing the level of employment and reducing poverty rate and hence, enhancing the growth rate of the economy. Aside generating employment, foreign trade also increases savings and investment, and enhances greater backward and forward linkages with other sectors of the economy. For instance; it helps to transform the subsistence sector into the monetized sector by providing markets for farm produce thereby raising the income and standard of living of the peasantry. The expansion of the market leads to a number of internal and external economies, and hence to reduction in cost of production.

The indirect benefits of international trade include; fostering of healthy competition, checking inefficient exploitative monopolies established on the grounds of infant industry protection, importation of foreign capital, technical know-how, skills, managerial talents and entrepreneurship. Furthermore, by enlarging the size of the market and the scope of specialization, international trade makes a greater use of machinery, encourages inventions and innovations, raises labour productivity, lowers costs and leads to economic growth (Jhingan, 2007).

But these benefits have been criticized as regards the less developed countries on the grounds that international trade has retarded their development. This is evidenced from the fact that the developed countries have a large base of manufacturing industries with strong spread effects. By exporting their industrial products at cheap rates to the less developed countries, they price out the small-scale industry of the less developed countries. This has converted the less developed countries into producers of primary products for exports. They suffer from excessive price fluctuations because the demand for primary products in the export market is inelastic.

Tables 2.2 and 2.3 show the annual average percentage changes for developing countries' export and import volumes between 1973 and 2009, respectively. For developing countries as a group the volume of trade increased significantly in the latter part of the 1980s. The growth of export volumes increased to an annual average of 6 percent in 1987-90, compared with 5 percent in 1983-86 and stagnant levels in the 1970s. The impact of liberalization measures and adjustment policies is likely to have made an important contribution to this turnaround. The growth of exports from Asia since the start of the 1970s has been dramatic; up to 1988, the newly industrializing economies (NIEs) have had very high growth rate of exports, but subsequently this growth has slowed and has been outpaced by the growth of exports from other open Southeast Asian countries. The only group that experienced an appreciable slowdown in export growth in the recent period was the developing countries of Europe, where trade has been disrupted by developments in the former USSR and the transition away from regional trading arrangements.

With respect to imports, Asian countries had the highest growth in imports in real terms among the developing regions at 13 percent per annum in 1987-90, reflecting their reliance on imported raw materials and components, the strong growth of domestic demand and import liberalization measures. The growth rate of import volumes in Western Hemisphere countries has also increased, to 5 percent, as their economies have opened up and access to financial markets has improved. Continued economic problems in SSA have resulted in little respite from the declining volume of imports. Imports of the developing countries in Europe grew steadily from the 1970s up to the end of the 1980s at 3-4 percent per annum, but have fallen sharply in 1990-91.

Table 2.2: Developing Countries' Export Volumes, 1973-2009 (in annual average percent changes)

Year	Total Developing Countries	Africa	Asia	Middle East	Europe[1]	Western Hemisphere	SSA	Four Asian NIEs[2]
1973-82	0.2	-2.4	9.2	-5.1	4.3	1.9	-1.0	13.3
1983-86	4.8	4.4	10.5	-1.1	5.1	2.6	1.7	13.4
1987-90	5.9	2.3	11.8	5.4	-4.2	7.2	1.0	11.4
1991-94	5.9	2.7	10.4	5.7	-3.5	7.5	1.3	11.7
1995-98	6.4	2.9	10.2	5.9	-2.4	7.9	1.7	12.0
1999-2002	6.7	3.2	11.1	6.0	1.8	8.3	2.1	12.3
2002-05	8.5	3.5	11.5	6.3	2.1	8.6	2.4	12.6
2006-09	11.9	4.1	11.8	6.8	2.6	9.0	2.8	12.9

Source: International Monetary Fund (2009b). **Note:** [1]Includes Eastern European countries and the former Soviet Union. [2]The four newly industrializing economies (NIEs) are Hong Kong, Korea, Singapore and Taiwan Province of China.

Table 2.3: Developing Countries' Import Volumes, 1973-2009 (in Annual Average percent changes)

Year	Total Developing Countries	Africa	Asia	Middle East	Europe[1]	Western Hemisphere	SSA	Four Asian NIEs[2]
1973-82	4.3	4.7	8.8	13.9	3.1	3.6	0.7	10.1
1983-86	-0.5	-6.5	6.7	-10.4	3.9	-4.8	-3.0	8.1
1987-90	6.5	1.2	13.1	-0.4	3.6	5.0	0.1	15.7
1991-94	6.9	1.5	13.2	-0.1	2.7	5.2	0.6	15.9
1995-98	7.1	1.8	13.6	1.2	2.5	5.4	0.9	16.3
1999-2002	7.5	2.1	13.9	1.5	2.4	5.8	1.4	16.8
2002-05	7.9	2.5	14.3	1.9	3.3	6.1	1.8	17.0
2006-09	8.2	2.9	14.0	2.1	4.1	6.4	2.3	17.2

Note: Source and information as in Table 2.2.

CHAPTER THREE

ECONOMIC, POLITICAL AND CULTURAL INSTITUTIONS IN SSA

3.1 Introduction

This chapter contains a brief history of SSA and examined the role of institutions in SSA in comparison with the other regions of the world. The chapter also contains the historical development of institutions and trade in SSA which highlights a brief history of institutions and trade in the SSA region, the concepts of New Institutional Economics (NIE) and institutions, in which the relevance of NIE and institutions are enumerated, the determinants of the quality of institutions; it also contains some stylized facts about SSA, as well as trade policy and economic performance of SSA.

3.2 Brief History of Sub-Saharan Africa (SSA)

The African continent is one of the continents in the world. Sub-Saharan African (SSA) countries are geographically referred to as African countries that are in the south of the Sahara or those African countries which are fully or partially located south of the Sahara. The countries in SSA consist of all African countries with the exception of North Africa. SSA has 48 countries with over 13.6 percent of the world's population in 2011 and more than 67.35 percent (33 out of 49) of the countries grouped as Least Developed Countries (LDCs). The region contributed as little as 1.46 percent of the world's total output in 2011 (World Population Reference Bureau, 2011; WTO, 2011; World Bank Group, 2011).

The average per capita income for SSA in 2005 was US$572 with an average annual growth rate of 2.1 percent between 2000 and 2005, and less than 2 percent from 2006 to 2010. (World Bank, 2008; 2010). Also, it has been said that the combined GDP of SSA is the same in value as that of Australia as at 2004 (Yang and Gupta, 2007). Some factors have been noted to account for the economic

performance of the region, which include a weak political culture, corruption, the devastating impact of sicknesses and diseases especially malaria and HIV/AIDS, weak institutions, inadequate infrastructures, among others (Artadi and Sala-i-Martin, 2003; Fosu, 2008; Ike, 2009, Osabuohien, 2011).

Olayiwola and Busari (2008) outlined economic growth episodes of SSA countries. The first was post-independence prosperity where some SSA countries inherited buoyant economies from the colonial regimes. The second was the growth episode that started in the early 1970s where most SSA countries had poor economic outcomes characterized by negative growth in real GDP per capita, less favourable terms of trade and so on. The last was between the late 1970s and late 1990s with macroeconomic instabilities in most of the SSA countries. The major reason, inter alia, which can be put forward for the reversal was the inefficiency of institutions and mismanagement of the various economies (Collier and Gunning, 1999; Olayiwola and Busari, 2008). This episode tallies with the period in which most of the countries were operating import substitution strategies as well as other forms of trade restrictions. This has prompted some reform measures in the countries (Busari and Omoke, 2005; Aigbokhan and Ailemen, 2006).

In terms of foreign trade, SSA countries have performed below expectations. For instance, from 2004 to 2007, SSA's total export share in the world total exports stagnated at a low value of 0.04 percent. The values for service exports were even lower with the figures revolving at 0.02 percent between 2007 and 2008 (World Bank, 2008; World Bank Group, 2010). The scenario is even worse when manufactured exports are considered. They have a paltry value of 0.10 percent from 1997 to 2003 but increased to 0.02 percent where it has remained since 2004 up to date. Furthermore, the percentage share of SSA's exports in the value of GDP was far lower than what obtains in other developing regions such as Latin America and the Caribbean (LAC); and Middle East and North Africa (MNA). For example, the percentage of manufactured exports in relation to GDP in 2008

for SSA was 5.85 percent compared to the world average of 17.35 percent. For service exports, it was 7.72 percent in SSA, while it was 11.77 percent and 18.95 percent for world average and MNA in 2008, respectively (World Bank, 2008; World Bank Group, 2010). It is obvious from above that international trade in SSA have not been impressive.

Furthermore, SSA performed less than other regions of the world, such as North Africa; East Asia-Pacific; Latin America and the Caribbean; Europe and Central Asia and the Middle East in terms of the quality of institutions. The performance of SSA in international trade was not only less than that of other regions; it is equally lower than the world average. On the other hand, the SSA region has low values in the various measures of institutional quality. The SSA's figures on institutional quality are both lower than those of other regions aforementioned as well as the world average for the period studied.

3.2.1 Historical Development of Institutions and Trade in SSA

This study used decadal categorization of the development of institutions to make the discussion systematic. It started from the 1960s when most of the SSA countries had their political independence from their colonial masters. However, the policies that were adopted had some overlaps as some spanned from one decade to another.

In the 1960s, most SSA countries embarked on Import Substitution Strategy (ISS) with the major aim of correcting balance of payments challenges and trade outcomes. The import-substitution options were designed for a country to reduce import dependence. The ISS, which has features of foreign trade and economic policies, is based on the need for a country (especially a developing one) to lessen foreign dependency through domestic production. The ISS has some policy instruments that include an active industrial policy of subsidizing and

coordinating production of desired substitutes; protective barriers to trade through the use of tariff; use of exchange rate to enhance the import of capital goods such as machinery that are essential for domestic manufacturing, among others. At any rate, the policy mix varies across countries/regions depending on their peculiar needs. For example, in Brazil, the ISS process that spanned from 1930 until the end of the 1980s entailed currency devaluation as a means of enhancing exports and discouraging imports, which promoted the consumption of domestic products, as well as the introduction of differential exchange rates for importing capital goods and consumer goods (Werner, 1972; UNCTAD, 2005). However, the inability of most SSA economies to diversify their productive base as well as low level of technological advancement militated against the effectiveness of the ISS (Bhowon, Boodhoo and Chellapermal, 2004). In Kenya (just like Mauritius), ISS was pursued as a means of promoting industrialization after her independence. The main objectives of the ISS include the pursuance of rapid industrial growth; reduction of deficit balance of payment challenges and reduction of unemployment though job creation. The major policy instruments used were an overvalued exchange rate, high tariff barriers, import licensing, foreign exchange controls and quantitative restrictions to protect local industries (Gerrishon, Olewe-Nyunya and Odhiambo, 2004).

The 1970s witnessed trade policy regimes that can be generally classified as Export Promotion Strategy (EPS). The EPS was essentially prompted by an increasing recognition of the economic realities facing most of the countries in SSA. To this end, most of their governments made some attempts to change the industrial strategy from import substitution to export-led industrialization as reflected in their various Development Plans of the late 1970s and early 1980s. For instance, in Kenya, the Fourth Development Plan (1979-1984), advocated a more open strategy for the industrial sector in order to promote exports. It was designed to create a conducive environment for industries, through reforms in trade and industrial regimes. An example was the gradual replacement of

quantitative restrictions with equivalent tariffs. Another measure was the introduction of a more liberal exchange rate policy and the strengthening export promotion schemes (Foroutan, 1993; Gerrishon *et al.,* 2004). At that time, several SSA countries had agriculture as the major component of their export baskets. Given the fact that most of their economies were not technologically equipped, they had challenges in processing and storing their products, which hampered their export competitiveness. The aftermath of this was the low performance of the countries in foreign trade. To curb the problem, marketing boards were established in most SSA countries with the aim of buying products from farmers and prepare such products for exports. However, the activities of the Marketing Boards were flawed by corruption, ineffective control, among others.

In the 1980s, most SSA countries were to some extent influenced by the Bretton-Woods Institutions – notably the World Bank and the International Monetary Fund (IMF). This resulted from the fact that most of the SSA countries were indebted to them and to qualify for loan reschedule or additional loans, they were made to embark on economic restructuring. This led to the introduction of the Structural Adjustment Programmes (SAP) in most SSA countries (Ajakaiye and Oyejide, 2005; Akinkugbe, 2008). Trade policies and institutions like other macroeconomic instruments were influenced by SAP. During this period, some institutional and market-oriented initiatives were also embarked on with a view to re-orienting the economy. Some of the initiatives such as export compensation scheme, import duty and value added tax (VAT) remission schemes had some elements of changing ISS to EPS. This was based on the fact that they were crafted in order to improve export competitiveness. For instance, Zambia in 1983 started the measures towards an export-led policy in its SAP, which include trade liberalization, exchange rate management as well as export incentives (Bhowon *et al.,* 2004). Nigeria had similar measures, which started in 1986 (Ogunrinola and Osabuohien, 2010).

After the 1980s that witnessed the SAP era, the 1990s did not totally jettison the programme but it was improved by what may be described as a mixed policy regime. Export-led industrialization was equally pursued in the 1990s, which was characterized by the establishment of Export Processing Zones (EPZs) in most SSA countries. For instance, the law for the establishment of the EPZs' systems in Nigeria was the Nigerian Export Processing Zones Authority Decree No. 63 of 1992. The decree empowered the Nigerian Export Processing Zones Authority (NEPZA) to control the Nigerian EPZs programme and also to grant licences to operators in EPZs (Onlinenigeria.com, 2010; Osabuohien, 2010). The EPZs were essentially designed to improve the export base of SSA countries in the world markets by providing tax holidays and other incentives. They were also meant to provide economies of scale production as operators (companies) agglomerate at the EPZs.

Infrastructures were equally meant to be provided at the EPZs to reduce cost of production, improve productivity and as a result engender export competitiveness. However, establishment of several EPZs in many SSA countries was on political ground against economic efficiency. This, coupled with infrastructural challenges, has been some of the reasons why the laudable objectives of the EPZs are far from being realized. For instance, in Nigeria and Kenya, what all the EPZs in the respective countries produce are far less in value than what is been produced in a community in China (Collier, 2009).

Given the increased recognition of export performance as vital agent of economic growth, the period after 1999 has witnessed the promotion of export capacities in many SSA countries. One of the measures was the need to improve export supply in SSA by reducing some of the inherent constraints (Bacchatta, 2007). The objective of promoting export supplies was to make SSA countries more competitive in foreign trade. The policy and institutional framework in this period can be described as New Trade and Industrial Strategy (Bhowon, Boodhoo and

Chellapermal, 2004). This was based on the re-engineering of the existing trade and industrial policies, to develop new strategies that will enable SSA countries meet the challenges in the New World Economic Order and also benefit from international trade.

As observed from the discussion of institutions that relate to foreign trade, institutions that promoted foreign trade in SSA countries do exist. However, their ineffectiveness has been one of the factors accounting for the low foreign trade performance in SSA countries judging from some indicators. The respective periods mentioned had some peculiar features but in terms of policy changes, they were not too different from one another given the fact that they were interrelated. It will be worthwhile to note that adequate coordination of policy institutional instruments is essential in realizing any policy objectives. For instance, the Brazilian industrialization process was based on a network that involved the government, private and foreign actors. The first target was development of infrastructures and heavy industries, the second was manufacturing of consumer goods and the third was production of durable goods like automobiles, which witnessed the establishment of Volkswagen, Ford, GM and Mercedes in Brazil. This aspect of strong co-ordination is one of the missing gaps in most SSA.

3.2.2 The Concept of Institutions and New Institutional Economics (NIE)

Institutions have been seen to play key roles in the management of economies in recent years. They are crafted by man to create a peaceful habitation and reduce uncertainty in the exchange of values. This is due to the fact that it is becoming increasingly clear that those involved in economic transactions are not only influenced by economic variables (especially price) but also by a host of other factors that can be classified as institutions (Natal, 2001). North (1991) defined institutions as the humanly formulated constraints that structure political,

economic and social interactions, which consist of both informal constraints (such as sanctions, taboos, customs, traditions and codes of conduct) and formal rules (like constitutions, laws and property rights).

In the 1960s and 1970s, economic history was characterized mostly by economic theorists who generally opined that the policy-making processes were done rationally by planners and managers of economies; and that economic policy instruments in countries were chosen in an optimal fashion with a view to maximizing the welfare of their citizenry (Soludo and Ogbu, 2004). Hence, the workings of an economy were assumed to be shaped by policy-makers who accomplish their vision of social welfare. The policy-makers were presumed to choose policies that would be in the interest of the public.

In order to enjoy the benefits of economic growth, trade policies and institutions that are required for efficient functioning of the trading system need to be put in place to have meaningful results. This has been noted in political economy as well as public choice theoretical frameworks (Becker, 1985). The public choice framework provides a way of incorporating utility maximization concepts of traditional economics into policy-making process. It is based on the maxims that policy-makers tend to maximize their utility through the selection of policy mix that increase the possibility of continuing in the office, the public choice theory is similar to political theory of institutional development as enunciated by LaPorta *et al.* (1999). Therefore, the way and manner trade policies will be formulated and implemented will depend on the structure of a country in terms of institutions that are operational, which will eventually have effects on the country's foreign trade.

Institutions create the choice pattern that affects not only transactions and production costs but also the likelihood of engaging in economic activities (Ike, 1977; 1984; Williamson, 2000; Rodrik, 2008). Institutions can reduce or increase transaction costs because they determine the nature of exchange. They form a link for connecting the past with the present and the future- a kind of path dependency.

Institutions provide the incentive structure of any economy because they create the structure that shapes the direction of economic change towards growth, stagnation, or decline. Thus, both political and economic institutions are essential parts of an effective institutional framework (Matthews, 1986; North, 1991).

According to North (1991), history is largely a story of institutional evolution in which the historical performance of an economy can be understood as part of a sequential story. The major focus of the literature on institutions and transaction costs has been on institutions as efficient solutions to problems of organization in a competitive framework (Matthews, 1986; North, 1991; Williamson, 2000). Natal (2001) conceptualized NIE as a new development in economic ideas based on institutional economics and many of the principles of Neo-classical economics. On the other hand, Greif (1998), using the term 'Historical Comparative Institutional Analysis' (HCIA) captured institutions as non-technologically determined constraint that can influence social interactions and provide incentives that will maintain regularity in human behaviour. Though the HCIA relied considerably on past events in explaining human relations, it is closely related to NIE in terms of acknowledgement of both formal and informal institutions.

In addition, the formal institutions which generally entail rules and regulations that control the existence of a system can be categorized into two. These are economic and political institutions. Economic institutions are essential for economic growth in a country due to their influence in shaping incentives for various economic actors in a society (Acemoglu and Robinson, 2008). Economic institutions not only determine the level of economic growth potential of a country, they also determine how resources are efficiently distributed in the country (IMF, 2005). On the other hand, political institutions deal with the way the political structure in a country influences the behaviour of agents in the society especially with the distribution of political power (de jure and de facto). Examples of political institutions include the form of governance in a country

(democracy or dictatorship), rule of law and the extent of constraint of political power (Olomola, 2007; Acemoglu and Robinson, 2008; Hassan, Wachtel and Zhou, 2009; Acemoglu, 2010).

The NIE framework maintains that economic activities (transactions) among individuals are influenced by a range of social and legal ties amongst them. The economics of institutions deals with economic institutions while NIE embraces other areas outside economics such as political science, sociology, et cetera and their interplay in influencing economic outcomes. Matthews (1986) noted that institutions have become one of the liveliest areas in economics as it has brought the discipline more closely in touch with other disciplines in social sciences. It can be inferred that institutions are essential and their influence can be subjected to economic analysis. This is because institutions involve sets of formal and informal rules on how economic agents behave. The bottom-line of economic agents' behaviour in this regard is to make Pareto-efficient choices in the midst of alternatives (LaPorta *et al.,* 1999). Thus, NIE would become popular as the roles institutions play in economic life is understood and appreciated better.

When not properly handled, there would be contractual incompleteness with added problems of opportunism in form of adverse selection, moral hazard, shirking and sub-goal pursuits among others. This is because actors involved in economic activities may not reliably disclose true conditions upon request or fulfil all forms of contracts when not supported by credible commitments. In other words, contracts are not self-enforcing and humans may not act in the best interest of others. Little wonder why witnesses that appears in the law courts are made to swear an oath to tell the whole truth and nothing but the truth (Williamson, 2000). This may also be one of the reasons why guarantors and witnesses are usually needed when serious contractual arrangements like employment, lending and hire purchase are to be made. Thus, some form of institutional arrangement is needed to make humans adhere to commitments. In this wise, parties to contract who look

ahead and observe potential flaws would certainly seek to work out contractual adjustments, which will make them enjoy some advantages over those who are myopic on the terms or leave their fate to chance.

Other possible sources of contractual hazards include bilateral dependence, weak property rights especially intellectual property rights (IPRs), failure of probity among others. These have propensities to compromise contractual integrity and cause some (form of) distortions (Coase, 1992). For example, the relevance of contract enforcement and credible contracting have been valid for commercial contracting in Vietnam (McMillan and Woodruff, 1999) and contract farming in Kenya (Grosh, 1994). It has also been noted that institutional factors, especially civil liberties' index and revolutions have strong influence on a state's fragility, after accounting for economic, demographic and geographic factors (Baliamoune-Lutz, 2009; Bertocchi and Guerzoni, 2010). Thus, without appropriate institutions no market economy of any significance is possible (Coase, 1992).

3.3 The Concept of Strong and Weak Institutions

It may not be very easy to term an institution weak because the fact that an institution is not performing to expectation today may be due to some impediments that, which when corrected would make the institution to perform well. The emphasis here would be on the role a strong institution plays on the economy. A strong institution is one that is good for economic growth and development. According to Shirley (2003), there are two sets of institutions countries need to meet to solve the challenges of development: first, those that foster exchange by lowering transaction costs and encouraging trust (contracts and contract enforcement mechanisms, commercial norms and rules, and habits and beliefs favouring shared values); second, those that influence the state to protect private property rather than expropriate it (constitutions, electoral rules,

laws governing speech and legal and civic norms). According to Acemoglu *et al.* (2004), a strong institution is one that provides secure property rights for broad cross-section of the society with some degree of equality of opportunity so that those with good investment opportunities can take advantage of them.

There are four main approaches to the question of why countries have institutions that they are having now and why institutions differ across countries. According to 'Efficient Institutions' view, societies will choose institutions that are socially efficient, weighing social costs against benefits to determine which institutions should prevail. A second view is that institutions differ across countries because of belief and ideological differences, between societies or their leaders, on socially beneficial institutions. According to 'Social Conflict' view, institutions are social decisions chosen for their consequences. Because different groups and individuals benefit from different institutions, there is generally a conflict over these social choices, ultimately resolved in favour of groups with greater political power. These groups will choose the institutions that maximize their own rents. Finally, the 'Incidental Institutions' view takes institutions as the unintended consequence of other social interactions or historical accidents. And these institutions persist for a long time (Acemoglu *et al.,* 2004).

3.4 Determinants of the Quality of Institutions

Institutions do not really work if they are not capable of shaping behaviours. In order to evaluate them, it is important to analyze not only the rules that institutions define, but also the individuals' motivations to fulfil them. Institutions respond to problems that social interaction raises in an uncertain world. In this regard, institutions constitute a mechanism to reduce discretional behaviours and to limit opportunism. In addition, since they shape social behaviours, institutions foster social interaction and collective action, reducing coordination costs. Yet, it

would be mistaken to suppose that institutions always endure a rational response to social transaction costs. They are also a mechanism through which social actors express their strategies. Hence, a society does not have necessarily all institutions it needs nor are the existing ones necessarily optimal (Siba, 2008).

Thus, institutions have two basic economic functions: firstly, the reduction of transaction costs, granting certainty and predictability to social interaction; and secondly, easing economic agents' coordination. If these functions are kept in mind, institutional quality must be defined by four basic criteria, these are:

(i)   Static Efficiency: the institution's capacity to be incentive-compatible. In other words, it is the capacity to promote behaviours that reduce social costs (Siba, 2008).

(ii)   Credibility (or legitimacy): the institution's capacity to define inter-temporary credible contracts. That is, it is the institution's ability to generate a normative framework that truly determines agents' conduct (Siba, 2008).

(iii)   Security (or predictability): an institution fulfils its function if it reduces the uncertainty associated with human interaction. In fact, one of the institutional functions is to grant a higher level of safety and stability to social relations by diminishing transaction costs (Siba, 2008).

(iv)   Adaptability (or dynamic efficiency): This is the institutional ability to be able to anticipate social changes or at least to generate the incentives that facilitate agents' adjustment to these changes (Siba, 2008).

The determinants of institutional quality must possess one or two of these criteria in order to be adjudged a yardstick for measuring the quality of institutions. Therefore, the determinants of the quality of institutions are:

(a) International openness is a factor that can encourage institutional quality. It is related to the dynamic efficiency of institutions in three ways; firstly, it creates a more dynamic, sophisticated and demanding environment, which fuels a larger demand for good institutions. Secondly, international openness encourages a more competitive environment; therefore it can hinder rent-seeking activities, corruption and nepotism; and thirdly openness can facilitate learning processes and good practices imitation from other countries experience (Heid and Larch, 2012).

(b) Another determinant of institutional quality is education. It is a variable related to institutions dynamic efficiency. A more educated population demands more transparent and dynamic institutions and permits to build them (Heid and Larch, 2012).

(c) Income distribution is a third determinant of institutional quality. It affects both institutional predictability and legitimacy in three ways; firstly, because a strong income inequality causes divergent interests among different social groups, which, in turn, leads to conflicts, socio-political instability and insecurity. Secondly, income inequality facilitates that institutions remain captured by groups of power, whose actions are orientated to particular interests rather than to the common good. Thirdly, it diminishes social agents' disposition to cooperative action and favours corruption and rent-seeking activities (Heid and Larch, 2012).

(d) Development level is the fourth determinant of the quality of institutions. This operates on institutional quality through both supply and demand in two ways; first, it determines the availability of resources to build good institutions. Second, it generates a larger demand for quality institutions. It is a determinant related to the static efficiency of institutions (Heid and Larch, 2012).

(e) Finally, taxes are another determinant of institutional quality. It affects both the static efficiency and the legitimacy of institutions. A sound tax

system not only provides the necessary resources to build high quality institutions, but also enables the consolidation of a social contract that gives rise to a more demanding relationship between state and citizens. As a result, there will be higher transparency and accountability, which leads to better institutional quality (Tilly, 1992; Moore, 2002).

Aside the above determinants of institutional quality, there are other determinants of institutional quality which includes:

(f) A determinant of institutional quality traditionally considered in the literature related to countries' "historical" features is ethno-linguistic fragmentation which has a negative influence on institutional quality. Greater heterogeneity may fuel tensions and conflicts between different groups, reduce social cooperation and generate a mismatch between formal and informal institutions. Easterly and Levine (1997); Alesina *et al.* (2003); Fosu *et al.* (2006) found evidence supporting this hypothesis.

(g) A country's legal system origin is another factor that has been identified as a potential determinant of institutional quality. It is argued that the British origin system and to a lesser extent German or Scandinavian systems, is based on a greater recognition of economic freedom, which limits the state intervention in the economy. On the contrary, the French origin legal system and even more the Soviet system were designed to determine the state's ability to organize economic and social life, leading to a weaker recognition of property rights and individual freedom. Accordingly, British and Nordic legal traditions are expected to be associated with higher institutional quality. LaPorta *et al.* (1999), Greif (2006), Chong and Zanforlinm (2000), Easterly and Levine (1997) find empirical support for this hypothesis. In the latter case, however, they do not control for development level.

(h) Institutional quality can also be influenced by geographical conditions. It is considered that a country's location in the tropics, lack of access to the

sea or soil fertility may have influenced the development of strong quality institutions. This argument is supported by Gallup *et al.* (1998); Easterly and Levine (1997). Valuable natural resources can also affect institutional quality. They can negatively affect institutions by fostering rent seeking activities and replacing tax revenues by other revenue sources less transparent and less subject to accountability. Sachs and Warner (1997); Easterly and Levine (1997) confirmed this relationship.

3.5 Some Stylized Facts on SSA Countries

Besides the World Trade Organization (WTO) that helps to facilitate international trade around the world, some trade groupings also known as Regional Economic Communities (RECs) exist in SSA that have been established to promote international trade both within the sub-regions and other regions. The membership is usually distributed across the geographical sub regions, namely: Central, East, Southern and West Africa. However, a few of them cut across with members from more than one geographical sub-region (for example, Angola, Burundi, Democratic Republic of Congo and Rwanda). The RECs in SSA grouped by geographical sub-regions include:

Central Africa: Economic and Monetary Community of Central Africa (CEMAC) established in 1994 with six members, viz: Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea and Gabon. Economic Community of the Great Lakes Countries (ECGLC) established in 1976 with three members, viz: Burundi, Democratic Republic of Congo and Rwanda. Economic Community of Central African States (ECCAS) founded in 1983 with eleven members viz: Angola, Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo, Equatorial Guinea, Gabon, Rwanda and Sao Tome and Principe.

West Africa: Economic Community of West African States (ECOWAS) established in 1975 with fifteen members, viz: Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo. But Mauritania has ceased to be a member of the organization. Another is West African Economic and Monetary Union (UEMOA) which was founded in 1994 with eight members (all French-speaking countries) that include Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo (UNCTAD, 2006, 2008a; WTO, 2008, 2009).

East and Southern Africa: Common Market for Eastern and Southern Africa (COMESA) which was founded in 1994 with nineteen members. The members include Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe. Southern African Development Community (SADC) which was established in 1992 with fourteen members, viz: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. Southern African Currency Union (SACU) which is one of the oldest custom unions in the world was established in 1910 (Moremi, 2010). The following member countries, viz: Botswana, Lesotho, Namibia, South Africa and Swaziland.

The establishments of these regional economic communities in the various regions of SSA have helped to strengthen trading activities and international relations among the member countries. Some of them, for instance, ECOWAS is even planning to have a common currency that will be used in all member countries just like the 'Euro' used among the European Union (EU) member countries. This will help unify and strengthen the economies of these countries. In

terms of institutions, although these countries still have weak institutions but efforts are being made to improve the quality of institutions in these countries.

3.6 Measures of Institutional Performance

Tables 3.1 and 3.2 present some institutional indicators. These were sourced from the World Governance Indicators (WGI, 2009) as computed by Kaufmann *et al.,* (2009). They include: Control of Corruption (CC), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL), Political Stability (PS), Voice and Accountability (VA). Tables 3.1 and 3.2, show the values of the institutional measures as given by WGI. In Table 3.1, the values of Control of Corruption (CC) and Rule of law (RL) were presented. The values of CC and RL are quite low and far lower than the world average and those of other regions presented. The values of CC are between -0.58 and -0.67 while those of RL are between -0.70 and -0.76. In Table 3.2, the values of Government Effectiveness (GE), Regulatory Quality (RQ) and Political Stability (PS) which depict the quality of government action as a measure of institutions.

The values of Government Effectiveness (GE) ranged from -0.66 and -0.79 which is lower than those of other regions in the Table as well as the world average. A similar picture is observed for RQ where its values remained below global average within the same period, 1996-2008. Still in Table 3.2, another measure of institutions, political stability (PS) is presented. Like the others, the values are still low and quite lower than those of other regions as well as the global average. The above discourse points out that the quality of institutions in SSA is low. When this is compared alongside trade liberalization, then we can presume that the low trade performance is possibly related to the weak institutions in SSA. This, among others, triggered the research interest.

Table 3.1: Measures of Institutions (Respect for Institutions) (1996-2008)

Region/Year	1996	1998	2000	2002	2003	2004	2005	2006	2007	2008
Control of Corruption (CC)										
SSA	-0.63	-0.63	-0.58	-0.59	-0.62	-0.67	-0.68	-0.64	-0.63	-0.62
World	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
EAP	-0.43	-0.52	-0.60	-0.59	-0.62	-0.50	-0.53	-0.57	-0.59	-0.57
ECA	-0.70	-0.61	-0.62	-0.66	-0.60	-0.62	-0.52	-0.49	-0.53	-0.48
LAC	-0.35	-0.20	-0.18	-0.23	-0.20	-0.19	-0.16	-0.15	-0.16	-0.12
MNA	-0.46	-0.53	-0.57	-0.48	-0.46	-0.49	-0.55	-0.60	-0.54	-0.62
Rule of Law (RL)										
SSA	-0.76	-0.73	-0.72	-0.70	-0.73	-0.76	-0.76	-0.73	-0.74	-0.74
World	-0.09	-0.06	-0.06	-0.07	-0.05	-0.03	-0.04	-0.04	-0.03	-0.03
EAP	-0.41	-0.43	-0.43	-0.46	-0.32	-0.32	-0.16	-0.18	-0.21	-0.25
ECA	-0.44	-0.61	-0.66	-0.64	-0.65	-0.58	-0.58	-0.60	-0.53	-0.45
LAC	-0.30	-0.32	-0.27	-0.34	-0.30	-0.31	-0.34	-0.32	-0.33	-0.36
MNA	-0.58	-0.47	-0.45	-0.50	-0.50	-0.44	-0.52	-0.55	-0.56	-0.54

Source: World Bank Group (2010) World Trade Indicators 2009/10 based on Kaufmann *et al* (2009). **Note:** The value ranges from -2.5 (worst) to 2.5 (best) that is, the higher the better. EAP-East Asia and the Pacific; ECA- Europe and Central Asia; MNA- Middle East and North Africa; LAC- Latin America and Caribbean; SSA- Sub-Saharan Africa. The values for each region, including the world, are the averages for the respective region. This means the value of a representative country in for the respective region.

Table 3.2: Measures of Institutions (Government Actions) (1996-2008)

Region/Year	1996	1998	2000	2002	2003	2004	2005	2006	2007	2008
Government Effectiveness (GE)										
SSA	-0.66	-0.69	-0.72	-0.71	-0.71	-0.75	-0.78	-0.79	-0.76	-0.78
World	-0.04	-0.01	-0.01	-0.02	-0.01	-0.00	-0.01	-0.01	-0.02	-0.01
EAP	-0.30	-0.49	-0.48	-0.47	-0.55	-0.53	-0.46	-0.46	-0.54	-0.53
ECA	-0.58	-0.49	-0.51	-0.48	-0.39	-0.37	-0.37	-0.34	-0.36	-0.31
LAC	-0.34	-0.11	-0.15	-0.25	-0.21	-0.20	-0.14	-0.13	-0.12	-0.10
MNA	-0.45	-0.68	-0.63	-0.58	-0.55	-0.53	-0.63	-0.63	-0.64	-0.61
Regulatory Quality (RQ)										
SSA	-0.65	-0.66	-0.64	-0.66	-0.69	-0.72	-0.75	-0.72	-0.73	-0.70
World	-0.05	-0.03	-0.03	-0.04	-0.04	-0.02	-0.02	-0.02	-0.01	-0.01
EAP	-0.35	-0.59	-0.61	-0.73	-0.77	-0.62	-0.56	-0.61	-0.63	-0.69
ECA	-0.59	-0.52	-0.49	-0.41	-0.38	-0.30	-0.32	-0.31	-0.20	-0.10
LAC	0.22	0.18	0.07	-0.06	-0.07	-0.12	-0.07	-0.06	-0.09	-0.12
MNA	-0.64	-0.85	-0.78	-0.78	-0.68	-0.66	-0.73	-0.72	-0.68	-0.63
Political Stability (PS)										
SSA	-0.56	-0.65	-0.70	-0.65	-0.60	-0.54	-0.56	-0.54	-0.57	-0.56
World	-0.11	-0.09	-0.09	-0.09	-0.04	-0.03	-0.03	-0.03	-0.03	-0.02
EAP	-0.04	-0.02	-0.17	-0.09	0.07	0.13	0.20	0.14	0.14	0.10
ECA	-0.36	-0.48	-0.52	-0.41	-0.42	-0.53	-0.44	-0.36	-0.24	-0.13
LAC	-0.14	-0.15	-0.05	-0.18	-0.07	-0.03	-0.10	-0.10	-0.10	-0.13
MNA	-0.90	-0.90	-0.74	-0.83	-0.89	-0.94	-0.94	-0.97	-0.94	-0.91

Note and Source: Same as in Table 3.1.

In the previous section, the study assessed the position of the SSA region within the global context in terms of the World Governance Indicators (WGI) measures of institutions; by way of extension, the study gives some background on the selected SSA countries with a view to examining if the countries with relatively better institutions will perform better in trade and economic growth. To achieve this, some other institutional indicators besides those of WGI mentioned above were chosen from the Africa Development Indicators. The study used 'Starting Business, 'Enforcing Contracts and 'Investor Protection Index' as reported in ADI under 'Ease of Doing Business' measure of institutional environment. The

Starting Business indicator explains the bureaucratic and legal hurdles that an entrepreneur has to overcome in order to establish and register a new firm. It is ranked from 1 to 183 and lower ranks show less favourable institutional environment (World Bank Group, 2010). As observed in Table 3.3 below, the starting business indicator revealed that in the Central African sub-region, four out of the eight countries had values lower than the average in the whole SSA; in the East and Southern African sub-region, twelve out of the fourteen countries had values lower than the overall average while in the West African sub-region, three out of the eight countries had values lower than the overall average. In all, nineteen out of the total thirty selected SSA countries had values lower than the overall average, which is over 50 percent. This implies that these countries still have weak institutions.

The Enforcing Contract indicator measures the efficiency of a country's contract enforcement processes. It takes into account the evolution of a sale of goods dispute and tracking the time, cost and number of procedures involved from the time a complainant files a lawsuit until it is concluded. It also has a rank from 1 to 183 with a lower value representing poor contract enforcement process and weak institutions, and *vice versa* (Osabuohien, 2011). From Table 3.3, the enforcing contract indicator revealed that in the Central African sub-region, three out of the eight countries had values lower than the average in the whole SSA; in the East and Southern African sub-region, ten out of the fourteen countries had values lower than the overall average while in the West African sub-region, four out of the eight countries had values lower than the overall average. In all, seventeen out of the total thirty selected SSA countries had values lower than the overall average. This implies that the contract enforcement processes in most of these countries have to be reviewed, in doing this; the quality of institutions will improve.

The Investor Protection Index measures the extent at which investors' interest is protected, that is, how safe it is to transact business in a country. It has a rank from 0 to 10 with zero representing least protection and ten representing most protected. The data in Table 3.3 revealed that in the Central African sub-region, none of the eight countries had values lower than the average in the whole SSA; in the East and Southern African sub-region, two out of the fourteen countries had values lower than the overall average while in the West African sub-region, one out of the eight countries had values lower than the overall average. In all, three out of the total thirty selected SSA countries had values lower than the overall average. But in real life, the African continent generally is viewed in the international community as being unsafe for foreign investors because of the kidnappings, civil unrests, insecurity and other social vices predominant in most of these countries, for example, in Nigeria the criminal rate is on the increase daily, infact the Northern part of the country had been tagged a 'no-go' area to foreigners by some Western countries. Generally, based on the analysis above, Central African sub-region fared better than the other two sub-regions based on the institutional measures highlighted.

Table 3.3: Economic and Political Institutions Performance Indicators

Country	Starting Business (Rank)	Enforcing Contract (Rank)	Investor Protection Index
	Central Africa		
Angola	128.94	167	5
Burundi	129.7	164	6
Cameroon	170	173	5
Chad	110.6	156.33	3
Congo	97.43	100.35	3
Equatorial Guinea	110.5	112.43	3
Gabon	145.7	148	3
Rwanda	48.67	44.67	7
SSA Average	126.5	118	3

East and Southern Africa			
Botswana	89.33	88	8
Djibouti	117.4	116.23	4
Ethiopia	108	67	2
Kenya	116.3	114	4
Lesotho	129	104.7	3
Madagascar	45.67	153.7	4
Malawi	121.3	139.7	3
Mozambique	123	133	5
South Africa	56.33	83.33	7
Sudan	117.23	114	2
Swaziland	153	129.3	5
Tanzania	109.3	32	3
Uganda	125.3	117.3	3
Zambia	83.33	86.67	4
SSA Average	126.5	118	3

West Africa			
Benin	149.3	176	4
Cape Verde	152.7	39.67	5
Cote d'Ivoire	167	125.7	4
Gambia	105.3	64	7
Ghana	138	49	7
Niger	158	135.3	2
Nigeria	96.33	91.67	6
Senegal	119	149	5
SSA Average	126.5	118	3

Source: World Bank (Africa Development Indicators), 2011. Note: SSA average represents the average for all sub-Saharan African region not the average of the countries presented. Investor Protection Index – 0 (least protection), 10 (most protection).

Table 3.4: Cultural Institution Performance Indicator

Country	Ethnic Tension
Central Africa	
Angola	4
Burundi	2
Cameroon	3
Chad	3
Congo	4
Equatorial Guinea	2
Gabon	5
Rwanda	5
SSA Average	4
East and Southern Africa	
Botswana	4
Djibouti	3
Ethiopia	3
Kenya	5
Lesotho	5
Madagascar	5
Malawi	4
Mozambique	4
South Africa	3
Sudan	4
Swaziland	3
Tanzania	3
Uganda	4
Zambia	4
SSA Average	4

<center>West Africa</center>

Benin	4
Cape Verde	3
Cote d'Ivoire	3
Gambia	5
Ghana	5
Niger	3
Nigeria	2
Senegal	4
SSA Average	4

Source: International Country Risk Guide (ICRG) 2011. Note: SSA average represents the average for all sub-Saharan African region not the average of the countries presented. Ethnic Tension Index – 0 (high ethnic tension), 6 (low ethnic tension).

The Ethnic Tension Index measures the extent of relative peace in a country. It has a scale of 0 to 6 with zero representing high ethnic tension and six representing low ethnic tension. The data in Table 3.4 revealed that in the Central African sub-region, four out of the eight countries had values lower than the average in the whole SSA; in the East and Southern African sub-region, five out of the fourteen countries had values lower than the overall average while in the West African sub-region, four out of the eight countries had values lower than the overall average. In all, fourteen out of the total thirty selected SSA countries had values lower than the overall average. It is evident from the civil and ethnic unrests in Africa, e.g. Mali, Nigeria, Egypt, Sudan that trading activities are hindered because both local and foreign investors will be afraid to invest in chaotic situations.

3.7 Trade Policy and Economic Performance in SSA

In SSA and other developing regions of the world, trade plays a quantitatively important role, that is, a larger share of their income is spent on imports and a large share of their output is exported, than is the case for developed countries with similar economic size. Infact, it is logical to say that the larger a country's Gross Domestic Product (GDP), the smaller the trade ratios. Most African countries have high ratios of external trade to GDP, which makes trade policy vital to the functioning and prospects of their economies. For instance, in Nigeria the percentage contribution of foreign trade to GDP rose from 35 percent in 1960 to over 60 percent in the 1980s and over 75 percent in 2011. Other African countries depict similar characteristics – for example in 2008, the trade to GDP ratio for Botswana was 88 percent and that of Uganda was 66 percent. The comparative ratios for the developed countries were 28 percent for United Kingdom, 11 percent for the United States of America and 9 percent for Japan (World Development Indicators, 1996, 2011).

Prior to political independence, trade policies of most Sub-Saharan African (SSA) countries were formulated as an integral part of colonial trade policies. They were aimed at promoting and regulating trade to serve the advanced country. These policies forged strong trade ties between the colonies and the western countries, effectively monopolizing the colonies' external trade. Special licenses had to be issued to obtain goods from outside the realm of the colonizers and usually these could only be obtained where the goods in question were not available in the metropolitan country. One would say that SSA countries received their lessons in trade policy and practices from the western country, which in many countries have persisted over time. Trade policy in many SSA countries has been mainly dominated by stringent restrictions. These countries' protectionist trade policies were initially influenced by the perceived need to stimulate and cocoon local industries under the banner of import substitution and infant industry protection.

In many of these countries, tariffs and quantitative restrictions have contributed the most important form of trade restriction. A large proportion of imports into sub-Saharan Africa (SSA) were either subjected to outright prohibition or high tariffs or some sort of import ban or licensing mechanism. Usually an industry can be protected from imports by the use of any one of these measures – for example applying a quantitative restriction or a tariff. Trade barriers in Africa were, however, excessive in that countries applied quantitative restrictions, tariffs, licensing, import bans and foreign exchange regulations to control the flow of imports and exports. Protectionist policies were actually instituted to totally block imports into the countries, except those deemed as priorities by the government and obtainable through elaborate licensing arrangements (Mwaba, 2000).

In many SSA countries, exports were subjected to similar measures, with rules making it illegal to export "strategic" items or subjecting exports to high taxes. Special marketing agencies and boards were instituted to ensure compliance. In some countries, farmers or traders needed to obtain special permits to export surplus agricultural or "controlled" products. The most cited example of the adverse effects of high protection is exemplified by the tale of two neighbours, Ghana and Cote d'Ivoire. In Ghana, import prohibitions in the 1980s and 1990s encouraged inefficient high cost production in manufacturing industries; controls and taxes on the main export crop cocoa, discouraged its production and other crops were adversely affected by the unfavorable exchange rate. Cote d'Ivoire on the other hand pursued an open policy with minimum quantitative restrictions that encouraged the development of both primary and manufactured goods. As a result, it increased its share in world cocoa exports, developed new primary exports and expanded manufacturing industries. Differences in policies applied may largely explain that between 1980 and 1998, per capita incomes fell from $430 to $390 in Ghana, as compared to an increase from $540 to $840 in Cote d'Ivoire (Meier, 1996). This occurred, inspite of the two countries having similar

resource endowments, and at the time of independence, Ghana having the advantage of a higher educational level.

Table 3.5 indicates average tariffs on selected items in a number of African countries in 2006-2011. The Table reveals that tariffs on agricultural materials for all Sub-Saharan Africa averaged 23 percent. Corresponding rates for crude fertilizers averaged 17 percent. The average rates for all categories of goods, including final goods, were 26.7 percent for SSA. This shows that most of these countries are importing countries. What have been the experiences of the African countries, especially the lower income SSA countries in terms of export growth, in the light of the restrictive trade policies? Many countries have witnessed cyclical declines and marginalization in export performance over the past three decades. Yeats (2010) opined that Africa's trade has grown at relatively low rates since the 1970s, with the result that today, the region's share in world trade stands at around 1 percent, down from more than 3 percent in the mid-eighties. Indeed, SSA countries as a group have not fared well in trade, as seen from their exports, which have either stagnated or declined even in nominal terms. For example, between 1995 and 2004, African exports grew by an annual rate of 6.9 percent; this dropped to 2.9 percent during the period 2005-2009 (World Bank, 2009). Exports increased slightly after 1994 but the expansion slowed again in 2007.

Table 3.5: Average Percentage Tariffs in selected Sub-Saharan African (SSA) Countries 2006-2011

Country	Agricultural Materials	Crude Fertilizers	Chemicals	Electric Machines	Transport Equipment	Professional Equipment	All Items
							11.6
Angola	8.2	9.4	9.2	17.4	6.2	8.6	29.8
Botswana	29.6	22.5	22.2	27.5	13.7	9	29.9
Burundi	9.3	18	20.7	25.4	17.4	8.3	23.1
Madagascar	4.8	12	13.1	16.8	14.1	6	15.2
Malawi	3.9	0.7	9.7	23.8	7.8	5.7	10.9
Mali	6.5	9.8	11	14.9	11.5	8	12.9
Mauritania	4.7	9.5	12.2	8.9	12.1	6.7	15.6
Mozambique	16.2	11.9	10.3	11.5	16.2	4.7	15
Cameroon	13.8	12.9	11.6	12	13.1	2.4	22
Congo	12	0.8	7.9	10.3	11	3.5	15.6
Chad	8	2	15	11.8	7.9	1.9	16.9
Cape Verde	13.4	0.9	21.2	10	8.2	4	17.5
Equatorial Guinea	11.9	2	20.9	13.1	10.6	5.3	16.8
Niger	10.7	3.1	16.4	11.5	9.8	4.9	20
Benin	13.7	0.5	9.3	10.1	8	6.3	16.9
Rwanda	22.1	2.1	12.5	13	11.1	8	12.3
Senegal	39.9	17.5	7.7	14.6	14.7	6.7	29.9
South Africa	25.1	11.8	20.3	25.4	17.4	5	24
Swaziland	20.8	0.7	9.6	11	12.9	6.8	23
Sudan	22.4	1.7	5.8	13.4	12.9	4.8	19.8
Djibouti	18.6	2.9	7.6	11.2	8.4	4.9	21.9
Gabon	25	9.5	9.4	11.8	6.8	12	8.9
Ghana	10	8.7	10	7	7	6	11.7
Gambia	12.3	0.2	3.7	8.4	6.9	6.2	10.1
Togo	1.4	0.6	5.3	15.4	7.8	5.2	15.6
Namibia	12.6	16.9	22.2	12	4.8	4.7	32.8
Nigeria	25	12	9.3	31.4	22.7	21.2	24.4
Kenya	20.1	11.3	9.6	10.4	4.9	11	20.7
Lesotho	13	10	12.3	13.9	10.5	8.4	15.6
Uganda	26.1	11.2	13.1	17.8	14.3	10	17.4
All SSA	23.6	17	19.8	28.5	18.9	26.5	26.7

Source: World Bank (Africa Development Indicators), 2011. The figures for SSA comprise the average of all SSA countries and not that of the countries presented.

The dull performance in trade is closely reflected in the developments in Gross Domestic Product (GDP) growth. Africa's Gross Domestic Product (GDP) growth averaged 2.6 percent over the period 1980-2009. Growth in the fastest growing developing countries outside Africa averaged 5.8 percent, while that for the rest of the developing world was 3.2 percent (Sachs and Warner, 2009). Furthermore, in the early 1970s, the Gross Domestic Product (GDP) per capita in SSA was 60 percent of the average of the rest of the developing world; by 1990, this had fallen to 35 percent and further fell to 28 percent by 2009. Much of the decline occurred during the period 1980-94, due to the introduction of reforms in some of the countries during this period. The region recorded some modest gains after 1995 as reforms in a number of countries began to take hold. In summary, we see in Africa, a continent where protectionist measures were instituted and sustained over time, in an effort to expand local industry that may lead to increasing manufactured exports. This has ironically not been the case as the continent continued to be marginalized in trade and Gross Domestic Product (GDP) growth.

3.8 Aid for Trade in SSA

Aid for Trade is part of the official development assistance to developing countries. Aid for Trade is needed because many of the poorest countries have struggled to benefit from market access opportunities due to their inability to produce or export efficiently. While trading with other countries is fundamental to achieve high economic growth rates and poverty reduction targets, most African developing countries and the totality of African LDCs have neither the diversity of exportable products nor the production capacity to take immediate advantage from improved market access opportunities. Thus, while it is argued that trade barriers are of concern to trade, poor supply-side conditions have often been a more important constraint on the export performance in various regions of Africa. Many African countries desperately need resources to upgrade ports,

telecommunications, customs facilities and institutions. If they cannot send goods in a competitive way to the world market, then the countries stand to gain little from any improved market access.

From the inception of the 2005 Hong Kong WTO Ministerial Declaration, Aid for Trade has assumed growing importance and a strong commitment to Aid for Trade has emerged from all sides: donor countries, recipient countries, multilateral agencies, civil society and private sector. The Hong Kong Ministerial Declaration provided the mandate for further developments of the Aid for Trade agenda. This was done so that in the long run, important gains in economic growth can be achieved, especially in Africa, through trade liberalization. Trade liberalization creates opportunities for development, but other factors determine the extent to which those opportunities are realized. To enable developing countries to reap full benefits from liberalization, public investment in infrastructure and institutions, as well as private and public investment in productive capacity, are necessary co-requirements to liberalization that developing countries alone are unable to deliver. Therefore, the core purpose of Aid for Trade is to help developing countries to: (i) increase their trade of goods and services; (ii) integrate into the multilateral trading system; and (iii) benefit from liberalized trade and increased market access.

Substantially, Aid for Trade is about investing in developing countries and it is fundamental for African countries that the initiative reaches its full potential and that flows meet the needs of beneficiary countries. Monitoring in order to track progress in the implementation and impact remains a relevant issue. As Aid for Trade is part and parcel of the official development assistance (ODA) to developing countries, sustained increase in the total ODA increases the scope for trade related assistance. In the case of Africa, the increase in Aid for Trade commitments was more impressive than the total ODA commitments to the region. The growth rate of Aid for Trade commitments to Africa was almost twice

as fast as the growth in the total ODA commitments to the region with an average annual growth rate of 21.4 percent and 11.1 percent per year in real terms during 2006-11 respectively. Africa is now the largest recipient of Aid for Trade, overtaking Asia in 2009 with an increasing trend in the global share. As revealed in Table 3.6, the total Aid for Trade grew to an annual average rate of 17.1 percent in real terms in 2011. The region with the lowest figure as revealed in Table 3.6 is Oceania. Proper monitoring has to be carried out to ensure that this is not a worrying trend, and this might mean tracking individual projects from commitment to final disbursement stage. The proportion of Aid for Trade flows in the total ODA to Africa was also rising, up from the baseline period (2002-05 avg.) annual average of 34.1 percent to 38.7 percent in 2011. This clearly indicates that the Aid for Trade commitments to Africa increases at much faster rate than the total ODA flows to the region.

Table 3.6: Aid for Trade to Regions (Billions US$ 2009 Constant rate)

	2002-05 avg.	2006	2007	2008	2009	2010	2011
Africa	7.6	9.1	11.3	13.8	16.5	16.8	17.1
America	1.7	2.0	2.3	1.9	3.1	3.3	3.7
Asia	12.8	12.2	13.3	18.8	15.4	15.6	15.8
Europe	1.6	1.7	1.4	2.2	1.4	1.6	1.9
Oceania	0.2	0.4	0.3	0.4	0.3	0.3	0.5
Cross border activities	1.2	1.8	2.1	2.3	3.5	3.7	3.9
Africa's Global Share of AfT and ODA commitments							
AfT	30.2	33.4	36.7	35.1	41.0	41.7	42.5
ODA	34.1	38.8	35.7	35.1	37.1	37.8	38.7
Africa's Share of AfT In total ODA To Africa	18.5	16.0	23.1	25.1	28.0	29.5	30.8

Source: OECD-DAC, Aid activities database (CRS).

As presented in Table 3.7, a brief comparative analysis across all Regional Economic Communities (RECs) and inter-governmental organization considered revealed that COMESA was the largest recipient of Aid for Trade commitments and disbursements, followed by ECOWAS and SADC, with the total Aid for Trade commitments during the period 2002-11 amounted to US$30.6 billion, US$21.6 billion and US$18.9 billion, respectively. These three RECs respectively share 38 percent, 26 percent and 24 percent of Africa's total population with Aid for Trade commitments share of 28.9 percent, 19.3 percent and 19.1 percent over the same period. The ranking of RECs remains the same for the proportional distribution of Aid for Trade disbursements and total population during the period 2006-11. This clearly demonstrates that the distribution of the total Aid for Trade

commitments and disbursements to RECs in Africa mirrors the population share of RECs in Africa.

Table 3.7: Total AfT commitments to the Regional Economic Communities (RECs)

	2002-05 avg.	2006	2007	2008	2009	2010	2011
COMESA	3149	3335	4694	3640	5548	4304	5964
ECOWAS	1704	1763	2833	3609	4873	3270	3579
SADC	2199	1878	2589	3332	3144	2736	2985
CEMAC	324	567	518	380	617	521	575
EAC	1115	1366	2497	1981	3404	2312	2546
ECCAS	908	869	1233	820	1493	1104	1397
Growth rates of AfT commitments to RECs in Africa (%)							
COMESA	4.2	5.9	40.7	-22.4	52.4	19.1	20.3
ECOWAS	3.1	3.4	60.7	27.4	35.0	31.6	32.1
SADC	8.4	-14.6	37.9	28.7	-5.6	11.6	12.3
CEMAC	56.7	75.2	-8.7	-26.6	62.2	25.5	27.2
EAC	21.3	22.5	82.8	-20.7	71.8	39.1	40.7
ECCAS	-2.6	-4.3	41.8	-33.4	82.0	21.5	23.6

Source: OECD-DAC, Aid activities database (CRS).

CHAPTER FOUR

THEORETICAL FRAMEWORK AND METHODOLOGY

4.1   Introduction

This chapter presents the theoretical framework and methodology of this study. It will be recalled that the main aim of this study as stated in chapter one is to examine the impact of trade liberalization and institutions on economic growth in selected SSA countries. This chapter contains the theoretical/conceptual framework that form the basis of the study as well as the methodology which comprises model specification and the techniques of estimation.

4.2 Theoretical Framework

This section examines the theoretical base of this study. The theory upon which this study is based is the endogenous growth theory, theory of trade and the theory of institutional development. This is vital because the study examines the impact of trade liberalization and institutions on economic growth. The endogenous growth theory explains the long-run growth rate of an economy on the basis of factors apart from labour and capital (which are assumed to be endogenous) that affect growth, as against exogenous factors of the neoclassical growth theory. Trade theory was also adopted in this study because of the importance of trade to economic growth. The theory of institutional development is adopted because of the fact that it explains how a country can develop her institutions over time and why it is important to do so.

4.2.1 Endogenous Growth Theory

The endogenous growth theory is an extension of some other growth theories before it. Harrod and Domar (1947) observed that investment plays a key role in the process of economic growth. Investment has a dual character: first, it creates income and secondly it augments the productive capacity of the economy by increasing the capital stock. The former is the 'demand effect' and the latter is the 'supply effect' of investment. Thus, so long as net investment is taking place, real income and output will, *ceteris paribus*, continue to expand.

Solow (1956), expanding the Harrod-Domar formulation, added a second factor, labour and introduced a third independent variable, that is technology to the growth equation. He presented his neoclassical growth model by defining a production function that permits the substitution of capital and labour. This implies that the marginal products of the factors are variable, depending on how much of the factor is already used in production and on how many other factors it combines with. Also, Solow assumed each factor of production - labour and capital, is subject to diminishing returns of their usage separately and constant returns to both factors jointly. Technological progress became the residual factor explaining long term growth. Conventional neoclassical theory, as modeled by Solow, holds that economic growth is as a result of accumulated physical capital and an expansion of the labour force, in conjunction with an exogenous factor, technological progress which makes physical capital and labour more productive.

Generally, Solow's model of economic growth is based on the premise that output in an economy is produced by a combination of labour (L) and capital (K), under constant returns, so that doubling input results in doubling output. Thus, the quantity of output (Y) is also determined by the efficiency of productivity (A) otherwise called "technical progress" with which capital and labour is used. Mathematically;

$$Y = A.f(L, K) \qquad\qquad (4.1)$$

Solow assumed that this production function exhibits constant returns to scale, that is, if all inputs are increased by a certain multiple, output will increase by exactly the same multiple.

The Solow neoclassical growth model uses a standard Cobb-Douglas production function in which:

$$Y_t = A_t K_t^{\alpha} L_t^{1-\alpha} \qquad 0 < \alpha < 1 \qquad\qquad (4.2)$$

In this case, Y is Gross Domestic Product, K is stock of capital, L is labour and A represents a measure of productivity, assumed to grow at exogenous rate n. α is the share of capital in output production, $1-\alpha$ is the share of labour in output production, but α has a value that ranges between zero and one such that $\alpha + 1 - \alpha = 1$ (which implies efficient use of capital and labour). The model further assumes that:

$$L_t = L_0 e^{nt} \qquad\qquad (4.3)$$

$$A_t = A_0 e^{nt} \qquad\qquad (4.4)$$

$$A_t L_t = e^{nt}(L_0 A_0) = L_0 A_0 e^{nt} = \varphi e^{nt} \qquad\qquad (4.5)$$

where; $\varphi = L_0 A_0$, means the effective units of labour, which grows at rate n.

However, the new endogenous growth theory was developed as a reaction to omissions and deficiencies in the Solow neoclassical growth model. The theory explains the long-run growth rate of an economy on the basis of endogenous factors as against exogenous factors of the neoclassical growth theory. This theory is of the view that the growth in Gross Domestic Product (GDP) is a natural consequence of long-run equilibrium. The theory explains both growth rate differentials across countries and a greater proportion of the growth observed. Endogenous growth theory discards the neoclassical assumption of diminishing marginal returns to capital investments, permitting increasing returns to scale in

aggregate production and frequently focusing on the role of externalities in determining the rate of return on capital investments. By assuming that public and private investments in human capital generate external economies and productivity improvements that offset the natural tendency for diminishing returns, endogenous growth theory explains the existence of increasing returns to scale and the divergent long-term growth patterns among countries. Thus, the theory emphasises technical progress resulting from the rate of investment, the size of the capital stock and the stock of human capital (Todaro and Smith, 2011).

In the light of the shortcomings of Solow's growth model, the augmented version of the model was specified by Mankiw, Romer and Weil (1992). In this augmented version of the model, a Cobb-Douglas production function is assumed. This started off by adding human capital accumulation (divided into physical capital, human capital and productivity-augmented labour) to the Solow model. According to Mankiw, Romer and Weil (1992), for an economy to experience steady state the following assumptions must hold:

(i)   There are many firms in a market;

(ii)   All firms are identical;

(iii)   Knowledge or technological advance is a non-rival good;

(iv)   All markets (both input and output markets) are perfectly competitive; and

(v)   Physical capital and human capital are accumulating factors i.e., the representative agent saves output to have more capital (either physical or human).

Thus, the Cobb-Douglas production function is written as:

$$Y(t) = K(t)^{\alpha} H(t)^{\beta} [A(t)L(t)]^{1-\alpha-\beta}$$

(4.6)

where; Y, K, H and L are respectively output, physical capital, human capital and labour, α and β are the elasticities of output with respect to physical and human capital, and A(t) is the level of technological and economic efficiency. H is measured by education and L includes both skilled and unskilled labour. Cellini (1997) however observed that, A(t) can be decomposed into two elements namely; an economic efficiency part I(t), that depends on a set X of institutions and public policies, and an exogenous technological progress component Ω(t) assumed to grow at the rate g(t). $\alpha, \beta \in [0,1], while\ \alpha + \beta \in [0,1]$, and t denotes time. This implies that the production function exhibits constant returns to scale in its three factors: physical capital (K), human capital (H) and a measure of productivity (A). Cellini (1997) opined that due to the fact that the steady state income is not very useful, the observed growth rates include out-of-steady state dynamics, the transitional dynamics of *y* as well as the short-run dynamics around the transition path.

4.2.2 Trade Theory

Many scholars have stressed the fact that the growth of an economy is linked to the growth of export under the generally known "export-engine-of-growth" hypothesis (Fajana, 1979; Alege, 1993). The relevant theory is the Hecksher-Ohlin (H-O), model that was postulated by two Swedish Economists, Eli Hecksher and Bertil Ohlin in 1933. This model has the following assumptions; two countries, two homogenous goods, two factors of production, labour and capital, under assumed perfectly competitive markets; identical production functions with freely available technologies across countries; constant returns to scale; perfect mobility of production within a country but immobility between countries; different factor intensities; general equilibrium condition; no transportation costs and no barriers to trade.

However, in life situations, these assumptions are not realistic as labour and capital are not the only factors of production; production functions are not identical in all countries and the markets are not perfectly competitive, hence the intervention of institutions; there are barriers to trade, there is transportation cost involved in moving goods from one place to another. The model shows that a rise in trade raises the demand for labour-intensive products in poor, labour-surplus countries (Todaro and Smith, 2011). This is commonly taken to mean that in H-O model, all markets clear with macroeconomic equilibrium and full employment throughout. A rise in trade can only cause an inter-sectoral shift towards labour - intensive activities (so, higher wages).

The Hecksher-Ohlin neo-classical trade theory, which describes analytically the impact of economic growth on trade patterns and the impact of trade on the structure of the national economies and on the differential returns or payments to various factors of production predicts that, since developing countries have a large pool of labour, opening up to trade will involve them exporting goods and services that are relatively more labour- intensive and importing goods that are relatively more capital-intensive. This process depends on the fact that trade liberalization will raise the relative price of labour-intensive goods and services which, in turn, increases the demand for labour and hence employment in an economy.

The Stolper-Samuelson (SS) theory was put forward by Wolfgang Stolper and Paul Samuelson and is an addition to the Hecksher-Ohlin theory in explaining comparative advantage. According to the Stolper-Samuelson theory, free trade in line with a country's comparative advantage will increase the demand for unskilled labour in the labour-abundant countries and also raise wages once any labour surplus is eliminated. Conversely, the demand for skilled labour will rise in the capital- (and by extension skill-) intensive countries. The demand for, and wages of unskilled labour will, at the same time, fall. Freer trade is

unambiguously beneficial for a developing country since it not only promotes efficiency and growth but also has gainful effects on the abundant factor in the economy, unskilled labour. However, the beneficial growth, employment and distributional implications of trade liberalization hinge on the assumptions of existence of perfectly competitive markets and constant returns to scale.

Both the Hecksher-Ohlin and Stolper-Samuelson trade theories complement each other in that they drive international specialization of countries of the world through the comparative advantage argument. If domestic factor prices were the same, all countries would use identical methods of production and would therefore, have the same relative domestic product price ratios and factor productivities, and there may be no need for international trade. But this is not the case in real life. Therefore, both theories portray international trade as a vehicle for a country to capitalize on her abundant resources through more intensive production, and export products that require large inputs of the abundant resources while relieving her factor shortage through the importation of products that use large amounts of her relatively scarce resources.

4.2.3 Theory of Institutional Development

LaPorta *et al.* (1999) developed the theories of institutional development which centres on factors that can lead to the formation and persistence of a given institutional framework in a society. The theories of institutional development can be classified into three based on their structural composition namely: economic, political and cultural institutional theories. The economic theory of institutional framework believes that institutions are essentially crafted when it is efficient to create them. The connotation of this is that institutions are mostly created by economic actors when the perceived social benefits of such creation significantly exceed the perceived transaction costs that are associated with their creation. The political theory of institutional development hinges fundamentally on

redistribution of societal resources much more than economic efficiency. The basic maxim of the political institutional development is that institutions are fashioned by those that have political powers in such a way that they can stay in power with a view to extracting economic rents (Persson, *et al.* 2003; Adewole and Osabuohien, 2007). While the cultural theory of institutional development postulates that a given society will usually hold beliefs that can shape collective actions of the constituting human agents.

One important aspect of the relevance of institutional development is the fact that institutions aid the development of ideas and ideologies. Institutions play a major role in determining how ideas and ideologies matter in the performance of an economy. Ideas and ideologies shape the subjective mental constructs that individuals use to interpret the world around them and make choices. Moreover, by structuring the interaction of human beings in certain ways, formal institutions affect the price we pay for our actions, by deliberately or accidentally structured to lower the price of acting on one's ideas, they provide the freedom to individuals to incorporate their ideas and ideologies into the choices they make. A key consequence of formal institutions is mechanisms, like voting systems in democracies or organizational structures in hierarchies that enable individuals who are agents to express their own views and to have a very different impact upon outcomes than those implied by the simple interest-group model that has characterized so much of economic and public choice theory (North, 1991).

Institutional measures allow the polity and the economy to be inextricably interlinked in the performance of an economy and therefore we must develop a true political economy discipline. Institutions determine the way political and economic systems work. Not only do polities specify and enforce property rights that shape the basic incentive structure of an economy, in the modern world the share of Gross Domestic Product (GDP) going through government and the ever-present and ever-changing regulations imposed by it are the most important keys

to economic performance. This can only be done by a modeling of the political-economic process that incorporates the specific institutions involved and the consequent structure of political and economic exchange (North, 1991).

Institutions create the choice pattern that affects not only transactions and production costs but also the likelihood of engaging in economic activities (Ike, 1977; 1984; Williamson, 2000; Rodrik, 2008). Institutions can reduce or increase transaction costs because they determine the nature of exchange which is the essence of international trade and by extension trade liberalization. Institutions form a link for connecting the past with the present and the future- a kind of path dependency. Institutions provide the incentive structure of any economy because they create the structure that shapes the direction of economic change towards growth, stagnation or decline. If the direction is towards growth, employment will increase, savings and investment will also increase and the economy will experience economic growth. Since economic growth leads to economic development, hence, institutions are vital in the development of an economy. This necessitated the adoption of the growth theory for this study.

4.2.4 Trade Liberalization, Institutions and Growth Theory

The link between trade and growth theories stems from the fact that when a country engages in international trade, her national markets draw additional domestic and foreign investment which increases capital accumulation. Apart from goods and services, technology is also traded among countries, all of which enhance the growth of any country. The rapidly expanding export market provides a stimulus for growing local demands which makes countries enjoy the consumption of goods and services that they do not have comparative advantage producing. Political institutions are defined by the nature of political leadership structure or governance structure that is persistent in the country. Examples of political institutions include the form of government in a country - military,

democracy or dictatorship, rule of law and the extent of constraint of political power (Olomola, 2007; Acemoglu and Robinson, 2008; Hassan *et al.,* 2009). Economic institutions, on the other hand, are essential for economic growth in a country due to their influence in shaping incentives for various economic actors in a society (Acemoglu and Robinson, 2008). Not only do economic institutions determine the level of economic growth potential of a country, they also determine the distribution of resources and economic gains in the country (IMF, 2005).

Foreign trade opens up the economy to the international community and allows the movement of goods and services in and out of countries of the world thereby contributing to economic growth. It has been regarded as an 'engine of growth', that is, an important stimulator of economic growth. Trade liberalization brings about investment in a country by drawing both domestic and foreign investment and thus increases the rate of capital accumulation, which in turn generates more employment in the country and hence improves economic growth. The neo-classical growth model contains a shift parameter that "reflects not just technology, but other factors such as resource endowments, climate and freedoms" (Mankiw, *et al.* 1992). This forms the basis under which institutions have come to play a very important role in determining the extent of growth a country will experience. Institutions help in shaping the interactive ways of the citizens of a country, not just among themselves internally but also the way they interact when trading with people from outside the country.

The link between institutions and economic growth is also visible from the fact that institutions dictate the margins at which organizations operate and hence make comprehensible the interplay between the rules of the game and the behaviour of the actors. If organizations - firms, trade unions and political parties just to name a few - devote their efforts to unproductive activities, institutions

have provided the incentive structure for such productive activities. Third World countries are poor because their institutions define a set of payoffs to political and economic activities that does not encourage productive activity. Socialist economies are just beginning to appreciate that the underlying institutional framework is the source of their current poor performance and are attempting to struggle with ways to restructure the institutional framework to redirect incentives that in turn will direct organizations along productivity-increasing paths. And as for the Western world, we not only need to appreciate the importance of an overall institutional framework that has been responsible for the growth of the economy, but to be self-conscious about the consequences of the ongoing marginal changes that are continually occurring - not only on overall performance but also on specific sectors of the economy. We have long been aware that the tax structure, regulations, judicial decisions and statute laws, to name a few formal institutions, shape the policies of firms, trade unions and other organizations and hence determine specific aspects of economic performance.

4.2.5 Conceptual Framework

Based on what is gathered from theoretical literature, this section links the interactive mechanisms between institutions, trade liberalization and economic growth at a given point in time. As illustrated in figure 4.1, two broad forms of institutions can be identified namely; formal and informal (North, 1991; Greif, 1998). The informal institutions involve basic human rules not written down that direct the behaviour of individuals in a given society. Examples of informal institutions include; norms, traditions, culture and so on (North, 1991, 2005; Greif, 2006). LaPorta *et al.* (1999)'s theories of institutional development can be summed up into two viz – formal institutions which comprise of economic and political theories and informal institutions which comprise of cultural theory. Figure 4.1 is adapted from the work of Osabuohien (2011). However, while he examined how political, economic and financial institutions influence different

trade export categories, this study examined the impact of trade liberalization and institutions on economic growth.

The formal institutions are made up of laid down written rules that outline contractual obligations among the parties involved. Easterly (2008) refers to the formal institutions as 'explicit' that follow the 'top-down' process of laws written by political leaders. The informal institutions are referred to as 'implicit' that follow a 'bottom-up' approach, which emerges from the social norms, customs, traditions, beliefs and values of individuals within a society. The formal institutions have also been categorized into political and economic (Acemoglu and Robinson, 2008). In this study also, institutions are classified formal institutions into two – political and economic institutions.

In terms of the channels and mechanisms of institutions and trade liberalization on economic growth, the nature of the institutions will have some effects on contract enforcement as depicted in Figure 4.1. For instance, when institutions are weak, there would be ineffective contract enforcement compared to a situation of strong institutions. On the other hand, the level to which contracts are enforced would have effects on transaction costs, which would in turn affect international trade. Thus, having 'good type agent' will reduce the cost of transacting (Greif, 2006). On the other hand, economic institutions, which can have both international and domestic dimensions, are put in place by the economic arrangements that a country is involved in. Both the domestic and international economic institutions affect one another because any policy made domestically affects the international community. Membership of World Trade Organization (WTO) and regional economic communities (RECs) are used as key examples of economic institutions.

Basically, the more effective the nature of contract enforcement, the lower would be the level of transaction costs. For example, laws that are well received in a

country will influence contract enforcement as a result of better inevitability of human behaviour, which will reduce transaction costs. This may be the reason, among other things, why the services of specialists such as lawyers are usually required when parties are entering into contracts. This is to help situate the terms of the contract in order to reduce transaction costs and contractual hazards that might result from adverse selection. When transaction cost reduces, this boosts the level of economic activities by reducing the risks and uncertainties involved in doing business and as a result influence economic growth, and by extension international trade. In other words, transaction costs would have influence on the overall economic performance of a country. This is because, the higher the transaction cost, the more costly it would be to undertake economic activities, this means that high transaction costs would lead to higher cost of doing business, which will lower the level of economic activities, ceteris paribus. On the other hand, trade policy gives direction to the activities of those that are engaged in trade, that is, it dictates the trading partners of a country, this which will in turn affect the level of international trade via its effect on free trade among countries. As can be seen in Figure 4.1, there are other factors (like trade policies) that will possibly influence international trade (Lyakurwa, 2007). This is given the role that these indicators can play in the trading process especially with respect to trade policy which is essential to transaction cost.

However, given the fact that this study is focused on the influence of trade liberalization and institutions on economic growth, these factors are given emphasis in this study because they help in the improvement of trade. Thus, this study examined the validity of the theory in the selected SSA countries. Theory predicts that trade liberalization should promote trade and in turn fuel economic growth in the long run and that trade liberalization expands trade opportunities, improves efficiency of allocation of resources (towards the most efficient sectors), and accelerates technological development especially through liberalization of imports. In addition, theory also predicts that the limited growth effects of trade

openness in Africa may be as a result of their weak institutions, this study is carried out in order to see if this is true or not in the selected SSA countries.

Figure 4.1: Institutions, Trade and Growth Nexus

```
                              ┌──────────────┐
                              │ Institutions │
                              └──────┬───────┘
                        ┌────────────┴──────────────┐
                   ┌────▼────┐                  ┌────▼─────┐
                   │ Formal  │                  │ Informal │
                   └────┬────┘                  └────┬─────┘
            ┌───────────┴──────────┐                 │
       ┌────▼─────┐          ┌──────▼────┐           │
       │ Economic │          │ Political │           │
       └────┬─────┘          └──────┬────┘           │
       ┌────┴──────┐                │         ┌───────▼──────────┐
       │           │                │         │ Norms, Custom,   │
       │           │                │         │ Traditions,      │
   ┌───▼───┐ ┌─────▼───────┐        │         │ Taboos e.t.c.    │
   │National│ │International │  ┌────▼──────────────────────────┐ │
   │       │◄►│institutions-│◄►│ Domestic e.g. Ministry of Trade,│ │
   └───────┘ │WTO, RECS,   │  │ Custom Authorities, e.t.c.    │ │
             └─────┬───────┘  └───────────┬──────────────────┘ │
                   │                      │                    │
         ┌─────────▼──────┐        ┌──────▼────────┐           │
         │Contract Enforcement│◄──►│ Transaction cost│◄─────────┘
         └─────────┬──────┘        └──────┬────────┘
                   └──────┐    ┌──────────┘
                       ┌──▼────▼──────┐    ┌──────────────────┐
                       │Trade Enhancement│◄─│Cultural, Economic│
                       └──────┬────────┘   │and Political     │
                              │            │Factors           │
                              │            └─────────┬────────┘
                       ┌──────▼────────┐             │
                       │Trade Liberalization│◄─────────┤
                       └──────┬────────┘             │
                       ┌──────▼────────┐             │
                       │Economic Growth│◄────────────┘
                       └───────────────┘
```
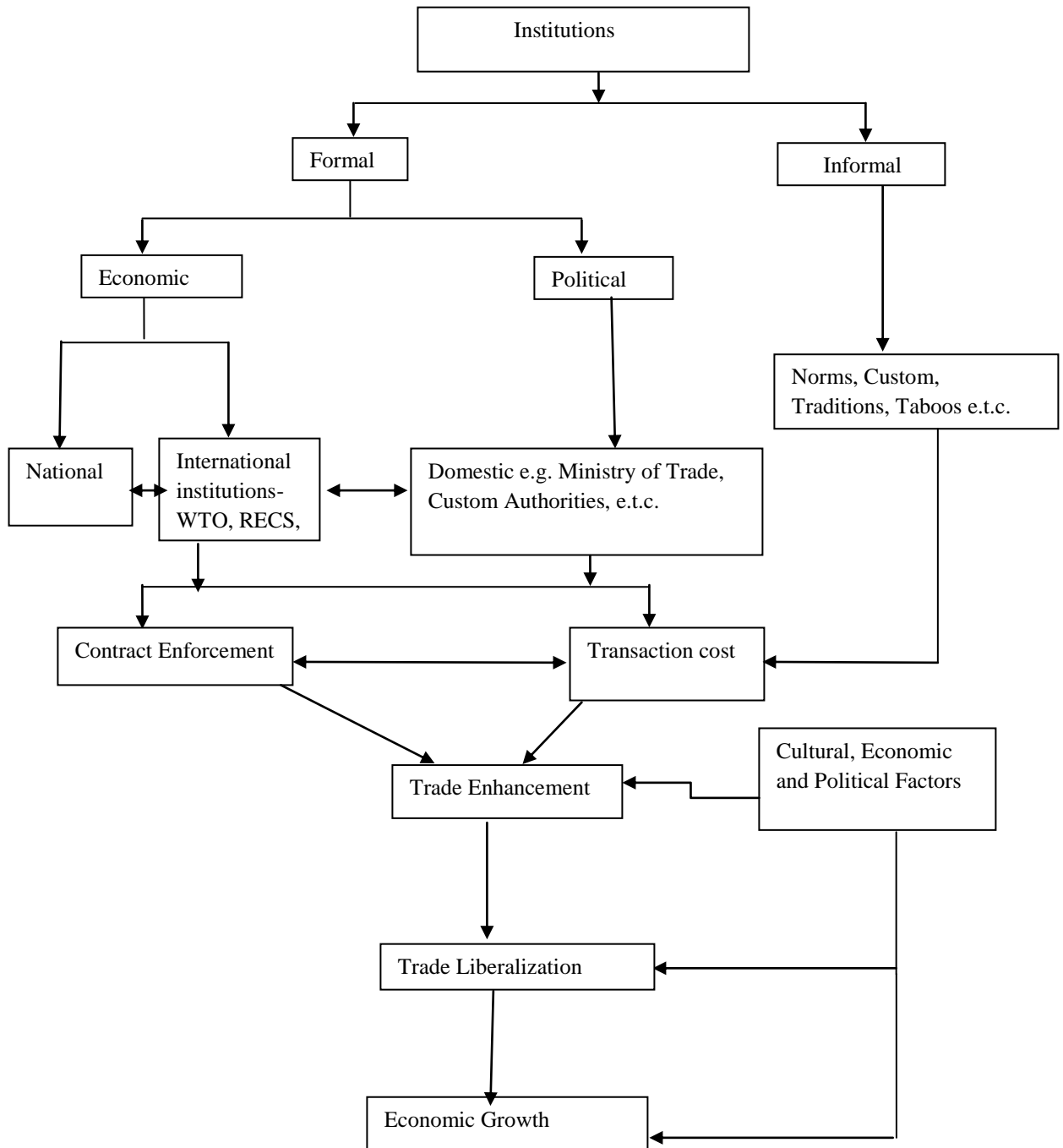
Source: Adapted from Osabuohien (2011).

4.3   Research Method

This study examined the impact of trade liberalization and institutions on economic growth in selected sub-Saharan African (SSA) countries. Therefore, based on the objectives of this study, and in order to test the hypotheses stated in chapter one, this study specified a model. The theoretical base for this specification is found in the Solow growth model and in its extension: the endogenous growth theory which is an improvement of the Solow growth model. The endogenous growth theory assumed that growth is affected by some other variables aside labour and capital. In this study, we assume that economic growth is influenced by these conventional growth variables (labour and capital), institutional variables as well as trade liberalization variables. The model is the economic growth/trade openness/institutions model specified in Section 4.3.1 (under the model specification section) and was estimated using the Least Square Dummy Variable (LSDV) and Generalized Method of Moments (GMM).

4.3.1 Model Specification

The model for this study is adapted from the works of Kagochi *et al.*, (2007); Baliamoune-Lutz and Ndikumana (2007) and Bhattacharyya (2011). In Section 2.4 of chapter two of this study, these studies were reviewed. They all focused on trade liberalization, institutions and economic growth. From a methodological standpoint, these studies found out that trade liberalization and institutions have weak effects on growth. As regards trade liberalization, one probable explanation for this is the structure of trade. It was observed that the composition of trade determines the strength of growth. In terms of institutions, it was observed that weak institutions and an inadequate economic policy framework are partially responsible for the weak growth gains from trade liberalization in African countries (Baliamoune-Lutz and Ndikumana, 2007; Bhattacharyya, 2011). Therefore, this study is out to verify this assertion in the selected SSA countries.

However, the model specified in this study differs from that of Kagochi *et al.* (2007); Baliamoune-Lutz and Ndikumana (2007) and Bhattacharyya (2011) in that some new variables like human capital, taxes and natural resource endowment are added to our model specification in order to align with the objectives of our study. The reason for this is that we discovered that taxes and natural resource endowment have been discovered from literature as two important factors that determine economic growth since the revenues generated from them is used for investments in the economy. The rationale for adding human capital (proxied by secondary and primary school enrolments) is because the aggregate output in a country is produced by both capital, labour and technology, and the development of human capital is crucial to production since it helps to increase aggregate output if efficiently utilized. Hence, it is expected that human capital contributes positively to economic growth in any country. This is one area in which this study made its contribution to knowledge.

The Solow growth model assumed that growth in an economy is influenced by capital and labour. These variables are assumed to be exogenous. Thus, the set of variables in (4.7) represents the Solow growth equation:

$$Grgdp = f(Gkap, Lab) \qquad (4.7)$$

where; Grgdp: is the growth rate of real GDP;

Gkap: is the gross fixed capital formation (measure of capital);

Lab: is the employment to population ratio (measure of labour).

The endogenous growth model (which is an extension of the Solow model) assumed that aside labour and capital, economic growth is influenced by other variables. In order to satisfy the objectives of this study, we assume that economic growth is influenced by trade liberalization (TLIB) and institutional (INST) variables in addition to labour and capital. Thus, equation 4.7 is re-written as:

$$Grgdp = f(Gkap, Lab, INST, TLIB) \qquad (4.8)$$

Trade liberalization and institutional variables are made up of a set of variables which are specified in (4.9) and (4.10) below:

$$INST = f(Reprisk, Polrig, Ethsion, Hkap, Taxes, Nare) \qquad (4.9)$$

$$TLIB = f(Open) \qquad (4.10)$$

where; Open: is the degree of openness (measure of trade liberalization);

Taxes: is proxied by tax revenue on natural resources;

Hkap: is human capital proxied by primary and secondary school enrolments;

Nare: is natural resource endowment (proxied by the share of fuel in total export);

Reprisk: is repudiation risk (proxy for contracting institutions - a measure of economic institutions);

Polrig: is political Rights (proxy for political institutions);

Ethsion: is ethnic tensions (proxy for cultural institutions).

However, based on the theoretical and conceptual frameworks on the impact of trade liberalization and institutions on economic growth, an endogenous growth model that incorporates trade liberalization and institutions is specified. It recognizes the interrelationships between economic growth, trade liberalization and institutions in a structural equation model. The specification allows for the identification of the channels through which trade liberalization, institutions and other policy interventions affect economic growth over time. Consequently, this study specifies the growth model explicitly as follows:

The Growth/Institutions/Trade Liberalization Equation:

$$Grgdp = f(Gdpini, Gkap, Lab, Hkap, Reprisk, Polrig, Ethsion, Open, Nare, Taxes)$$
$$(4.11)$$

where; Gdpini is the initial level of GDP and other variables are as defined previously.

The specification of equation (4.11) is aided by the endogenous growth theory and empirical studies as discovered from the literature. In this regards, the dependent variable in the growth equation is the Grgdp, which is the growth rate of the value of final goods and services produced in a country within a year when valued at constant prices. This is often used as an indicator of economic growth. The higher the Grgdp, the higher the level of growth of the economy and vice versa.

Initial level of GDP (Gdpini) proxied by the Gross Domestic Product (GDP) which is the monetary value of final goods and services produced in a country within a year when valued at current prices. This is included in our model because we assume that the initial level of growth of a country is related to the current growth rate of the country. There is an integrated growth process such that the current growth level is expected to be related and higher than the previous year's level of growth. Empirical evidence opined that the current growth rate of a country is assumed to be affected by the initial level of growth, *ceteris paribus*. This implies that growth in the succeeding year is assumed to be affected by the growth experienced in the preceding year. This is closely related to the hypothesis of conditional convergence, which is often understood to mean that countries converge to parallel growth paths, the levels of which are assumed to be a function of a small set of variables (Durlauf, *et al.* 2005). It is in this regards that we included the initial level of GDP (Gdpini) in the model to allow us observe the integration between previous level of growth and current level of economic growth on the assumption that the current growth rates of the selected SSA countries is affected by the previous level of growth. Theoretically, it is expected that this variable is negatively related with current rate of growth, this is due to the fact that the current rate of growth is expected to be higher than the previous year's growth (Durlauf, *et al.* 2005).

Gross Fixed Capital Formation (Gkap) refers to capital invested on fixed assets, infrastructural and social amenities in an economy. This is a measure of capital or investment. This is included in our model because Gkap encourages investment. When investment increases, output will increase and Grgdp will also increase. Hence, it is expected to be positively related with economic growth.

Employment to Population Ratio (Lab) is one of the key indicators of the labour market according to the International Labour Organization (ILO). The working age population comprises of the total number of persons that fall within the working age category that are engaged in employment. This means that persons like full-time housewives and students of working age that are still in tertiary institutions are excluded from the working population because they are not employed. But this study is only interested in the number of persons that are willing and able to work, and are actually gainfully employed. If the level of employment increases, output level will increase, hence Grgdp will increase. Thus, Lab is expected to be positively related with economic growth.

The institutional variables included in the model are explained in succession. Political Rights (Polrig) is the proxy for political institutions. Political Rights measures the extent to which a country's citizens are able to participate in selecting their government as well as freedom of expression and association. It is measured on a scale of 1-7, with 1 representing the highest degree of political freedom and 7 the lowest. The reason for the inclusion of this variable in the model stems from the fact that when the people select a good government, strong political institutions would be built and the country would experience economic growth. Polrig is expected to be negatively related with economic growth.

In order to go beyond the frequently used "cluster" of institutions and explain economic institutions, this study decomposed economic institutions into two viz; property rights institutions and contracting institutions (Knack and Keefer, 1995; Rodrik, 2000a; Acemoglu and Johnson, 2005). Property rights institutions are the

contract between the state and the ordinary citizens as a group and depend on the distribution of political power between the two. While contracting institutions are contracts between two private citizens or between a state institution and a private citizen. A measure of property rights institutions is expropriation risk which captures the performance of institutions that constraints government and elite expropriation of private property (expropriation risk has a direct relationship with economic growth); and a measure of contracting institutions is the repudiation risk that captures the performance of institutions that supports private contracts. It has been observed from literature that there is an overlap between the two measures with a high correlation coefficient of 0.9 and both institutions are put in place to control opportunistic behaviour of an agent or a group (Bhattacharyya, 2011). The difference between the two measures stems from the fact that if contracting institutions fail, it is possible to write an alternative contract but it is difficult to write an alternative contract when property rights institutions fail (Acemoglu and Johnson, 2005).

However, this study used contracting institutions to capture economic institutions because it is more reliable than property rights institutions since an alternative contract can be written if one fails. Contracting institutions is proxied by repudiation risk (from International Country Risk Guide) which measures contract enforcement between private citizens. It is expected that the contracting environment between the government and a private citizen will be positively correlated with the contracting environment among private citizens. The measure operates on an eleven point scale ranging from 0 to 10 with a high score implying better contracting institutions. There is a positive relationship between repudiation risk and economic growth, when it is high, growth is high also. Thus, repudiation risk is expected to be positively related with economic growth.

This study made use of 'ethnic tensions' as an indicator of ethnic fractionalization (a measure of cultural institutions). It is used as a measure of the relative peace in

a country. It is measured on a 0-6 scale, with higher values implying lower ethnic tension. Ethnic tensions tend to be high in countries with high fractionalization. Several studies have shown that ethnic fractionalization or ethnic heterogeneity has a negative effect on growth (hence in this study ethnic tensions is expected to be negatively related with Grgdp). The effect could arise through the effects of ethnic tensions on private investment, public expenditure on education and health (Mauro, 1995; Easterly and Levine, 1997), or through increased incidence (and the probability) of internal armed conflicts which destroy economic activity (Collier and Hoeffler, 1998; Addison and Baliamoune-Lutz, 2004). The choice of ethnic tensions is due to the fact that in some SSA countries, there have been ethnic clashes among ethnic groups; this affects trade because when a country is not peaceful, trading with other countries becomes difficult. This affects the level of economic activities. Ethnic tension is used as a proxy for cultural institutions. It is expected to be negatively related with economic growth.

It is worthy of note here that the institutional variables (repudiation risk and ethnic tensions) did not have a 0 value in any of the countries used as sample in this study. This enabled the researcher to be able to log the variables in the analyses.

Trade liberalization is proxied by degree of openness (Open) which refers to total external trade as a proportion of GDP, that is, (export + import)/GDP. If a country is open to trade, the country attracts foreign investment which will increase the level of output, and hence Grgdp is expected to increase. The more the ratio is closer to unity, the more the economy is opened while in a closed economy, the ratio is close to zero. Degree of openness is expected to be positively related with economic growth.

The other variables are explained in succession below:

Human capital (Hkap) is proxied by school enrolment (education). Education refers to the ability of the citizens to be able to read and write through the attendance of institutions of learning. It is a measure of human capital development. This variable is included in the model because the more educated the people of a country is, the better the institutions would be since education contributes to the growth of human capital in a country. The proxies used in this study to represent education are school enrolment – primary and secondary. The reason why we used these proxies is due to availability of data. The study did not include tertiary school enrolment because of the fact that data was not available for a lot of the sampled countries. Education is expected to be positively related with economic growth and institutions.

Natural resource endowment (Nare) refers to the natural resource a country is endowed with. Natural resource endowment can negatively affect institutions by fostering rent seeking activities and replacing tax revenues by other revenue sources less transparent and less subject to accountability (Sachs and Warner, 1997; Easterly and Levine, 2003). The reason for including this variable in the growth equation is because a significant proportion of the national income in SSA countries comes mainly from the exportation of primary products. The inclusion of Nare also helps to examine the impact of natural resources on economic growth. The variable is proxied by the share of fuel (oil) in total export. Nare is expected to be negatively related with economic growth because it fosters growth via the generation of revenue needed to fund projects.

Taxes refer to the amount of money levied by the government of a country on natural resources (endowments). They also refer to revenues generated from royalties paid by organizations for the exploration of natural resources. A sound tax system promotes institutional quality, since it provides the necessary public revenue to build good institutions, and it creates a more direct relationship

between citizens and state. The rationale for including this variable is due to the fact that since taxes promote institutional quality, when a country has good institutions, economic growth is enhanced. This is proxied by tax revenue on natural resources in millions of US Dollars. It is expected to have a positive relationship with the dependent variable (Grgdp).

It will be recalled that the model has some conventional variables found in the Solow growth model, and it is assumed that a non-linear relationship exists between the variables based on the Cobb-Douglas production function. Hence, equation (4.11) stated in Cobb-Douglas form gives:

$$Grgdp = AGdpini^{\alpha_1}Gkap^{\alpha_2}Lab^{\alpha_3}Hkap^{\alpha_4}Reprisk^{\alpha_5}Polrig^{\alpha_6}Ethsion^{\alpha_7}Open^{\alpha_8}Nare^{\alpha_9}Taxes^{\alpha_{10}}\varepsilon$$

(4.12)

where; A is the total factor productivity – a measure of productivity.

The Cobb-Douglas production function is a regression function in which the explicit solutions of the unknowns cannot be obtained except it is transformed to a linear function. Thus, equation (4.12) cannot be estimated directly using the Ordinary Least Square (OLS) technique of estimation since it is non-linear. Therefore, it would be necessary to transform it into linear form that allows the use of the OLS technique. In doing this, the double log-transformation rule is applied on the equation. The essence of this is that it provides estimated parameters that can be interpreted directly as elasticities, that is, the sensitivity of a change in the Grgdp following a change in the variables included in the model. Consequently, equation (4.12) becomes:

$$lGrgdp_t = \alpha_{0i} + \alpha_{1i}lGdpini_t + \alpha_{2i}lGkap_t + \alpha_{3i}lLab_t + \alpha_{4i}lHkap_t +$$
$$\text{(-)} \qquad \text{(+)} \qquad \text{(+)} \qquad \text{(+)}$$
$$\alpha_{5i}lReprisk_t + \alpha_{6i}lPolrig_t + \alpha_{7i}lEthsion_t + \alpha_{8i}lOpen_t +$$
$$\text{(+)} \qquad \text{(-)} \qquad \text{(-)} \qquad \text{(+)}$$
$$\alpha_{9i}lNare_t + \alpha_{10i}lTaxes_t + \varepsilon_t \qquad\qquad\qquad \text{(4.13)}$$
$$\text{(-)} \qquad \text{(+)}$$

where; α_0 is the intercept. The α_i's, for i = 1- 10, being elasticities are such that $\alpha_i \lessgtr 1$; the signs below the variables in brackets indicate the *apriori* expectations.

4.3.2 Technique of Estimation

The growth model (equation 4.14) was estimated using two econometric techniques namely; Least Squares Dummy Variable (LSDV) and the Generalized Method of Moments (GMM). The data was analysed with the use of STATA 11.0 software package. This is based on the ability of the software to handle LSDV and various test statistics that the study is interested in. It will be recalled from chapter one that this study made use of thirty SSA countries; which means that we have both time series and cross-sectional data. The OLS technique cannot be used to estimate combined time series and cross-sectional data. Therefore, there is a need to use an appropriate technique that takes care of panel data, hence the use of the LSDV technique. Consequently, equation (4.11) expressed in panel data form becomes:

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} +$$
$$\alpha_{5i}lReprisk_{it} + \alpha_{6i}lPolrig_{it} + \alpha_{7i}lEthsion_{it} + \alpha_{8i}lOpen_{it} +$$
$$\alpha_{9i}lNare_{it} + \alpha_{10i}lTaxes_{it} + \varepsilon_{it} \qquad (4.14)$$

where; i = 1, 2… 30 (countries); t = 1, 2… 28 (years). ε is the error term, i is i^{th} country and t is the time period for the variables we defined above. The intercept term carrying a subscript i suggests that the intercepts of the selected countries may be different. The coefficients α_1… α_{10} are elasticities because they measure the rate of change. α_0 is the intercept.

Panel Data is adopted in this study because of the following reasons:

i.   The technique of panel data estimation takes into account heterogeneity explicitly by allowing individual-specific variables;

ii.   By combining time series and cross sectional observations, panel data gives more variability, more informative data, less collinearity among variables, more degree of freedom and hence more efficient results are produced;

iii.   Panel data is better suitable for studying the dynamics of change;

iv.   Panel data enables us to study more complicated behavioural models;

v.   Panel data can better perceive and compute effects that simply cannot be observed in pure time-series or pure cross-section data; and

vi.   Panel data supplements empirical analysis in ways that may not be possible if we only use cross section or time series data (Gujarati and Porter, 2009).

There are four different estimating techniques under the panel data analysis. These are:

(a) Pooled Ordinary Least Square (OLS) Model: In this case, all the observations are pooled together to get a 'grand' regression neglecting the cross-section and time series nature of data. This method is based on the following assumptions; explanatory variables are non-stochastic and strictly exogenous, the regression coefficients are the same for all observations, the error term is independently and identically distributed with zero mean and constant variance as well as normally distributed.

(b) The Fixed Effects Model or Least Squares Dummy Variable (LSDV): Here, all observations are pooled together, but each cross sectional unit has its own (intercept) dummy variable. It assumes that the (slope and intercept) coefficients of the regressors vary across countries or over time; slope parameters are constant but intercept varies over individual unit and the explanatory variables and the error term are correlated.

(c) The Random Effects Model (REM) or Error Components Model (ECM): Unlike the LSDV model, in which each unit has its own (fixed) intercept

value, in this case it is assumed that the intercept values are random drawing from a much bigger population of observations, having a common mean value for the intercept. It assumes that the explanatory variables and error term are uncorrelated.

(d) The Fixed Effects Within-Group Model: In this case, all the observations are pooled together, but for each unit we express each variable as a deviation from its mean value and then estimate an OLS regression on such 'mean-corrected' or 'de-meaned' values(Gujarati and Porter, 2009).

This study adopted the use of the Least Squares Dummy Variable (LSDV) out of all these techniques. This is because the LSDV allows for heterogeneity among countries by allowing each country to have its own intercept value due to the fact that each cross-sectional unit may have some special features. The term 'fixed effects' is due to the fact that, although the intercept may differ across countries, each entity's intercept does not vary overtime, that is, it is time invariant. It also assumed that the slope coefficients of the regressors do not vary across countries or over time (Gujarati and Porter, 2009). The LSDV technique is suitable in cases where the individual specific intercept may be correlated with one or more regressors and especially when the number of observations (N) is not too large. Hence, the ε_{is} are assumed to be fixed parameters and the remaining disturbances stochastic with v_{it} identically independently distributed with zero mean and constant variance, that is, iid N (0, σ^2). In this regards, the regressors $\left(X_{it} \right)$ are taken to be independent of the v_{it} for i and t (Gujarati and Porter, 2009). However, in order to determine which one of the Fixed Effects technique (FE) or Random Effects technique (RE) methods that is suitable for this study, the Hausman test is used. Therefore, expressing equation (4.8) explicitly, we have equation (4.15):

$$y_{it} = \alpha_{1i} + \alpha_{2i}Gkap_{it} + \alpha_{3i}Lab_{it} + \alpha_{4i}INST_{it} + \alpha_{5i}TLIB_{it} + \varepsilon_{it} \qquad (4.15)$$

where the constant term, α_i are random, and they help to capture unobserved heterogeneity and y_{it} is the dependent variable - Grgdp (the phenomenon whose variation we want to explain, using other phenomena assumed exogenous) for individual i at time t, INST is a vector of institutional variables and TLIB are the trade liberalization variables (the exogenous phenomena whose variation is not explained in the model) for individual or group i at time t. ε_{it} is the error term between the mean value of the explained variables and the actual value for individual i at time t. Therefore, the mean of the error term can be stated as:

$$E\left[\varepsilon_{it} \mid \alpha_{it}, x_{i1}, ..., x_{iT}\right] = 0$$

where; t = 1...,T

Empirical work based on time series data assumes that the underlying nature of time series data is stationary. Thus, it is expected that economic variables are stationary in nature. The unit root test is used to test the nature of time series to determine whether they are stationary or non-stationary. If a time series is stationary, it means that its mean, variance and auto covariance are the same at the very point they are measured. That is, they are time invariant. But if the mean, variance and auto covariance of a time series are not the same at any point they are measured, the time series is non stationary. This is a unit root problem. This implies that the study of the behaviour of that time series is only possible for the time period under consideration. It cannot be generalized to other time periods. Such time series may be of little value for forecasting. The stationarity of the time series is important because correlation could persist in non stationary time series even if the sample is very large and may result in what is called spurious or nonsense regression (Yule, 1989; Wei, 2006). Thus, in order not to have spurious results, this study carried out panel unit root tests.

The panel unit test can be carried out on a pooled data when two conditions are met; first, the time series and cross-sectional observations must be more than fifteen years each and second, the panel must be balanced, that is, there should not be any missing data. These two conditions are met by this study. There are thirty countries selected and the time period is twenty-eight years; while the data used is a balanced one. Panel unit root test is the panel data (both time series and cross-sectional data) version of the time-series unit root test. The advantages of using panel unit root test are; (i) the power of a panel unit root test is significantly greater compared to the low power of the standard time-series unit root test in finite samples against alternative hypotheses with highly persistent deviations from equilibrium; (ii) since the power of unit root test depends on the total variation in the data used (both in the number of observations and their variation), panel unit root test is more powerful than standard time-series unit root test because the variation across countries adds a great deal of information to the variation across time, resulting in potentially more precise parameter estimates; (iii) the asymptotic distribution of a panel unit root test is standard normal, in contrast to individual time series unit root test (Wei, 2006).

There are different methods used to test the panel unit root but this study made use of the non-parametric Fisher-type test which uses the Augmented Dickey Fuller (ADF) test. This method is used because the ADF test conducts unit root tests for each time series individually, and then combines the p-values from these tests to produce an overall test. The ADF test combines information based on individual unit root tests and allow for a heterogeneous alternative hypothesis where the probability values can vary across countries. It is also a test that is conducted by combining the significance levels of the different tests. The null and alternative hypotheses are formulated as:

H_0: All panels contain unit roots.

H_1: At least one panel is stationary.

The rule of thumb for decision making under panel unit root test involves the rejection of the null hypothesis at the 1 percent statistical significance level, this implies that all panel series in the panel data set do not contain a unit root; therefore, at least one panel is stationary. This automatically implies the acceptance of the alternative hypothesis which means that at least one panel is stationary. The results of the panel unit test are presented in chapter five.

The study carried out a robustness check of the results (see section 5.4 of chapter five) in order to examine if the results are better when the researcher adds some new variables to the growth model (equation 4.14) or the results would be different from the original result. The new variables added to equation 4.14 are foreign direct investment (FDI); Contract intensive money (CIM) and Economic freedom (ECOFRE). These variables are also variables used as proxies for trade liberalization, political and economic institutions respectively.

Foreign direct investment (FDI) refers to the investment undertaken by an enterprise that is either wholly or partly foreign-owned. It is a cross-border investment in which a resident in one country (the direct investor) acquires a lasting interest in an enterprise in another country (the direct investment enterprise), this is a measure of trade liberalization and is expected to have a positive impact on economic growth.

Economic Freedom (ECOFRE) enhances the efficiency with which productive inputs are converted into output. The Economic Freedom Index (EFI) measures the degree of economic freedom present in five major areas: size of government – expenditures, taxes, and enterprises; legal structure and security of property rights; sound money; freedom to trade with foreigners; and regulation of capital, labour, and business markets (Gwartney and Lawson, 2003). Each country is assigned a rating based on a scale of 1 to 10, with 1 representing the lowest degree of economic freedom and 10 the highest level of economic freedom. It is expected that economic freedom has a positive impact on economic growth.

Contract Intensive Money (CIM) measures the extent to which property rights are protected and contracts are enforced. It is expressed as M_2-C/M_2 where M_2 is broad money supply and C is currency outside the banking system. According to Clague *et al.* (1999), contract intensive money was used as a measure of democracy and property rights. They influence the accessibility and willingness of economic agents to exercise property rights. CIM is expected to be positively related with economic growth.

Thus, the equation estimated for the robustness check in section 5.4 of chapter five is specified as:

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} +$$
$$\alpha_{5i}lReprisk_{it} + \alpha_{6i}lPolrig_{it} + \alpha_{7i}lEthsion_{it} + \alpha_{8i}lOpen_{it} +$$
$$\alpha_{9i}lNare_{it} + \alpha_{10i}lTaxes_{it} + \alpha_{11}lFdi_{it} + \alpha_{12}lCim_{it} +$$
$$\alpha_{13}Ecofre_{it} + \varepsilon_{it} \qquad\qquad (4.16)$$

However, in order to examine the impact of trade liberalization on economic growth and the impact of institutions on economic growth independently in chapter five which is devoted to the estimation of the model, the study decomposed the growth/institutions/trade liberalization model into three estimation processes. The estimations were done one after the other or one by one, that is, we first estimate the growth/trade liberalization equation in order to examine the impact of trade liberalization on economic growth, and thereafter we estimate the growth/economic institutions equation in order to estimate the impact of economic institutions on economic growth, we also estimate the growth/political institutions equation in order to estimate the impact of political institutions on economic growth. Furthermore, we estimate the growth/cultural institutions equation in order to assess the impact of cultural institutions on economic growth. Lastly, the trade liberalization variable was excluded and the growth/institutions equation was estimated in order to assess the impact of the three institutions on economic growth. The reason for doing this is to find out

which out of trade liberalization and institutions have a higher impact on economic growth or to find out if they actually complement each other in impacting on economic growth. Thus, this gives rise to the following equations:

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \alpha_{5i}lOpen_{it} + \alpha_{6i}lNare_{it} + \alpha_{7i}lTaxes_{it} + \varepsilon_{it} \qquad (4.17)$$

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \alpha_{5i}lOpen_{it} + \alpha_{6i}lReprisk_{it} + \alpha_{7i}lNare_{it} + \alpha_{8i}lTaxes_{it} + \varepsilon_{it} \qquad (4.18)$$

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \alpha_{5i}lOpen_{it} + \alpha_{6i}lPolrig_{it} + \alpha_{7i}lNare_{it} + \alpha_{8i}lTaxes_{it} + \varepsilon_{it} \qquad (4.19)$$

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \alpha_{5i}lOpen_{it} + \alpha_{6i}lEthsion_{it} + \alpha_{7i}lNare_{it} + \alpha_{8i}lTaxes_{it} + \varepsilon_{it} \qquad (4.20)$$

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \alpha_{5i}lReprisk_{it} + \alpha_{6i}lPolrig_{it} + \alpha_{7i}lEthsion_{it} + \alpha_{8i}lNare_{it} + \alpha_{9i}lTaxes_{it} + \varepsilon_{it} \qquad (4.21)$$

where, all variables and coefficients are as previously defined.

Equations (4.17), (4.18), (4.19), (4.20) and (4.21) are used to estimate the impacts of trade liberalization, economic, political and cultural institutions on economic growth, as well as the impact of institutions on economic growth respectively. These equations are not different from equation (4.14) specified above because they contain the same variables that are in equation (4.14). Hence, we have not specified any new equations.

It is possible to estimate the partial effect, elasticity or semi-elasticity of the dependent variable in an equation with respect to an explanatory variable to depend on the magnitude of yet another explanatory variable. In other words, to find out if there is an 'interaction effect' between the two independent variables.

This prompted this study to examine the interaction effect of trade liberalization and institutions on economic growth in chapter five. This was done in order to verify if trade liberalization will affect economic growth more when we have economic, political or cultural institutions. A new variable was introduced into the growth equation; this new variable is the product of the trade liberalization variable (degree of trade openness) and the estimated values of the institutional variables (repudiation risk, political rights and ethnic tensions). For each of the institutional variable, the mean value was used as a yardstick, any value above this mean value is ascribed 1 and any value below the mean value is ascribed 0. It is this binary or dichotomous variable that is then used to multiply the trade liberalization variable (degree of trade openness) that gave us the new variable. When the coefficient of the new variable is greater than 0, there is an interaction effect between trade liberalization and institutions while if is less than 0, there is no interaction effect between trade liberalization and institutions.

Therefore, this gave three equations which were estimated in chapter five. These equations are:

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \\ \alpha_{5i}lReprisk_{it} + \alpha_{6i}lPolrig_{it} + \alpha_{7i}lEthsion_{it} + \alpha_{8i}lOpen_{it} + \\ \alpha_{9i}lNare_{it} + \alpha_{10i}lTaxes_{it} + \alpha_{11}Open * Reprisk_{it} + \varepsilon_{it} \quad (4.22)$$

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \\ \alpha_{5i}lReprisk_{it} + \alpha_{6i}lPolrig_{it} + \alpha_{7i}lEthsion_{it} + \alpha_{8i}lOpen_{it} + \\ \alpha_{9i}lNare_{it} + \alpha_{10i}lTaxes_{it} + \alpha_{11}Open * Polrig_{it} + \varepsilon_{it} \quad (4.23)$$

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGdpini_{it} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \\ \alpha_{5i}lReprisk_{it} + \alpha_{6i}lPolrig_{it} + \alpha_{7i}lEthsion_{it} + \alpha_{8i}lOpen_{it} + \\ \alpha_{9i}lNare_{it} + \alpha_{10i}lTaxes_{it} + \alpha_{11}Open * Ethsion_{it} + \varepsilon_{it} \quad (4.24)$$

where; Open*Reprisk; Open*Polrig and Open*Ethsion are the products of the trade liberalization variable (degree of trade openness) and the binary values of

the economic, political and cultural institutions variables respectively. All other variables and coefficients are as previously defined. When $\alpha_{11} > 0$ (there is interaction effect); $\alpha_{11} < 0$ (there is no interaction effect). Equations (4.22), (4.23) and (4.24) estimate the interaction effects of trade liberalization and economic, political and cultural institutions on economic growth respectively.

Quite a number of sensitivity checks were carried out in chapter five via the estimation of equation (4.14), and the results reported in section 5.5. This was done by the decomposition of the sampled thirty SSA countries used in this study into the sub-regional groupings of Central Africa, West Africa and East/Southern Africa. The other decomposition that was done was based on the World Bank's classification in 1987 and 2007 of the sampled countries into moderately outward-oriented (MOOC), moderately inward-oriented (MIOC) and strongly inward-oriented countries (SIOC). The detailed composition of these countries into the various categories is presented in section 5.5 of chapter five. Furthermore, in order to find out if the exclusion of Nigeria and South Africa which are two major outliers would portend possible outlier problem to the estimation, Nigeria and South Africa was excluded from the West Africa and East/Southern African sub-regions where they belong to respectively; and the model was estimated to see if there was a noticeable change in the results.

The limitations of the LSDV includes; (i) there is the degrees of freedom problem arising from introducing too many dummy variables; (ii) the problem of multicollinearity arising from too many variables, both individual and multiplicative, this makes precise estimation of one or more parameters difficult; and (iii) the LSDV may not be able to identify the impact of time invariant variables. Due to these limitations, this study introduced the concept of dynamic panel data.

This study assumed that there is a connection between the level of growth experienced in a country in the preceding year with that of the current level, that is, the level of growth achieved in the previous year has a link with the level of growth that the country would attain in the current year. In other words, there is integrated growth in the country. This is particularly necessary because the economy is assumed not to exist in isolation; there are interconnections among the various sectors in the economy, hence, the economic activities in the preceding year have a bearing with current economic activities. This is why the dynamic panel data is used in this study to estimate this link. Thus, the linear dynamic panel data model is expressed as:

$$Grgdp_{it} = \alpha_1 Grgdp_{i,t-1} + \alpha_2 INST_{it} + \alpha_3 TLIB_{it} + v_i + \varepsilon_{it} \qquad (4.25)$$

where; Grgdp$_{t-1}$: one period lag of growth rate of real GDP; INST is a vector that comprises of strictly institutional exogenous covariates; TLIB is a vector of trade liberalization exogenous covariates such that:

The predetermined covariate includes:

$Grgdp_{t-1}$ is the first period lag of the dependent variable Grgdp;

$v_i + e_{it}$ is the usual error component decomposition of the error term;

v_i are unobserved individual-specific effects;

e_{it} are the observation-specific (individual) errors.

The individual-specific effects, v_i are assumed to be uncorrelated across individuals, $\{E(v_i, v_j) = 0; \forall i \neq j\}$ and with the disturbance of any individual at all leads and lags $\{E(v_i e_j) = 0; \forall i, j\}$, but may be correlated with the explanatory variables $\{E(X_{it} v_j) = unknown, \forall i, t\}$. The mean of v_i is zero $E(v_i) = 0; \forall i\}$ and its variance (σ_{vi}^2) may differ across individuals. The observation-specific disturbance has mean zero $\{E(e_{it}) = 0; \forall i, t\}$ and is uncorrelated across individuals

and $\{E(e_{it}e_{js}) = 0; \forall_i \neq 0, t \neq s\}$. In general, its variance $(\sigma^2{}_{eit})$ may differ across both individuals and periods. The initial observation $GRGDP_{i0}$ is uncorrelated with the disturbance of any individual observation for all periods $\{E(GRGDP_{i0}e_{jt}) = 0; \forall i, j, t\}$ but may be correlated with the individual effects $\{E(GRGDP_{i0}v_j) = unknown \; \forall i, j\}$.

In order to get a consistent estimate of α as $N \rightarrow \infty$ with T fixed, equation (4.25) is rewritten in first difference notations. This also eliminates the individual effects as follows:

$$D.Grgdp_{it} = \alpha_1 D.Grgdp_{i,t-1} + \alpha_2 D.INST_{it} + \alpha_3 D.TLIB_{it} + D.e_{it} \qquad (4.26)$$

The unobserved individual-level effects v_i have now disappeared from the differenced equation (4.26) because it does not vary over time. The Ds are the first difference operators. This transformation has effectively removed the fixed effect elements from the model; the other variables are as previously defined.

There are two major complications arising from estimating the dynamic panel data regression model using macroeconomic panel data. First, the presence of endogenous and/or predetermined covariates, and second, the small time-series and cross-sectional dimensions of the typical panel data set. The dynamic panel data regression model is in fact further characterized by some sources of persistence over time. There is the problem of autocorrelation which is due to the presence of a lagged dependent variable among the regressors and the other is the problem of heteroskedasticity (Okodua, 2010).

Thus, expressing equation (4.14) in dynamic panel data form gives:

$$lGrgdp_{it} = \alpha_{0i} + \alpha_{1i}lGrgdp_{t-1} + \alpha_{2i}lGkap_{it} + \alpha_{3i}lLab_{it} + \alpha_{4i}lHkap_{it} + \\ \alpha_{5i}lReprisk_{it} + \alpha_{6i}lPolrig_{it} + \alpha_{7i}lEthsion_{it} + \alpha_{8i}lOpen_{it} + \\ \alpha_{9i}lNare_{it} + \alpha_{10i}lTaxes_{it} + \varepsilon_{it} \qquad (4.27)$$

where: $Grgdp_{t-1}$ is the first period lag of the dependent variable Grgdp; and the other variables are as defined previously. To avoid the problem of multicollinearity, initial level of GDP (Gdpini) had to be replaced with the first period lag of the growth of real GDP (Grgdp) because leaving the two variables as explanatory variables in the same equation measures the same issue.

Therefore, in order to resolve these shortcomings and to make the results of the estimations to be better, the second part of the econometric analysis used in this study which is the Generalized Method of Moments (GMM) is imperative. This approach estimates the model parameters directly from the moment conditions that are imposed by the model. These conditions can be linear or non-linear in parameters. This is used because of the possibility of endogeneity and omitted variable bias. The variables that involve institutions may be endogenous and usually have limited time variation.

Looking at the impact of trade liberalization and institutions on economic growth, current level of a country's trade liberalization and institutions will affect future level of a country's economic growth and this may, in turn, affect future country trade liberalization and institutions, and may therefore give rise to what is called "dynamic endogeneity". The argument here centers on the fact that cross-sectional variation in observed country economic structures is driven by both unobservable heterogeneity and the country's peculiar characteristics. As such, any attempt to explain the role of trade liberalization and institutions on economic growth of these selected SSA countries that does not recognize these sources of endogeneity may be biased. Thus, trade liberalization and institutions variables will be instrumented for.

However, the problem of endogeneity that is often associated with the use of panel data is resolved in this study by the choice of the System GMM Estimator

to estimate the relationship between trade liberalization, institutions and economic growth. This econometric technique not only eliminates any bias that may arise from ignoring dynamic endogeneity, but also provides theoretically based and powerful instruments that accounts for simultaneity while eliminating any unobservable heterogeneity. Dynamic panel data estimation is most useful in situations where some unobservable factor affects both the dependent variable and the explanatory variables, and some explanatory variables are strongly related to past values of the dependent variable (Okodua, 2010). This is likely to be the case in regressions of trade liberalization and institutions on economic growth.

In the presence of heteroskedasticity and serial correlation, the two-step System-GMM uses a consistent estimate of the weighting matrix, taking the residuals from the one-step estimate (Davidson and Mackinnon, 2004). Though asymptotically more efficient, the two-step GMM presents estimates of the standard errors that tend to be severely downward biased. However, it is possible to solve this problem using the finite-sample correction to the two-step covariance matrix derived by Windmeijer (2005), which can make two-step robust GMM estimates more efficient than one-step robust ones, especially for System-GMM (Roodman, 2009).

As emphasized by Bun and Windmeijer (2009), the good performance of the System-GMM estimator relative to the Differenced-GMM estimator in terms of finite sample bias and root mean square error, has made it the estimator of choice in many applied panel data settings. In multivariate dynamic panel models, the System-GMM estimator is also known to perform better than the Differenced-GMM when series are persistent and there is a dramatic reduction in the finite sample bias due to the exploitation of additional moment conditions (Blundell, Bond and Windmeijer, 2000). Bond, Hoeffler and Temple (2001) provide a useful insight in the GMM estimation of dynamic panel data models, arguing that the

pooled OLS and FE technique estimators should be considered as the upper and lower bound respectively. As a result, whether the Differenced-GMM coefficient is close to or lower than the within group one; this is likely a sign that the estimates are biased downward (maybe because of a weak instrument problem). Hence, if this is the case, the use of System-GMM is highly recommended and its estimates should lie between pooled OLS and Fixed Effects LSDV. The good performance of the System-GMM estimator relative to the Differenced-GMM estimator in terms of finite sample bias and root mean square error,

In view of the good performance of the System-GMM estimator as enunciated by Blundell and Bond's (1998), in their extended version of the GMM estimator analysis (also called the System-GMM estimator) in overcoming complications that may arise from efforts to estimate the usual linear dynamic panel data models, this estimator was considered appropriate and applied to estimate the specified model in this study.

However, the properties of GMM estimator include:

i) Unbiasedness: The expected value of $\widehat{\theta}$ is equal to the true θ, that is $E(\widehat{\theta}) = \theta$ or $E(\widehat{\theta}) - \theta = 0$;

ii) Minimum Variance: $\widehat{\theta}_1$ is said to be a minimum variance estimator of θ if the variance of $\widehat{\theta}_1$ is smaller than or at most equal to the variance $\widehat{\theta}_2$, which is any other estimator of θ;

iii) Best Unbiased or Efficient Estimator: If $\widehat{\theta}_1$ and $\widehat{\theta}_2$ are two unbiased estimators of θ, and the variance of $\widehat{\theta}_1$ is smaller than or at most equal to the variance $\widehat{\theta}_2$, then $\widehat{\theta}_1$ is a best unbiased estimator;

iv) Linearity: An estimator $\widehat{\theta}$ is said to be a linear estimator of θ if it is a linear function of the sample observations. Thus, the sample mean

defined as; $\bar{X} = \frac{1}{n}\sum X_i = \frac{1}{n}(x_1 + x_2 + ... + x_n)$ is a linear estimator because it is a linear function of the X values;

v) Best Linear Unbiased Estimator (BLUE): If $\hat{\theta}$ is linear, unbiased and best estimator of θ, then it is BLUE;

vi) Minimum Mean-Square-Error (MSE) Estimator: The MSE of an estimator $\hat{\theta}$ is defined as $\text{MSE}(\hat{\theta}) = E(\hat{\theta} - \theta)^2$;

vii) Asymptotic unbiasedness: An estimator $\hat{\theta}$ is said to be an asymptotically unbiased estimator of θ if $\lim_{n \to \infty} E(\hat{\theta}_n) = \theta$; and

viii) Consistency: $\hat{\theta}$ is said to be a consistent estimator if it approaches the true value θ as the sample size gets larger and larger (Gujarati and Porter, 2009).

4.3.3 Data Sources and Measurements

The data for this study were obtained from secondary sources and these include the World Development Indicators published by the World Bank, International Labour Organization (ILO) database, Freedom House and Fraser Institute. The growth rate of gross domestic product (Grgdp), gross fixed capital formation (Gkap), initial value of GDP (Gdpini), degree of trade openness (Open), primary and secondary school enrolment - proxy for human capital (Hkap), taxes (proxied by tax revenue as a percentage of GDP), natural resource endowment (proxied by the share of fuel in total exports) were sourced from the World Development Indicators (WDI) of the World Bank while employment to population ratio (Lab) – proxy for labour was sourced from the ILO database. Political institutions indicator was sourced from the Fraser Institute and Freedom House, economic institutions indicator was sourced from International Country Risk Guide (ICRG)

and Doing Business database. However, Table 4.1 shows the brief descriptions of the variables in equation (4.14).

Table 4.1: Description of Variables and their Measurements

S/N	Name	Symbol	Definition/Description	Measurement
1.	Growth rate of real GDP.	Grgdp	Annual percentage change in the value of real GDP.	Percentage
2.	Initial level of GDP	Gdpini	This refers to the monetary value of the final goods and services produced in a country within a year when valued at current prices.	Dollars (million)
3.	Trade Openness.	Open	This is the extent to which a country is open to trade, openness promotes trade. It is measured as {(X+M/Y, where X is exports, M is imports and Y is GDP}.	Ratio
4.	Gross Fixed Capital Formation.	Gkap	Capital invested on fixed assets, infrastructural and social amenities in an economy.	Dollars (million)
5.	Proportion of Labour Force employed.	Lab	This is the proportion of the working-age population that is employed. That is, employment to population ratio.	Ratio
6.	Human Capital	Hkap	Education is used as a proxy for human capital. This refers to the ability of the citizens to be able to read and write through the attendance of institutions of learning. The more educated the people of a country is, the better the country. Primary and secondary school enrolment are used as proxies.	Enrolment (million)
7.	Natural Resource Endowment	Nare	This refers to the natural resource a country is endowed with. This is proxied by the share of fuel (oil) in total export.	Percentage
8.	Ethnic Tension	Ethsion	This is an indicator of ethnic fractionalization. It is measured on a scale of 0-6, with higher values implying lower ethnic tension. It tends to be high in countries with high fractionalization.	Indices
9.	Taxes	Taxes	These take the form of royalties levied by the government of a country on organizations for the exploration of natural resources.	Dollars (million)
10.	Political Rights	Polrig	Political Rights measures the extent to which a country's citizens are able to participate in selecting their government as well as freedom of association. This is a proxy for political institutions.	Indices
11.	Repudiation Risk	Reprisk	This measures contract enforcement between private citizens. It is a proxy for contracting institutions - a measure of economic institutions.	Indices

Source: Author's Compilation, 2013.

CHAPTER FIVE

DATA ANALYSES AND INTERPRETATIONS

5.1 Introduction

This chapter presents the empirical results for the study. The chapter begins with the descriptive analyses of the trend on the growth rates of the regions of the world. The estimation was done using STATA 11.0 software package. The growth model that analyzed the impact of trade liberalization and institutions on economic growth in the selected SSA countries was estimated and the results are presented. The chapter also provides some robustness and sensitivity checks in order to ensure that the estimated results are reliable.

5.2 Preliminary Analyses

The preliminary analyses comprised the computation of the mean and standard deviation values for the variables and the correlation between the variables. As mentioned in chapter one in the scope of the study, the number of SSA countries included in the analyses is thirty. The list of countries is provided in Table A1.2 which contains each country's identifier as used in the estimation. The period covered was 1985 to 2012. The choice of the countries used and period covered were based on data availability.

Table 5.1 shows the growth rates of GDP in regions of the world for 1985, 1990, 1995, 2000, 2010, 2011 and 2012 respectively. It is observed that the Sub-saharan Africa (SSA) witnessed the fourth lowest growth rate among the regions as against East Asia with the highest growth rate in 2010. But in 2012, SSA had the fifth highest growth rate behind East Asia which had the highest figure. In 2010, world GDP was -1.1 percent. The economic slowdown was global in the sense that growth declined in every region of the world because of the aftermath of the global economic meltdown in comparison to 2005. While the developed

economies, Central and Southern Europe as well as Latin America and the Caribbean economies experienced actual recessions, the rest of the world experienced lower, but positive growth rates. The highest growth rates were accomplished in East Asia (6.1 percent) and South Asia (5.0 percent) in 2010. It is also evident that the North African countries' average growth rates are higher than that of the SSA countries for the period under review except for year 2005 when the growth rates were the same.

Table 5.1: Real GDP Growth Rates (%) in selected Regions

	1985	1990	1995	2000	2005	2010	2011	2012
World	2.2	2.7	3.1	6.0	5.2	-1.1	-1.4	-2.2
Developed Economies And EU	1.3	1.5	1.7	2.8	2.6	-3.5	-3.8	-4.3
Central and South Eastern Europe	2.7	3.0	3.3	5.6	7.6	-6.5	-7.1	-7.4
East Asia	6.4	7.2	8.1	9.4	11.2	6.1	7.2	7.9
South East Asia and the Pacific	3.9	4.3	4.5	5.3	6.5	0.5	1.1	1.8
South Asia	3.2	3.6	3.9	6.1	8.7	5.0	5.7	6.2
Latin America and the Caribbean	2.4	2.7	3.0	4.3	5.7	-2.5	-3.2	-3.5
Middle East	3.1	3.3	3.8	5.1	6.1	1.4	1.9	2.3
North Africa	2.3	2.6	3.0	4.5	5.8	3.7	3.9	4.3
SSA	2.1	2.5	2.8	4.1	5.8	1.2	1.7	2.1

Source: World Bank, 2012**.**

5.2.1 Descriptive Statistics of the Variables Used in the Models

The descriptive statistics of the variables used in the models for this study are as presented in Tables 5.2 and 5.3. The mean values of the growth rate of GDP (Grgdp), degree of openness (Open) and repudiation risk (Reprisk) for the selected SSA countries are 4.44 percent, 0.07 and 3.32 units respectively. From the mean values of these variables, it can be seen that SSA countries indicators are quite low when compared to those of the developed countries with an average of 7.81 percent, 6.98 and 9.89 units (as presented in Table 5.3) respectively. In Table 5.2, the mean values of Gkap, Ssenr, Psenr, Lab, Taxes and Nare were 5.71,

28.68, 90.06, 66.26, 16.66 and 18.21, all in percentages respectively, with the exception of Ssenr, Psenr and Lab with high mean values, Gkap, Ssenr, Taxes and Nare have relatively low mean values which is an indication that these variables do not contribute much to economic growth. With respect to the economic institutions' variable, the mean value of repudiation risk (Reprisk) is 3.32 units. This value falls below the value of the developed economies and European Union (9.89 units as presented in Table 5.3). By the same token, the political institutional variable had mean values of 4.74 units for Political rights (Polrig). This value is on the low side as well, compared to 9.67 units for political rights (Polrig) in the developed countries.

Table 5.2: Descriptive Statistics of the Variables for the selected SSA Countries

Variables	Measurement	Mean	Std. Dev.
Dependent			
Growth rate of GDP(Grgdp)	Percentage	4.44	6.75
Macroeconomic			
Initial level of GDP (Gdpini)	Dollars (million)	4.12	6.45
Gross Fixed Capital Formation (Gkap)	Dollars(million)	5.71	6.62
Secondary school enrolment (Ssenr)	Enrolment (million)	28.68	19.32
Primary school enrolment (Psenr)	Enrolment (million)	90.06	29.25
Employment to population ratio (Lab)	Ratio	66.26	12.54
Economic Institution Variable			
Repudiation Risk (Reprisk)	Index	3.32	0.95
Political Institution Variable			
Political Rights (Polrig)	Index	4.74	1.61
Cultural Institution Variable			
Ethnic tensions (Ethsion)	Index	51.64	1383.86
Trade Liberalization			
Degree of Openness (Open)	Ratio	0.07	0.39
Other Variables			
Taxes	Dollars (million)	16.66	7.72
Natural Resource Endowment (Nare)	Percentage	18.21	32.17

Source: Computed by the Author, 2013.

Table 5.3: Comparison of Mean Values of Variables in selected Regions

Regions	Growth rate of GDP	Degree of Openness	Repudiation Risk	Political Rights	Ethnic Tension
Developed Economies and EU	7.81	6.98	9.89	9.67	38.92
Central and South Eastern Europe	7.64	5.72	9.65	9.59	38.87
East Asia	6.51	5.49	9.54	8.60	40.42
South East Asia and the Pacific	6.32	4.87	8.45	8.41	40.54
South Asia	6.13	4.56	8.92	7.56	42.96
Latin America and the Caribbean	5.58	4.38	6.87	6.92	39.86
Middle East	6.72	4.62	5.87	6.32	47.54
North Africa	5.14	2.85	4.53	5.12	50.97
SSA	4.44	0.07	3.32	4.74	51.64

Source: Author's Computation, 2013.

Table 5.4 shows the descriptive statistics of variables for the sub-regional groupings. The study classified the selected SSA countries into West Africa, Central Africa as well as East and Southern Africa sub-regions. Recall that we have thirty sampled SSA countries in this study. The West African sub-region comprises of Benin, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Niger, Nigeria and Senegal. The Central African sub-regional countries are Angola, Burundi, Cameroon, Chad, Congo, Equatorial Guinea, Gabon and Rwanda. The third group consists of countries that fall under the East and Southern African sub-region, these countries include Botswana, Djibouti, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, South Africa, Sudan, Swaziland, Tanzania, Uganda and Zambia. This classification was done in order to be able to compare the results across sub-regions of SSA.

In Table 5.4, the descriptive statistics of the variables across the sub-regions in SSA are as presented based on the groupings above. The results show that the mean values of Grgdp in East and Southern Africa was the highest, followed by that of Central Africa and then West Africa with 5.44, 4.15 and 3.87 percent respectively. The mean value of Open (trade liberalization variable) for East and Southern Africa is the highest at 0.24 percent while that of Central African countries was the lowest at 0.16 percent. For Ethsion (proxy for cultural

institutions), West Africa has the highest mean value while that of Central Africa is the lowest at 3.67 units. The mean values of Psenr, Gkap and Lab were the highest at 92.04, 2.88 and 68.43 percent respectively for East and Southern Africa. The mean values of Gkap (in West Africa), Ssenr, Psenr and Lab (in Central Africa) were the lowest at 1.14, 27.14, 85.88 and 66.53 percent respectively. In the same vein, the economic institutional variable – Reprisk has the highest mean value of 3.58 units in Central Africa while West Africa has the lowest value of 3.30 units. For the political institutional variable - Polrig, East and Southern Africa had the highest mean value of 9.87 units while Central Africa had the lowest mean value of 6.14 units. Also presented in the results are the mean values of the other variables, East and Southern Africa had the highest mean value of 9.49 percent for natural resource endowment (Nare) while West Africa had the lowest value with 9.07 percent for Nare. For Taxes, East and Southern Africa had the highest mean value while West Africa had the lowest mean value.

In summary, we can deduce that East and Southern Africa experienced a higher mean value of the growth variable because averagely the sub-region had 5.44 percent, as against 3.87 percent for West Africa and 4.95 percent for Central Africa in the mean values of the variables. This is probably due to the fact that the East and Southern African countries are open to trade and they tend to gain more from trade liberalization. This is also evidenced from the fact that the quality of their institutions tend to be better than the other two sub-regions (that is, West African and Central African countries). The discrepancy in the number of observations as revealed in Table 5.4 stems from the fact that there are more countries in the East/Southern Africa sub-region than the other two countries.

Table 5.4: Descriptive Statistics of the Variables for Sub-regional Classification

Variables	Measurement	West Africa Sub-region			Central Africa Sub-region			East and Southern Africa		
		Mean	Std.Dev.	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.	Obs.
Growth rate of GDP (Grgdp)	Percentage	3.87	3.80	224	4.15	5.61	224	5.44	9.94	392
Initial level of GDP (Gdpini)	Dollars (million)	3.30	3.71	224	4.21	5.67	224	5.41	9.88	392
Gross Fixed Capital Formation (Gkap)	Dollars (millions)	1.14	1.09	224	1.58	1.03	224	2.88	2.20	392
Secondary School enrolment (Ssenr)	Enrolment (million)	32.41	17.02	224	27.14	21.59	224	24.03	16.30	392
Primary School enrolment (Psenr)	Enrolment (million)	88.38	26.53	224	85.88	26.55	224	92.04	33.82	392
Employment to population ratio (Lab)	Ratio	63.91	10.85	224	66.53	15.56	224	68.43	10.17	392
Economic Institutions:										
Repudiation Risk (Reprisk)	Index	3.30	0.78	224	3.58	0.99	224	3.35	1.05	392
Political Institutions:										
Political Rights (Polrig)	Index	7.63	3.18	224	6.14	2.44	224	9.87	6.35	392
Cultural Institutions:										
Ethnic tensions (Ethsion)	Index	3.98	0.40	224	3.67	0.45	224	3.88	0.93	392
Trade Liberalization:										
Degree of Openness (Open)	Ratio	0.14	0.40	224	0.16	0.35	224	0.24	0.37	392
Other Variables:										
Taxes	Dollars (million)	1.15	0.74	224	1.27	0.84	224	2.80	0.97	392
Natural Resource endowment (Nare)	Percentage	9.07	1.47	224	9.35	1.52	224	9.49	1.58	392

Source: Computed by the Researcher, 2013.

5.2.2 Correlation between the Variables

In order to check for the possibility of multicollinearity among explanatory variables, there is a need to examine the correlation between the explanatory variables. Correlation gives an indication of the degree of relationship between variables. There is positive correlation between two variables when an increase in one brings about an increase in the other, otherwise, the correlation is negative. This is carried out to verify the extent of relationship between the explanatory variables. Correlation takes values between -1 and +1. For perfect

negative correlation, the correlation coefficient is -1 while for perfect positive correlation it is +1. From Table 5.5, all the variables have either low or negative correlation with one another. But lssenr and lgdpini; lpsenr and lssenr; lssenr and lgkap; lgkap and lgdpini with moderately high correlation coefficients of 0.3068, 0.5980, 0.3951 and 0.5049 respectively. This implies that there is no multicollinearity among the variables so we can proceed with the estimations of the equations.

Table 5.5: Correlation matrix of the log of the explanatory variables in the model

	Lgdpini	Lgkap	Lssenr	Lpsenr	Llab	Lopen	lethsion	Lreprisk	Lpolrig	Ltaxes	Lnare
Lgdpini	1.0000										
Lgkap	0.5049	1.0000									
Lssenr	0.3068	0.3951	1.0000								
Lpsenr	0.1898	0.3034	0.5980	1.0000							
Llab	-0.3532	-0.3428	-0.5776	-0.1384	1.0000						
Lopen	-0.1379	0.0501	0.3634	0.2713	-0.1006	1.0000					
Lethsion	-0.0616	-0.0375	0.0238	0.0850	0.1730	-0.0499	1.0000				
Lreprisk	0.3064	0.2643	0.1135	-0.0089	-0.1596	-0.0485	-0.0682	1.0000			
Lpolrig	-0.0027	-0.0813	-0.3351	-0.1778	0.2239	-0.1470	-0.0779	0.0084	1.0000		
Ltaxes	0.0271	0.1128	0.3564	0.2183	-0.3959	0.2505	-0.0272	-0.1190	-0.3402	1.0000	
Lnare	0.4619	0.4725	0.2639	0.2670	-0.1733	0.2924	-0.0177	0.1941	0.0727	0.0064	1.0000

Source: Calculated by the Author, 2013.

In addition, the Variance Inflation Factor (VIF) test for multicollinearity was carried out and the results are presented in Table 5.6, the results showed that all the variables have VIF values less than 10 and 1/VIF greater than 0.10 which is the ideal condition for the relative absence of multicollinearity among variables. Thus, the result reported in Table 5.6 shows that there is no multicollinearity among the explanatory variables. The results from the correlation matrix and the VIF as presented in Tables 5.5 and 5.6 complement each other in this respect.

Table 5.6: Variance Inflation Factor (VIF) Test for Multicollinearity

Variable	VIF	1/VIF
Lgdpini	7.86	0.127304
Lgkap	7.16	0.139653
Lssenr	3.00	0.333472
Llab	2.07	0.482090
Lpsenr	1.85	0.539610
Lopen	1.70	0.586649
Lnare	1.62	0.618734
Ltaxes	1.43	0.696948
Lpolrig	1.25	0.798747
Lreprisk	1.16	0.864173
Lethsion	1.08	0.923953
Mean VIF	2.74	

Source: Calculated by the Author, 2013.

5.3 Estimation Results

In this section, the results of the various estimations carried out are presented and interpreted.

5.3.1 Diagnostic Tests of Results

With the data set in this study, three analytical methods were used and these are:

- (i)   Pooled OLS Technique
- (ii)   Fixed Effects LSDV Technique
- (iii)   Random Effects Technique

In order to verify which of these techniques is appropriate for the analysis in this study, the three possible techniques were subjected to the Hausman test to ensure that the models are devoid of any correlated random cross-sectional effects. However, this study used the FE technique. The underlying hypothesis formulated in order to determine whether to use Fixed Effect or Random Effect is specified as:

H_0: $var(b) = var(B) \Rightarrow$ there is no correlated random effect.

H_1: $var(b) \neq var(B) \Rightarrow$ there is correlated random effect.

Var(b) and Var(B) refer to the variances of the fixed effect and random effect respectively. The null hypothesis states that there is no correlated random effect which suggests that random effect estimates are better than those of fixed effect; while the alternative hypothesis states that there is correlated random effect which suggests that fixed effect estimates are better than those of random effect in this study.

However, the estimate of the diagnostic test (Chi-sq = 5.63, Prob = 0.0008) showed that the null hypothesis is rejected at 1 percent significant level. Thus, there is no correlated random effect in the model. Hence, we conclude that the fixed effect model significantly perform better than the random effect as seen in Table 5.7. This indicated that the results from Fixed Effects (FE) were more efficient than that of Random Effects (RE). At any rate, given the fact that the study had the interest of obtaining country fixed effects that were relevant in the second aspect of the estimation, it would have still been appropriate to make a choice in favour of FE. Table 5.7 shows the results of the Hausman specification test carried out in order to determine which of the fixed effects or random effects is more appropriate to use in this study. The results support the use of the fixed effects since we reject the null hypothesis that states that there is correlated random effect. In summary, diagnostic tests show that there is no random effect; we thus adopt the results from the fixed effect model as basis for the interpretation of the relationship between the dependent variable and independent variables in the model.

Table 5.7: Hausman Specification Test

	Coefficients		
	(b)	(B)	(b-B)
	FE	RE	Difference
lgdpini	-0.3432096	-0.3287435	-0.0144661
lgkap	0.3581586	0.3630029	-0.0048443
lssenr	-0.1031496	-0.0765512	-0.0265984
lpsenr	0.2130704	0.2293822	-0.0163118
llab	0.0479995	0.1783024	-0.1303029
lopen	-0.1290892	-0.1018618	-0.0272273
lethsion	-0.3481124	-0.3592369	0.0111246
lreprisk	0.0879661	0.1198021	-0.031836
lpolrig	-0.1203411	-0.1522454	0.0319043
ltaxes	-0.1139865	-0.1117163	-0.0022702
lnare	-0.0422849	-0.0430707	0.0007858

$\chi^2 = 5.63$ (0.008)

Source: Calculated by the Author.

5.3.2 Discussion of Results

The estimation process, which involved the fitting of the formulated model in the previous chapter into data, was carried out in two main aspects. The first aspect of the process started with the estimation of Least Square Dummy Variable (LSDV). The results from the second aspect of the estimation process using the Generalized Method of Moments (GMM) technique as formulated in chapter four are presented afterwards. Equation (4.14) which is the growth/institutions/trade liberalization model specified in chapter four was estimated. This equation contained institutional and trade liberalization variables that influence economic growth. But before these analyses were carried out, the panel unit root tests were carried out in order to test if the variables in the growth model (equation 4.14) specified in chapter four are stationary or non-stationary.

The results are presented in Table 5.8. The results in Table 5.8 reveal that all the variables except contract intensive money (CIM) used in the growth model are statistically significant at 1 percent. CIM is statistically significant at 5 percent. Therefore, we reject the null hypothesis that states that all panels contain unit roots. This

means that there are no unit roots in the panels of this study, therefore, this implies that at least one panel is stationary. The implication of this is that the variables are stationary which means that the results obtained from this study is not only possible for the present time period but can also be generalized for other time periods. In addition, this means that the results obtained from this study are not spurious.

Table 5.8: Augmented Dickey Fuller (ADF) Unit Root Test Results at Levels

Variables	Chi-squared Statistic	Remark
Lngrgdp	206.02^{***} (0.0000)	Stationary
Lngdpini	210.01^{***} (0.0000)	Stationary
Lngkap	142.09^{***} (0.0034)	Stationary
Lnssenr	132.43^{***} (0.0086)	Stationary
Lnpsenr	123.02^{***} (0.0000)	Stationary
Lnopen	181.09^{***} (0.0002)	Stationary
Lnethsion	244.47^{***} (0.0000)	Stationary
Lnreprisk	128.87^{***} (0.0012)	Stationary
Lnpolrig	89.61^{***} (0.0084)	Stationary
Lntaxes	88.23^{***} (0.0074)	Stationary
Lnnare	166.12^{***} (0.0000)	Stationary
Lnecofre	197.06^{***} (0.0017)	Stationary
Lncim	84.02^{**} (0.0143)	Stationary
Number of panels	30	
Number of periods	26	

Source: Estimated by the Author. Probability values are displayed in parentheses beside the chi-squared coefficients.

Note: *** - significant at 1 percent, ** - significant at 5 percent.

Equations (4.17), (4.18), (4.19), (4.20) and (4.21) in chapter four were estimated to obtain the results in Tables 5.9 and 5.10. The estimated model is the growth/institutions/trade liberalization equation. The estimations were carried out one after the other or one by one. That is, the growth model was estimated in such a

way that the impacts of trade liberalization, economic, political and cultural institutions were examined in succession one at a time to find the individual impact on economic growth. Equation (4.17) was estimated in order to examine the impact of trade liberalization on economic growth and the results are presented in regression I, then equation (4.18) was estimated in order to examine the impact of economic institutions on economic growth and the results are presented in regression II; then equation (4.19) was estimated in order to examine the impact of political institutions on economic growth, the results are presented in regression III. Thereafter, equation (4.20) was estimated in order to examine the impact of cultural institutions on economic growth, the results are presented in regression IV and lastly; equation (4.21) was estimated in order to examine the impact of the three institutions on economic growth, the results are presented in regression V.

The results in Table 5.9 reveal that there is an improvement in the values of the adjusted R^2 for LSDV than that of the pooled OLS. The adjusted R^2 measures the percentage variation of the dependent variable explained by the independent variables. The results also showed that the adjusted R^2 are 0.1722, 0.1724 and 0.1843 for regressions I, II and III respectively. This suggests that the explanatory variables in the model explain about 17.22 percent, 17.24 percent and 18.43 percent variations in the dependent variable, Grgdp. The F-stat. probability results showed that they are 0.0000, meaning that it is significant at 1 percent. This implies that the model is robust, that is, all the independent variables jointly explain the dependent variable. However, the low adjusted R^2 is not unexpected in cross sectional data.

The results in Table 5.9 reveal that Psenr and Ssenr (primary and secondary school enrolment - proxies for human capital) are statistically significant at 5 percent in regression I but in regression III, only primary school enrolment is statistically significant at 5 percent. The coefficients of both Psenr and Ssenr are inelastic, that is, the coefficients of Psenr and Ssenr measuring the elasticities are less than one in

absolute values in regressions I, II and III: this implies that a one percent change in Psenr and Ssenr brings about a less than one percent change in economic growth. The gross fixed capital formation (Gkap) is statistically significant at 1 percent in regressions I, II and III. It can be deduced from this result that the better the state of education in a country, the higher the level of growth in the country. The coefficients of Gkap measuring the elasticities are less than one in absolute values in regressions I, II and III: this implies that a one percent change in the stock of capital brings about a less than one percent change in economic growth. In addition, Psenr, Ssenr and Gkap are positively related to economic growth.

As regards employment to population ratio (Lab) is statistically significant at 5 percent in regressions I and II. However, the coefficients of labour are inelastic, that is, the coefficients of Lab measuring the elasticities are less than one in absolute values: this implies that a one percent change in labour brings about a less than one percent change in economic growth. It is observed in a country that when a high number of the population is employed, aggregate output increases and this boosts economic growth. With respect to the initial level of GDP (Gdpini), it is statistically significant at 1 percent. From theoretical literature, it is expected that the previous level of growth is lower than current growth level, that is, a country is expected to experience better growth than the previous year. In addition, the coefficients of Gdpini measuring the elasticities are less than one in absolute values in regressions I, II and III: this implies that a one percent change in Gdpini brings about a less than one percent change in economic growth.

Considering Polrig (political rights – proxy for political institutions) in regression III, it is observed from the results in Table 5.9 that it is statistically significant at 1 percent. The implication of this result is that political institutions do have a statistically significant influence on economic growth in the selected SSA countries. The political situation in a country has a lot to do with economic

growth, the better the style of governance in a country, the higher the level of growth in the country. A country that is politically stable will attract foreign investments and will have a say in the international community. This probably explains why the developed countries, for example, the United States of America, France and Germany are always in the forefront in the international scene. Some of these SSA countries have not had good governance and this have affected their growth adversely. This means that a lot still needs to be done to reduce the rate of political instability predominant in some of these SSA countries, for example Sudan, Mali. This can hinder trade liberalization and growth if not addressed. Also, the coefficient of Polrig measuring the elasticity is less than one in absolute value: this implies that a one percent change in Polrig brings about a less than one percent change in economic growth.

The results for Reprisk - the proxy for economic institutions were also presented in Table 5.9. The coefficient of Reprisk is inelastic, that is, its coefficient measuring the elasticity is less than one in absolute value: this implies that a one percent change in Reprisk brings about a less than one percent change in economic growth. The result also showed that economic institutions do not have a significant impact on economic growth in these SSA countries. The implication of this is that the SSA countries need to improve on the state of their economies since a conducive economic environment boost economic growth. From theoretical literature, it is expected that economic institutions have a positive impact on economic growth.

Table 5.9: Results of the Trade Liberalization/Growth Equation

DEPENDENT VARIABLE – MEASURE OF ECONOMIC GROWTH (Grgdp)						
VARIABLE	REGRESSION I		REGRESSION II		REGRESSION III	
	LSDV	Pooled OLS	LSDV	Pooled OLS	LSDV	Pooled OLS
lGdpini	-0.407*** [3.65] (0.000)	-0.323*** [4.98] (0.000)	-0.406***[3.64] (0.000)	-0.330*** [5.06] (0.000)	-0.408*** [3.69] (0.000)	-0.315*** [4.84] (0.000)
lGkap	0.453*** [6.51] (0.000)	0.372*** [6.12] (0.000)	0.446*** [6.37] (0.000)	0.373*** [6.14] (0.000)	0.489*** [7.01] (0.000)	0.363*** [5.96] (0.000)
lSsenr	0.192** [2.07] (0.024)	0.085* [1.93] (0.063)	0.182* [1.99] (0.051)	0.088** [1.98] (0.046)	0.299* [1.87] (0.062)	0.110* [1.94] (0.051)
lPsenr	0.440** [1.99] (0.050)	0.216* [1.80] (0.072)	0.434* [1.94] (0.053)	0.225* [1.87] (0.062)	0.473** [2.12] (0.034)	0.221* [1.85] (0.065)
lLab	0.719** [2.25] (0.018)	0.011* [1.75] (0.060)	0.689** [2.02] (0.036)	0.011* [1.75] (0.061)	0.645* [1.88] (0.059)	0.012* [1.96] (0.055)
lOpen	0.094* [1.79] (0.085)	0.082* [1.68] (0.081)	0.099* [1.98] (0.058)	0.078*** [2.29] (0.004)	0.214** [2.10] (0.018)	0.179* [1.85] (0.095)
lReprisk	-		0.117* [1.91] (0.065)	0.131* [1.87] (0.084)	-	-
lPolrig	-		-		0.351*** [3.38] (0.001)	0.140* [1.72] (0.086)
lEthsion	-		-		-	-
lTaxes	0.077* [1.74] (0.089)	0.097* [1.92] (0.064)	0.071** [2.09] (0.020)	0.086** [2.08] (0.029)	0.187* [1.79] (0.096)	0.133** [2.09] (0.037)
lNare	0.036* [1.98] (0.057)	0.047*** [3.27] (0.001)	0.036* [1.98] (0.058)	0.048*** [3.34] (0.001)	0.031*** [2.63] (0.003)	0.043*** [3.07] (0.002)
Constant	3.362** [2.65] (0.014)	0.573* [1.83] (0.067)	3.198** [2.02] (0.035)	0.407* [1.70] (0.062)	0.315* [1.88] (0.098)	0.927* [1.89] (0.091)
R^2	0.2154	0.077	0.2163	0.079	0.2281	0.081
Adjusted R^2	0.1722	0.068	0.1724	0.067	0.1843	0.069
F-stat	4.99 (0.000)	7.36 (0.000)	4.88 (0.000)	6.67 (0.000)	5.23 (0.000)	6.88 (0.000)
Country Dummy	Yes	No	Yes	No	Yes	No
Countries	30	30	30	30	30	30
Number of Observations	713	713	713	713	713	713

Source: Estimated by the Author. **Notes:** Regression I are the results for trade liberalization and economic growth; regression II are the results for economic institutions and economic growth; regression III are the results for political institutions and economic growth respectively. Absolute *t* statistics are displayed in parentheses beside the coefficient estimates while probability values are in brackets under the coefficient estimates. * - significant at 10 percent; ** - significant at 5 percent; *** - significant at 1 percent.

The results in regressions I, II and III in Table 5.9 reveal the impact of trade liberalization on economic growth. The results show that the degree of openness (the measure of trade liberalization) is statistically significant at 5 percent in regression III. In addition, the coefficients of the degree of trade openness (Open)

measuring the elasticities are less than one in absolute values in regressions I, II and III: this implies that a one percent change in the degree of openness brings about a less than one percent change in economic growth. Judging from the coefficients of the measure of trade liberalization (Open), it can be deduced that in the selected SSA countries, the impact of trade is not very pronounced on the economies of these countries since most of them are predominantly importing nations with little exports to other countries of the world.

As regards taxes, it has a positive impact on economic growth. The variable is statistically significant at 5 percent in regression II. The implication of this result is that the revenues generated from taxes needs to be invested into more economically viable projects which should be closely monitored in the selected SSA countries. Also, the coefficients of taxes measuring the elasticities are less than one in absolute values in regressions I, II and III: this implies that a one percent change in taxes brings about a less than one percent change in economic growth. As for natural resource endowment (Nare), the coefficients of Nare measuring the elasticities are less than one in absolute values: this implies that a one percent change in Nare brings about a less than one percent change in economic growth. In addition, it is statistically significant at 1 percent in regression III. From the results, as regards the coefficient estimates of this variable, the values of the coefficients are low which means that the governments of the selected SSA countries need to harness their natural resources fully so as to maximize their benefits to boost economic growth.

From the results in Table 5.9, it can be deduced from the results that political institutions play a significant role in determining the economic growth of the selected SSA countries because it is significant at 1 percent. However, there seem to be strong political institutions in the SSA countries than economic institutions (evident from the coefficients of 0.351 for Polrig and 0.117 for Reprisk in Table 5.9). This is because when there is political stability, economic activities take place more than when there

is no peace politically. Therefore, for countries to gain from international trade there should be strong institutions in place that will ensure that trading activities go on smoothly among nations of the world. It also revealed that SSA countries can only engage in free trade when they have political and ethnic peace in their economies; so as not to endanger the lives and investments of their trading partners. As regards the comparison of the LSDV and the Pooled OLS regression results, it is observed from the results in Table 5.9 that the LSDV results performed better than the pooled regression results in almost all parameter estimates (for example, Gkap, Psenr, Ssenr, Lab, Nare).

The results in Table 5.10 reveal that there is an improvement in the values of the adjusted R^2 for LSDV than that of the pooled OLS. The adjusted R^2 measures the percentage variation of the dependent variable explained by the independent variables. The results also showed that the adjusted R^2 are 0.1733 and 0.186 for regressions IV and V respectively (higher than 0.074 and 0.077 for the pooled OLS in regressions IV and V respectively). This suggests that the explanatory variables in the model explain about 17.33 percent and 18.6 percent variations in the dependent variable, Grgdp. The F-stat. probability results showed that they are 0.0000, meaning that it is significant at 1 percent. This implies that the model is robust, that is, all the independent variables jointly explain the dependent variable. However, the low adjusted R^2 is not unexpected in cross sectional data.

Table 5.10 reveals the regression results when the impact of cultural institutions on economic growth and the impact of the combination of economic, political and cultural institutions on growth were examined. The results are presented in regressions IV and V in Table 5.10 respectively. Equation (4.20) in chapter four was estimated to obtain the results in regression IV in Table 5.10. In terms of the impact of cultural institutions on economic growth, the coefficient of Ethsion measuring the elasticity is less than one in absolute value: this implies that a one percent change in Ethsion brings

about a less than one percent change in economic growth. Though, the result showed that Ethsion has a high coefficient but it is insignificant.

The implication of the high coefficient of Ethsion is that cultural institutions are important in affecting trading activities among countries; a country that has ethnic unrest will scare away foreign investors from investing in such a country. When investment falls, aggregate output falls, savings will also fall, aggregate income falls and hence there will be a low level of economic growth. Quite a number of reasons are attributed to the cause of ethnic unrests in some of these SSA countries, these reasons include; the issue of land disputes between villages and towns, religious clashes and crises that have the influence of external terrorist groups' sponsorship. For example, the 'Boko Haram' insurgency in Nigeria that have been causing havoc in the Northern part of the country for more than two years is believed to be receiving sponsorship from the renowned 'Al-Qaeda' terrorist sect, and this have reduced the rate of foreign investment in Nigeria. Although in most of these SSA countries, the role of cultural institutions have been given little attention because the government have not been able to offer a lasting solution to most of these ethnic unrests.

The results in Table 5.10 also reveal that the degree of openness - Open (measure of trade liberalization) is inelastic, that is, its coefficient measuring the elasticity is less than one in absolute value: this implies that a one percent change in the degree of openness (Open) brings about a less than one percent change in economic growth. Also, the coefficient estimate of Open is very low (about 0.075). The implication of this result is that trade liberalization have not had a noticeable impact on the level of economic growth in the selected SSA countries because most of these countries are predominantly import dependent on the advanced Western countries. The volumes of their exports are so low that revenue generated in form of foreign exchange is small when compared to the payments on imports.

Table 5.10: Results for Institutions/Growth Equation

Dependent Variable - Grgdp				
Variable	REGRESSION IV		REGRESSION V	
	LSDV	Pooled OLS	LSDV	Pooled OLS
Lgdpini	-0.416*** [3.73] (0.000)	-0.324*** [5.01] (0.000)	-0.418*** [3.82] (0.000)	-0.291*** [4.89] (0.000)
Lgkap	0.445*** [6.39] (0.000)	0.371*** [6.13] (0.000)	0.473*** [6.94] (0.000)	0.344*** [5.89] (0.000)
Lssenr	0.211* [1.73] (0.084)	0.042* [1.84] (0.090)	0.301* [1.89] (0.059)	0.097* [1.90] (0.096)
Lpsenr	0.432* [1.93] (0.054)	0.221* [1.85] (0.065)	0.457** [2.07] (0.039)	0.238** [1.99] (0.047)
Llab	0.706** [2.03] (0.026)	0.172* [1.92] (0.070)	0.634* [1.88] (0.063)	0.192** [2.11] (0.018)
Lopen	0.075* [1.96] (0.077)	0.097*** [2.28] (0.001)	-	-
Lreprisk	-	-	0.093* [1.73] (0.066)	0.141** [1.96] (0.048)
Lpolrig	-	-	0.338*** [3.35] (0.001)	0.165** [2.01] (0.044)
Lethsion	-0.843* [1.91] (0.090)	-0.332** [2.50] (0.013)	-0.732** [1.96] (0.048)	-0.348*** [2.62] (0.009)
Ltaxes	0.097* [1.88] (0.095)	0.085** [2.08] (0.028)	0.199* [1.81] (0.071)	0.131** [1.98] (0.039)
Lnare	0.038** [1.99] (0.046)	0.046*** [3.22] (0.001)	0.033* [1.81] (0.071)	0.050*** [3.86] (0.000)
Constant	0.145* [1.91] (0.060)	0.095** [1.97] (0.043)	0.118* [1.81] (0.080)	0.191* [1.84] (0.088)
R^2	0.2171	0.085	0.230	0.090
Adjusted R^2	0.1733	0.074	0.186	0.077
F-stat	4.91 (0.000)	7.28 (0.000)	5.17 (0.000)	6.98 (0.000)
Country Dummy	Yes	No	Yes	No
Countries	30	30	30	30
Number of Observations	713	713	713	713

Source: Estimated by the Author. **Notes:** Regression IV are the results for cultural institutions and economic growth; regression V are the results for institutions and economic growth. Absolute t statistics are displayed in parentheses beside the coefficient estimates while probability values are in brackets under the coefficient estimates. * - significant at 10 percent; ** - significant at 5 percent; *** - significant at 1 percent.

As regards the result of taxes in Table 5.10, its coefficient measuring the elasticity is less than one in absolute value: this implies that a one percent change in taxes brings about a less than one percent change in economic growth. In addition, the coefficient of the variable is low (about 9.7 percent). The implication of this result is that taxes do not have a significant impact on the level of economic growth in the selected SSA countries revenues generated which means that the governments of these SSA countries have to judiciously utilize the revenues from taxes by channeling the funds into economically viable projects. Considering the result of natural resource endowment (Nare), its coefficient is inelastic, that is, its coefficient measuring the elasticity is less than one in absolute value: this implies that a one percent change in Nare brings about a less than one percent change in economic growth. In addition, the coefficient estimate shows that it has about 3.8 percent impact on economic growth, this is very low. This implies that the governments of the selected SSA countries need to harness their natural resources fully so as to maximize their benefits to boost economic growth. However, it is statistically significant at 5 percent in regression IV.

In examining the impact of economic, political and cultural institutions on economic growth, equation (4.21) in chapter four was estimated to obtain the results in regression V in Table 5.10. The model contained only the institutional variables excluding the trade liberalization variable. The results showed that in terms of the magnitude of the coefficients, cultural institutions have a higher impact on economic growth than political and cultural institutions (73.2 percent, 33.8 percent and 9.3 percent for Ethsion, Polrig and Reprisk respectively). Thus, based on these results, it can be inferred that cultural institutions exert a greater impact on economic growth than political and economic institutions in the selected SSA countries. In addition, Polrig and Ethsion are statistically significant at 1 percent and 5 percent respectively. However, the three institutional variables are inelastic, that is, their coefficients measuring the elasticities are less than one in absolute values: this implies that a one

percent change in institutions brings about a less than one percent change in economic growth.

In addition, the results in regression V in Table 5.10 reveal that the institutional variables have significant impact on economic growth. However, comparing this result with that of regression I in Table 5.9, the adjusted R^2 for the impact of institutions on economic growth is higher than that of the impact of trade liberalization on economic growth with values of 0.186 and 0.1722 respectively. This implies that institutions exert more impact on economic growth than trade liberalization in the selected SSA countries. This implies that the selected SSA countries can experience higher growth rates when their institutions are strong. As earlier stated, these SSA countries have not been able to maximize the benefits from trade liberalization and this has affected their levels of growth adversely. In terms of the comparison of the LSDV and the Pooled OLS regression results in Table 5.10, the LSDV results performed better than the pooled regression results in almost all parameter estimates (for example, Gkap, Psenr, Ssenr, Lab, Ethsion, Taxes).

Equation (4.14) was estimated to obtain the results in Table 5.11. The estimated model is the growth/institutions/trade liberalization model. The results in Table 5.11 reveal that there is an improvement in the values of the adjusted R^2 for LSDV than that of the pooled OLS. The adjusted R^2 measures the percentage variation of the dependent variable explained by the independent variables. The results also showed that the adjusted R^2 are 0.184 and 0.078 for LSDV and the pooled OLS respectively. This suggests that the explanatory variables in the model explain about 18.4 percent variation in the dependent variable, Grgdp. The F-stat. probability results showed that they are 0.0000, meaning that it is significant at 1 percent. This implies that the model is robust, that is, all the independent variables jointly explain the dependent variable. However, the low adjusted R^2 is not unexpected in cross sectional data.

Table 5.11: Results for the Overall Growth Model

Dependent Variable - Grgdp		
Variable	LSDV	Pooled OLS
Lgdpini	-0.415*** [3.75] (0.000)	-0.322*** [4.95] (0.000)
Lgkap	0.476*** [6.75] (0.000)	0.362*** [5.98] (0.000)
Lssenr	0.304* [1.99] (0.059)	0.071* [1.91] (0.063)
Lpsenr	0.461** [2.07] (0.039)	0.237** [1.98] (0.048)
Llab	0.611* [1.75] (0.080)	0.209* [1.88] (0.080)
Lopen	0.023* [1.97] (0.067)	0.091** [2.41] (0.026)
Lreprisk	0.092* [1.92] (0.073)	0.132* [1.88] (0.081)
Lpolrig	0.342*** [3.29] (0.001)	0.164** [2.00] (0.045)
Lethsion	-0.744** [2.07] (0.044)	-0.362*** [2.71] (0.007)
Ltaxes	0.198* [1.86] (0.074)	0.114*** [2.27] (0.004)
Lnare	0.033* [1.91] (0.087)	0.044*** [3.04] (0.002)
Constant	2.069* [1.79] (0.098)	0.297** [1.92] (0.027)
R^2	0.230	0.092
Adjusted R^2	0.184	0.078
F-stat	5.02 (0.000)	6.46 (0.000)
Country Dummy	Yes	No
Countries	30	30
Number of Observations	713	713

Source: Estimated by the Author. **Notes:** Gkap, Lab, Ssenr and Psenr are proxies for employment to population ratio, capital or investment and human capital respectively. Absolute *t* statistics are displayed in parentheses beside the coefficient estimates while probability values are in brackets under the coefficient estimates. LSDV- Least Square Dummy Variable, OLS – Ordinary Least Square. * - significant at 10 percent; ** - significant at 5 percent; *** - significant at 1 percent.

The results in Table 5.11 reveal that Gkap (gross fixed capital formation), initial level of growth (Gdpini) and political rights (proxy for political institutions are statistically significant at 1 percent, while Psenr (primary school enrolment – proxy for human

capital) and ethnic tensions (proxy for cultural institutions) are statistically significant at 5 percent. In addition, all the coefficients of the explanatory variables are inelastic, that is, their coefficients measuring elasticities are less than one in absolute values: this implies that a one percent change in Gkap, Gdpini, Psenr and Ethsion brings about a less than one percent change in economic growth respectively. It can be deduced from the results that political and cultural institutions have statistically significant impact on economic growth in the selected SSA countries. This supports the empirical findings of Alonso and Garcimartin (2009) who opined that strong political and cultural institutions exert a negative impact on economic growth.

The initial level of GDP (Gdpini) according to theory has a negative relationship with economic growth. The implication of this is that, *ceteris paribus*, a country is expected to be experiencing higher growth rate every succeeding year. But this may not be totally true for the sampled SSA countries as some of them are not experiencing the growth they are supposed to, due to many militating factors such as economic and political insecurity, high inflation rate and so on. In addition, the degree of openness (the measure of trade liberalization), Ssenr (secondary school enrolment – proxy for human capital), repudiation risk (proxy for economic institutions), taxes, natural resource endowment, employment to population ratio (Lab) are not very significant. The result of taxes did not support the findings of Alonso and Garcimartin (2009), who believed that taxes have a significant impact on economic growth. The value of the coefficient of the trade liberalization variable buttressed the earlier assertion that trade have not contributed significantly to economic growth in the selected SSA countries due to the fact that most of these countries are predominantly importing nations with little exports to other countries of the world. In addition, the comparison of the LSDV and the pooled OLS regression results in Table 5.11 show the LSDV results performed better than the pooled regression results in almost all parameter estimates (for example, Gkap, Psenr, Ssenr, Lab, Polrig, Taxes).

Equations (4.22), (4.23) and (4.24) in chapter four were estimated to obtain the results in Table 5.12. The estimations were carried out one after the other. Equation (4.22) was estimated in order to examine the interaction effect between trade liberalization and economic institutions and the results are presented in regression I. Equation (4.23) was estimated in order to examine the interaction effect between trade liberalization and political institutions and the results are presented in regression II. And lastly equation (4.24) was estimated in order to examine the interaction effect between trade liberalization and cultural institutions and the results are presented in regression III.

The results in Table 5.12 reveal that there is an improvement in the values of the adjusted R^2 for LSDV than that of the pooled OLS. The adjusted R^2 measures the percentage variation of the dependent variable explained by the independent variables. The results also show that the adjusted R^2 are 0.171, 0.175 and 0.174 in regressions I, II and III for LSDV respectively. While the results of the pooled OLS are 0.067, 0.067 and 0.077 in regressions I, II and III respectively. This suggests that the explanatory variables in the model explain about 17.1, 17.5 and 17.4 percent variations in the dependent variable, Grgdp. The F-stat. probability results showed that they are 0.0000, meaning that it is significant at 1 percent. This implies that the model is robust, that is, all the independent variables jointly explain the dependent variable. However, the low adjusted R^2 is not unexpected in cross sectional data.

Table 5.12: Interaction Effect Estimation Results

DEPENDENT VARIABLE – MEASURE OF ECONOMIC GROWTH (Grgdp)						
VARIABLE	REGRESSION I		REGRESSION II		REGRESSION III	
	LSDV	Pooled OLS	LSDV	Pooled OLS	LSDV	Pooled OLS
lGdpini	-0.285*** [2.77] (0.006)	-0.239*** [4.15] (0.000)	-0.283***[2.75] (0.006)	-0.244*** [4.19] (0.000)	-0.293***[2.76] (0.006)	-0.264*** [4.21] (0.000)
lGkap	0.383*** [6.09] (0.000)	0.286*** [5.22] (0.000)	0.381*** [6.05] (0.000)	0.290*** [5.25] (0.000)	0.391***[6.06] (0.000)	0.294*** [5.26] (0.000)
lSsenr	0.293** [1.83] (0.068)	0.097* [1.69] (0.098)	0.284* [1.78] (0.076)	0.094** [2.25] (0.011)	0.294* [1.79] (0.077)	0.097** [2.26] (0.011)
lPsenr	0.477** [2.14] (0.033)	0.253**[2.12] (0.035)	0.469* [2.11] (0.036)	0.252** [2.11] (0.035)	0.489** [2.12] (0.038)	0.262** [2.14] (0.036)
lLab	0.256** [2.59] (0.021)	0.401*** [2.84] (0.001)	0.588*** [2.52] (0.001)	0.199*** [2.84] (0.003)	0.598*** [2.53] (0.002)	0.189*** [2.85] (0.003)
lOpen	0.033* [1.63] (0.094)	0.013** [2.19] (0.022)	0.060* [1.71] (0.092)	0.056* [1.74] (0.085)	0.062* [1.73] (0.093)	0.058* [1.76] (0.086)
lReprisk	0.047* [1.77] (0.088)	0.185* [2.11] (0.068)	0.124** [2.26] (0.037)	0.251** [2.23] (0.021)	0.134** [2.06] (0.038)	0.271** [2.24] (0.023)
lPolrig	0.347*** [3.45] (0.001)	0.189** [2.34] (0.019)	0.350*** [3.47] (0.001)	0.190** [2.35] (0.019)	0.360*** [3.48] (0.001)	0.194** [2.36] (0.019)
lEthsion	-0.792** [2.23] (0.020)	-0.357***[2.67] (0.008)	-0.816*** [2.27] (0.005)	-0.356*** [2.68] (0.008)	-0.826*** [2.28] (0.006)	-0.376*** [2.69] (0.009)
lTaxes	0.326* [2.54] (0.023)	0.122* [1.86] (0.075)	0.224** [2.53] (0.026)	0.118* [1.81] (0.090)	0.244** [2.34] (0.028)	0.128* [1.83] (0.092)
lNare	0.034** [1.80] (0.073)	0.049*** [3.52] (0.000)	0.033* [1.76] (0.080)	0.048***[3.52] (0.000)	0.043* [1.77] (0.080)	0.058*** [3.53] (0.000)
Open*Reprisk	-0.208** [2.65] (0.014)	-0.035* [1.90] (0.067)	-	-	-	-
Open*Polrig	-	-	0.207* [1.96] (0.092)	0.323** [2.03] (0.047)	-	-
Open*Ethsion	-	-	-	-	0.370* [1.74] (0.094)	0.252** [2.06] (0.048)
Constant	8.413** [2.09] (0.030)	2.116** [2.08] (0.033)	0.435** [2.09] (0.026)	2.157*** [2.11] (0.009)	0.445** [2.11] (0.028)	2.159*** [2.13] (0.008)
R^2	0.219	0.082	0.219	0.083	0.221	0.093
Adjusted R^2	0.171	0.067	0.175	0.067	0.174	0.077
F-stat	4.60 (0.000)	5.25 (0.000)	4.59 (0.000)	5.28 (0.000)	4.59 (0.000)	5.28 (0.000)
Country Dummy	Yes	No	Yes	No	Yes	No
No of Countries	30	30	30	30	30	30
Number of Observations	715	715	715	715	715	715

Source: Estimated by the Author. **Notes:** Regression I are the results for the interaction effect of trade liberalization and economic institutions; regression II are the results for the interaction effect of trade liberalization and political institutions; regression III are the results for the interaction effect of trade liberalization and cultural institutions respectively. * - significant at 10 percent; ** - significant at 5 percent; *** - significant at 1 percent.

The results in Table 5.12 also reveal that Gkap (gross fixed capital formation), initial level of growth (Gdpini) and political rights (proxy for political institutions) are statistically significant at 1 percent, while Ssenr and Psenr (secondary and primary school enrolments – proxies for human capital), ethnic tensions (proxy for cultural institutions), employment to population ratio (the measure of labour) and natural resource endowment are statistically significant at 5 percent in regression I. While the results in regressions II and III show that Gkap (gross fixed capital formation), initial level of growth (Gdpini), employment to population ratio (the measure of labour), political rights (proxy for political institutions), ethnic tensions (proxy for cultural institutions) are statistically significant at 1 percent, while repudiation risk (proxy for economic institutions) and taxes are statistically significant at 5 percent. In addition, Psenr is statistically significant at 5 percent in regression III. In addition, the coefficients of the explanatory variables are inelastic, that is, their coefficients measuring the elasticities are less than one in absolute values: this implies that a one percent change in the respective variables brings about a less than one percent change in economic growth.

It is also observed from the results in Table 5.12 that the coefficient of Open*Reprisk is -0.208 while the coefficients of Open*Polrig and Open*Ethsion are 0.207 and 0.370 respectively. This implies that the interaction effect between trade liberalization and economic institutions is lower than that of trade liberalization and political and cultural institutions. Therefore, it can be inferred that the impact of trade liberalization on economic growth is more pronounced when strong political and cultural institutions are involved; and seems to be less pronounced when strong economic institutions are involved. Also, since the results of the interactions between trade liberalization and political institutions are not too far from the interaction effect between trade liberalization and cultural institutions, it can be concluded that both political and cultural institutions are

important. Hence, there is a need for the SSA countries to develop institutions generally whether political, cultural and economic.

The implication of this interaction effects between trade liberalization and institutions is that international trade in the selected SSA countries has more benefits on the economy when strong political and cultural institutions are in place than strong economic institutions. The political stability of the SSA countries encourage trading activities to take place among the countries and with other countries of the world. The results in Table 5.12 also reveal that the political institutions variable, Polrig (political rights) is statistically significant at 1 percent in regressions I, II and III, but the coefficient is higher in regression III than in regressions I and II, this implies a higher impact on economic growth (36.0 percent in regression III as against 35.0 percent in regression II and 34.7 percent in regression I). In terms of the cultural institutions variable, Ethsion is statistically significant at 5 percent in regression I and statistically significant at 1 percent in regressions II and III, but its coefficient is higher in regression III than in regressions I and II which implies a higher impact on economic growth (82.6 percent in regression III as against 81.6 percent in regression II and 79.2 percent in regression I).

In terms of the economic institutions variable, Reprisk is statistically significant at 5 percent in regressions II and III. But it had a higher coefficient in regression III than regression II (13.4 percent in regression III and 12.4 percent in regression II). The results in Table 5.12 also reveal that the trade liberalization variable, (degree of openness) had a higher coefficient estimate in regression III than in regressions I and II (6.2 percent in regression III, 6.0 percent in regression II and 3.3 percent in regression I). From the foregoing results, therefore, it is not out of place to say that for trade liberalization to have a noticeable impact on economic growth in these SSA countries, there has to be strong economic, political and cultural institutions in place so that these countries will be able to compete with the

developed countries of the world and will not remain tied to the 'apron strings' of these developed countries for a long period of time.

The second aspect of the estimation process involved the Generalized Method of Moments (GMM) regression analysis. Equation (4.27) specified in chapter four was estimated and the results are presented in Table 5.13.

The system GMM estimator is categorized into the one-step and two-step options, these are reported in columns 2 and 3 respectively. The Pooled Ordinary Least Square (OLS) and the Least Square Dummy Variable (LSDV) results are reported in columns 1 and 4 respectively. The results in Table 5.13 begin with some diagnostic tests. The starting point is based on the assumption that, the individual errors are serially uncorrelated for the system GMM estimators for consistent estimations. The presence of autocorrelation will indicate that lags of the dependent variable (and any other variables used as instruments that are not strictly exogenous), are in fact endogenous, hence bad instruments. Arellano and Bond (2001) develop a test for this phenomenon that would potentially render some lags invalid as instruments. Of course, the full disturbance ε_{it} is presumed autocorrelated because it contains fixed effects, and the estimators are designed to eliminate this source of trouble.

The Arellano-Bond test for autocorrelation is applied to the differenced residuals in order to purge the unobserved and perfectly autocorrelated individual errors. These results are reported as AR(1), AR(2) and AR(3) in the lower portion of Table 5.13. The AR(1) is the only one out of the three that the result is valuable and useful in determining the validity of the estimates. According to theory, the AR(1) should be significant at 5 percent, but it is not mandatory that AR(2) and AR(3) should be significant, although if they are significant it adds to the validity of the estimates. The null hypothesis here that $cov(\Delta v_{it}, \Delta v_{i,t-k}) = 0$ for k = 1, 2 and 3 is rejected at a level of 5 percent if $p < 0.05$. This null hypothesis implies

that the standard errors are consistent If v_{it} are serially uncorrelated, then the null hypothesis of no serial correlation will be rejected at AR(1) but not at higher orders. In Table 5.13, it can be concluded that there is no evidence of serial correlation at 1 percent level of significance since AR(1) is significant in the one-step and two-step GMM. Given these results, the estimates can be regarded as consistent.

Table 5.13: GMM Results of the Growth Model

Dependent Variable – Grgdp				
		SYSTEM-GMM		
Regressors	Pooled OLS	One-step Collapsed	Two-step Collapsed	LSDV
	(1)	(2)	(3)	(4)
LGrgdp(-1)	-	0.265*** (0.000)	0.197*** (0.000)	-
LLab	0.021* (0.080)	0.436** (0.045)	1.380* (0.072)	0.611* (0.080)
LGkap	0.362*** (0.000)	0.159* (0.083)	0.140** (0.037)	0.476*** (0.000)
LSsenr	0.071* (0.063)	0.073** (0.045)	0.160** (0.040)	0.304* (0.059)
LnPsenr	0.237** (0.048)	0.279* (0.067)	0.118** (0.048)	0.461** (0.039)
LOpen	0.091** (0.026)	0.057** (0.011)	0.076** (0.034)	0.023* (0.067)
LPolrig	0.164** (0.045)	0.291** (0.026)	0.235** (0.029)	0.342*** (0.001)
LReprisk	0.132** (0.081)	0.047** (0.028)	0.088* (0.070)	0.092* (0.073)
LEthsion	-0.362*** (0.007)	-0.375** (0.038)	-0.483*** (0.003)	-0.744** (0.044)
LTaxes	0.114*** (0.004)	0.219** (0.042)	0.098** (0.040)	0.198* (0.074)
LNare	0.044*** (0.002)	0.024* (0.055)	0.040* (0.056)	0.033* (0.087)
Constant	0.297** (0.027)	-3.716*** (0.006)	-8.260*** (0.006)	2.069* (0.098)
No. of Instruments	-	30	30	-
Country Effects	No	No	No	Yes
F-stat (Wald χ^2)	-	66.41	1849.28	-
F-stat (p-value)	[0.000]	[0.000]	[0.000]	[0.000]
AR(1)	-	[0.000]	[0.001]	-
AR(2)	-	[0.957]	[0.761]	-
AR(3)	-	-	[0.531]	-
No of Observations	713	605	605	713
Sargan Test (OIR)	-	[0.023]	[0.023]	-
Hansen Test (OIR)	-	-	[0.528]	-
Number of Countries	30	30	30	30

Source: Estimated by the Author. **Notes:** The standard errors are robust and consistent in the presence of any pattern of heteroskedasticity and autocorrelation. Robust standard errors are with Windmeijer (2005) finite-sample correction for the two-step covariance matrix which are reported in braces. Probability values are in parenthesis.

The next diagnostic test is a test of over-identifying restrictions of whether the instruments, as a group, appear exogenous. This test of instrument validity has to do with a comparison of the number of instruments used in each case and the related number of parameters. It is implemented by the Sargan and Hansen J tests. The Sargan and Hansen J tests are used to test if the instruments as a group are exogenous. The test is carried out in order to either accept or reject the null hypothesis that states that the instruments as a group are exogenous. The higher the p-value of the Sargan statistic, the better.

For one-step, non-robust estimation, the Sargan statistic which is the minimized value of the one-step GMM criterion function, is applicable. The Sargan statistic in this case is, however, not robust to autocorrelation. So for one-step, robust estimation (and for all two-step estimation), the *xtabond2* (STATA command) also reports the Hansen J statistic, which is the minimized value of the two-step GMM criterion function, and is robust to autocorrelation. In addition, *xtabond2* still reports the Sargan statistic in these cases because the Hansen J test has its own problem: it can be greatly weakened by instrument proliferation. Only the respective *p-values* are reported for this test results in the lower part of Table 5.13. Here, the null hypothesis that the population moment condition is valid is not rejected if $p > 0.05$. The summary statistics indicate that the one-step and two-step system GMM dynamic panel models of the selected 30 SSA countries have 30 instruments and 11 parameters each. This represents a total of 19 over-identifying restrictions in each case. The number of instruments satisfies the rule that says that the number of instruments should be less or equal to the number of groups. In this study, we have thirty sampled countries. In both specifications, the Hansen–J statistic does not reject the over-identifying restrictions (OIR), thus confirming that the instrument set can be considered valid. The Sargan test is significant at 5 percent.

The F-stat. is the small-sample counterpart of the Wald (Chi-square) statistic and it is a measure of the overall significance of the estimated models and the values here in each of the specifications are considerably not satisfactory because the result in each case is not significant at 1 and 5 percents. This, of course is indicative that all the exogenous variables do not jointly explain significantly, the economic growth process across the sampled SSA countries over the study period.

With respect to the results of the measures of the stock of capital and labour (gross fixed capital formation and employment to population ratio respectively); the stock of capital and labour are statistically significant at 5 percent in the two-step and one-step system GMM respectively. Also, the coefficients of Gkap and Lab measuring the elasticities are less than one in absolute values: this implies that a one percent change in the stock of capital and labour brings about a less than one percent change in economic growth respectively. The results also indicate that the lagged growth value (first lag – $Grgdp_{t-1}$) is statistically significant at 1 percent across the sampled SSA countries. The implication of this result is that past realizations of economic growth do produce some significant impact on the current level of economic growth.

Secondary and primary school enrolments – proxies for education produced some very interesting results in the system GMM. One striking observation here is that education produced a positive impact on economic growth across the sampled countries over the study period. This variable is also statistically significant at the 5 percent level in the collapsed one-step and two–step system GMM options. In more definite terms, a one percent change in secondary and primary school enrolment under the one-step and two–step system GMM estimates brings about a less than one percent change in economic growth across the study group respectively. Education is expected to have a positive impact on economic growth in the selected SSA countries. Theoretically, the implication of this result is education has a great impact on economic growth in the selected SSA countries.

The more educated the citizens of the countries are, the higher growth these countries experience, *ceteris paribus*. The coefficient of employment to population ratio (Lab) is inelastic, that is, its coefficient measuring the elasticity is less than one in absolute value: this implies that a one percent change in labour brings about a less than one percent change in economic growth. The coefficient estimate of this variable implies that labour does significantly contribute to economic growth in the selected SSA countries. The implication of this is that when labour increases, aggregate output increases and hence an improvement in the level of economic growth.

Surprisingly, capital input (gross fixed capital formation) is statistically significant at 5 percent when the two-step system GMM with collapsed instrument options is considered. Capital input in this sense turns out to be a major consideration in driving economic growth in the sampled SSA economies. Though, some of these SSA countries are still relatively characterized with the dominance of the labour intensive sectors in most SSA economies but inspite of this, there are huge capital investments in these countries. In terms of the trade liberalization variable – degree of openness (Open), it is statistically significant at 5 percent in both the one-step and two-step system GMM. From the result, the coefficient of the degree of openness under both the one-step and two–step system GMM is inelastic, that is, the coefficient of Open measuring the elasticity is less than one in absolute value across the study group: this implies that a one percent change in the degree of trade openness brings about a less than one percent change in economic growth. In addition, the coefficient estimates are low (0.057 and 0.076 in one-step and two-step system GMM respectively), this means that trade liberalization does not have a noticeable impact on the economic growth of the selected SSA countries.

In terms of the influence of economic institutions on economic growth, the result of repudiation risk (Reprisk) shows that it is statistically significant at 5 percent in

the one-step system GMM. From the result, the coefficient repudiation risk under both the one-step and two–step system GMM is inelastic, that is, the coefficient of Reprisk measuring the elasticity is less than one in absolute value across the study group: this implies that a one percent change in repudiation risk brings about a less than one percent change in economic growth across the study group. It can be deduced from this result that economic institutions affect economic growth positively in the selected SSA countries. In terms of cultural institutions, the result for ethnic tensions (Ethsion) reveals that it is statistically significant at 1 percent under the two-step system GMM and significant at 5 percent under the one-step system GMM. From the coefficient estimates, the impact of Ethsion on economic growth is fairly large. This may be due to the fact that some of these SSA countries e.g. Sudan, Nigeria had been plagued with ethnic crises which have hindered trade liberalization and economic growth. However, the coefficient of Ethsion is inelastic, that is, its coefficient measuring the elasticity is less than one in absolute value in columns 2 and 3 in Table 5.13: this implies that a one percent change in Ethsion brings about a less than one percent change in economic growth.

Furthermore, the political institutions variable – political rights (Polrig) is statistically significant at 5 percent in columns 2 and 3 across the sampled countries over the study period. What this finding suggests is that, political institutions have a positive impact on economic growth in the selected SSA countries but this is not pronounced as the levels of economic growth is low in these countries. This result does not conform to the findings of Bhattacharyya (2011) who asserted that political institutions have a negative impact on growth. From the result in Table 5.13, the coefficient of Polrig is inelastic, that is, its coefficient measuring the elasticity is less than one in absolute value under the two–step system GMM estimates across the study group: this implies that a one percent change in Polrig brings about a less than one percent change in economic

growth. Generally, the results in Table 5.13 depict that trade liberalization and institutions have significant impacts on economic growth in the selected SSA countries covered in this study, but in terms of coefficient estimates of the variables, trade liberalization had the higher impact on growth.

With respect to natural resource endowment (Nare), one of the explanatory variables, the result reveals that the coefficient of Nare is inelastic, that is, its coefficient measuring the elasticity is less than one in absolute value under both the one-step and two–step system GMM estimates across the study group: this implies that a one percent change in natural resource endowment brings about a less than one percent change in economic growth. It is also observed that the coefficient estimates of Nare are very small (2.4 percent under one-step and 4 percent under two-step system GMM). The implication of this is that the revenue earned from the export of natural resources have not been properly utilized in the selected SSA countries hence they have not experienced the expected growth.

Finally, concerning the variable - taxes, its coefficient is inelastic, that is, its coefficient measuring the elasticity is less than one in absolute value: this implies that a one percent change in taxes brings about a less than one percent change in economic growth. The variable is statistically significant at 5 percent under both the one-step and two–step system GMM estimates across the study group. In terms of the coefficient estimates of taxes, they are low in columns 2 and 3, the implication of this is that the revenue generated from taxes in the sampled SSA countries may not have been channeled to viable economic projects that will contribute to economic growth but rather some corrupt government officials in charge of the collection of taxes in the tax office may have misappropriated the funds.

In addition, apart from providing some additional robustness check, the results in columns 1 and 4 provide a guide based on the position of Bond, Hoeffler and Temple (2001) that suggests the pooled OLS and the LSDV estimators should be considered as the upper and lower bound respectively for the system GMM coefficients. With this guide in place, it will be easy to tell when each coefficient estimate is either downward or upward biased. Repudiation risk (proxy for economic institutions), Ethsion (proxy for cultural institutions), degree of openness (the measure of trade liberalization) and natural resource endowment are the only variables that have their pooled OLS and LSDV values as upper and lower bound respectively, the other variables did not fulfil this criterion. It is evident from the results in Table 5.13 that most of the coefficient estimates are downward biased.

5.4 Robustness of Results

The robustness check on the results of this study is imperative so as to verify what happens to the results when the researcher adds some new variables into the model, are the results actually better or will they be indifferent from the results already obtained. Equation (4.16) specified in chapter four was estimated to get the results in Table 5.14. The study added three new explanatory variables into the growth model. These explanatory variables are foreign direct investment (measure of trade liberalization), contract intensive money (proxy for political institutions) and economic freedom (proxy for economic institutions). These three explanatory variables were described in chapter four.

The results in Table 5.14 reveal that the adjusted R^2 is 0.185 which is just about 0.001 different from 0.184 which is the value of the adjusted R^2 in Table 5.11. Since the difference in the values of the adjusted R^2 of the growth model and that of the model for the robustness check is just 0.001, thus, it can be concluded that

the results obtained earlier on are reliable. Finally, in terms of the comparison of the LSDV and the Pooled OLS regression results in Table 5.14, it is observed that the LSDV results performed better than the pooled regression results in almost all parameter estimates (for example, Gkap, Psenr, Ssenr, Lab, Reprisk, Ecofre). Also, there is an improvement in the values of the adjusted R^2 for LSDV than that of the pooled OLS (0.185 for LSDV and 0.079 for Pooled OLS). The F-stat. probability results showed that they are 0.0000, meaning that it is significant at 1 percent. This implies that the model is robust, that is, all the independent variables jointly explain the dependent variable. However, the low adjusted R^2 is not unexpected in cross sectional data.

The first estimation process started with the LSDV as presented in Table 5.14. The LSDV results indicated that all the eleven explanatory variables have their coefficients measuring the elasticities less than one in absolute values: this implies that a one percent change in the respective variables brings about a less than one percent change in the economic growth. Gdpini (initial level of growth), Gkap (gross fixed capital formation – the measure of stock of capital) and Ssenr (secondary school enrolment - proxy for human capital) were statistically significant at 1 percent. While Polrig (proxy for political institutions), Open (degree of openness – the measure of trade liberalization), Taxes, Ethsion (ethnic tensions - proxy for cultural institutions) and Ecofre (proxy for economic freedom) were statistically significant at 5 percent.

Table 5.14: Robustness Check Results

DEPENDENT VARIABLE - Grgdp		
VARIABLE	LSDV	Pooled OLS
Lgdpini	-0.450^{***} [4.05] (0.000)	-0.380^{***} [5.84] (0.000)
Lgkap	0.459^{***} [6.26] (0.000)	0.351^{***} [5.68] (0.000)
Lssenr	0.273^{***} [2.63] (0.003)	0.114^{**} [2.15] (0.049)
Lpsenr	0.266^{*} [1.88] (0.081)	0.062^{**} [2.50] (0.017)
Llab	0.350^{*} [1.99] (0.053)	0.082^{**} [2.33] (0.038)
Lopen	0.052^{**} [2.36] (0.015)	0.175^{**} [2.21] (0.027)
Lreprisk	0.082^{*} [2.22] (0.061)	0.057^{**} [2.05] (0.050)
Lpolrig	0.260^{**} [2.37] (0.018)	0.138^{***} [2.64] (0.002)
Lethsion	-0.025^{**} [1.94] (0.070)	-0.320^{**} [2.32] (0.021)
Ltaxes	0.012^{**} [2.08] (0.036)	0.102^{**} [1.98] (0.068)
Lnare	0.033^{*} [1.65] (0.099)	0.055^{***} [3.62] (0.000)
Lfdi	0.022^{*} [1.85] (0.096)	0.078^{***} [3.79] (0.000)
Lcim	0.033^{*} [1.96] (0.079)	0.039^{**} [2.07] (0.030)
Lecofre	0.141^{**} [2.19] (0.036)	0.102^{**} [1.95] (0.044)
Constant	3.119^{**} [2.43] (0.027)	2.626^{*} [1.73] (0.084)
R^2	0.233	0.093
Adjusted R^2	0.185	0.079
F-stat	4.46 (0.000)	6.54 (0.000)
Time Dummy	No	No
Country Dummy	Yes	Yes
Countries	30	30
Number of Observations	626	626

Source: Estimated by the Author. **Notes:** Same as in Table 5.11.

5.5 Sensitivity Checks

In addition to the above robustness of the estimated results, this study also examined the sensitivity of the results. This was achieved by estimating growth model used to examine the impact of trade liberalization and institutions on economic growth. The growth equation was specified as equation (4.14) in chapter four. The study classified the selected SSA countries into West Africa, Central Africa and East/Southern African sub-regions. Recall that we have thirty sampled SSA countries used in this study. The West African sub-region comprises of Benin Republic, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Niger, Nigeria and Senegal. The Central African sub-regional countries are Angola, Burundi, Cameroon, Chad, Congo Republic, Equatorial Guinea, Gabon and Rwanda. The third group consists of countries that are under the East and Southern African sub-region, these countries include Botswana, Djibouti, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, South Africa, Sudan, Swaziland, Tanzania, Uganda and Zambia. This was done via the estimation of the thirty countries based on the group basis in order to compare the results across sub-regions of SSA. The LSDV regression results were used for the comparison. This is because the LSDV results are better than the pooled OLS results.

The second aspect of the classification has to do with the categorization of the thirty (30) countries based on the World Bank's classification (2007) of countries into moderately outward-oriented (MOOC), moderately inward-oriented (MIOC) and strongly inward-oriented countries (SIOC). The moderately outward-oriented countries include Benin Republic, Chad, Congo Republic, Equatorial Guinea, Gabon, Mozambique, Niger, Rwanda, Swaziland, and Uganda. The strongly inward-oriented countries include Angola, Burundi, Ethiopia, Ghana, Madagascar, Nigeria, South Africa, Sudan, Tanzania, and Zambia. The

moderately inward-oriented countries include Botswana, Cameroon, Cape Verde, Cote d'Ivoire, Djibouti, Gambia, Kenya, Lesotho, Malawi and Senegal.

The results shown in Table 5.15 are the sensitivity checks (the LSDV results) for the economic growth model. The table reveals that there is an improvement in adjusted R^2 results for LSDV. The adjusted R^2 measures the percentage variation of the dependent variable explained by the independent variables. The results also show that the adjusted R^2 for LSDV are 0.184, 0.267, 0.176 and 0.231 in the overall, Central Africa, West Africa and East/Southern African sub-regions respectively. This suggests that the explanatory variables in the model explain about 18.4, 26.7, 17.6 and 23.1 percent variations in the dependent variable, Grgdp in the overall sample, Central Africa, West Africa and East/Southern African sub-regions respectively. The F-stat. probability results show that they are 0.0000 (except in West Africa where the F-stat. is 0.002), meaning that it is significant at 1 percent. This implies that the model is robust, that is, all the independent variables jointly explain the dependent variable. However, the low adjusted R^2 is not unexpected in cross sectional data.

The implication of this is that empirically, Central Africa tends to have better growth rate, followed by East/Southern Africa and then West Africa. The reasons for this result may be due to the fact that some of the Central African countries have been observed to have higher annual growth rates than some countries in West Africa and East/Southern Africa. For instance, in 2011, the annual growth rates of Angola, Chad, Cameroon, Equatorial Guinea and Congo Republic were 9.5, 5.5, 3.1, 16.4 and 2.2 percents respectively; while that of Benin Republic, Ghana, Nigeria, Djibouti, Kenya, Lesotho, South Africa and Sudan were 1.4, 3.8, 3.6, 1.8, 2.1, 3.2, 3.7 and 5.2 percents for the same period, respectively (Africa Development Indicators, 2011).

Similar trend is also observed for labour, the percentage of total labour force in the Central African countries are higher than in West Africa and East/Southern

Africa. For example, in 2011, the percentage of total labour force in Angola, Chad, Cameroon, Equatorial Guinea and Congo Republic were 47.3, 48.9, 43.1, 46.7 and 43.8 percents respectively; while that of Benin Republic, Ghana, Nigeria, Djibouti, Kenya, Lesotho, South Africa and Sudan were 44.1, 48.3, 36.2, 44.1, 47.2, 42.6, 46.3 and 31.0 percents for the same period, respectively (Africa Development Indicators, 2011). In addition, the Central African countries are predominantly labour-intensive in their production processes. However, generally speaking, the results of these three categories of countries do not show a very wide disparity from the overall sample results for the entire 30 countries.

The results in Table 5.15 also show that the coefficients of employment to population ratio (Lab) measuring the elasticities is less than one in absolute values for the overall sample and the East/Southern African sub-region: this implies that a one percent change in labour brings about a less than one percent change in economic growth in the overall SSA countries and East/Southern African sub-region. While the coefficients of elasticities are greater than one in absolute values in the Central and West African sub-region: this implies that a one percent change in labour brings about a greater than one percent change in economic growth in Central and West African sub-region. Theoretically, labour force is supposed to have a positive impact on economic growth via the production of aggregate output. But out of these three sub-regional groupings of countries, the result for the Central African sub-region has a higher coefficient estimate than the East/Southern and West African sub-regions. This buttresses the earlier empirical finding that the Central African countries used in this study have better performance indicators (institutional measures) as displayed in chapter two of this study. Also, the variable is statistically significant at 1 percent in the Central and East/Southern African sub-regions.

With respect to the proxy for stock of capital (gross fixed capital formation - Gkap), both the overall sample and the categorical results reveal that it is

statistically significant at 1 percent. In addition, in all the results, the coefficients of Gkap measuring the elasticities are less than one in absolute values: this implies that a one percent change in the stock of capital brings about a less than one percent change in economic growth. Theoretical evidence says that there is a positive relationship between the stock of capital and economic growth, that is, as the growth rate increases, the stock of capital increases. The implication of these results is that in the Central Africa, West Africa and East/Southern African countries, capital has a positive impact on economic growth. Therefore, in order to have a higher level of growth in the selected SSA countries, there is a need for these SSA countries to keep encouraging both local and foreign investments so as to be able to increase aggregate output, savings and the stock of capital.

From Table 5.15, in terms of the proxies for human capital (Psenr and Ssenr), Ssenr is statistically significant at 1 percent in West and East/Southern African sub-regions while Psenr is statistically significant at 1 percent in the Central African sub-region and 5 per significant in the overall sample result. The implication of this is that empirically in our sampled SSA countries used in this study, education does affect growth positively. The results also show that the coefficients of Psenr and Ssenr measuring the elasticities are less than one in absolute values in the overall sample and categorical results: this implies that a one percent change in human capital brings about a less than one percent change in economic growth. The overall and categorical results of the initial level of GDP variable (Gdpini) show that its coefficients measuring the elasticities are less than one in absolute values: this implies that a one percent change in Gdpini brings about a less than one percent change in economic growth. The implication of this is that the sampled SSA countries in this study have experienced some higher level of growth than the previous year, though, not very noticeable.

From the results in Table 5.15, in terms of the measure of trade liberalization - the degree of openness (Open), the results for both the overall sample and sub-

regional grouping of countries reveal that the coefficients of Open measuring the elasticities are less than one in absolute values: this implies that a one percent change in the degree of openness brings about a less than one percent change in economic growth. Also, it is statistically significant at 5 percent in Central African sub-region. In terms of the coefficient estimates of the variable, of the three sub-regional groupings, trade liberalization had a higher value in Central Africa than in West and East/Southern Africa. This may be due to the fact that Central Africa gained more from trade liberalization and the earlier empirical finding that Central Africa fared better in the performance indicators than West and East/Southern Africa.

In terms of the natural resource endowment variable (Nare), the results show that its coefficients measuring the elasticities are less than one in absolute values in the overall sample and the three sub-regional groupings: this implies that a one percent change in Nare brings about a less than one percent change in economic growth. The variable is statistically significant at 1 percent and 5 percent in Central and West African sub-regions respectively. In terms of the coefficient estimates, of the three sub-regional categories, the result for the Central African sub-region has the highest value of 16.0 percent on economic growth. In terms of taxes, the overall and categorical results reveal that the coefficients of taxes measuring the elasticities are less than one in absolute values: this implies that a one percent change in taxes brings about a less than one percent change in economic growth. Also, the variable is statistically significant at 5 percent in West African sub-region. In terms of the coefficient estimates, of the three sub-regional categories, the result for the West African sub-region has the highest value of 49.2 percent on economic growth. This result implies that taxes do not have a highly noticeable impact on economic growth and this may probably be due to the fact the proceeds from taxes may not have properly utilized in the selected SSA countries except in the West African countries.

Table 5.15: Sensitivity Sample Checks of Results (Sub-regional Classification)

Dependent Variable – Measure of Economic Growth (Grgdp)				
LSDV				
Regressors	ALL	CEAF	WAF	EASAF
Lgdpini	-0.415*** [3.75]	-0.150** [2.19]	-0.430** [2.00]	-0.697*** [2.88]
	(0.000)	(0.028)	(0.035)	(0.004)
LGkap	0.476*** [6.75]	0.571*** [3.32]	0.552*** [2.84]	0.420*** [4.57]
	(0.000)	(0.001)	(0.005)	(0.000)
LSsenr	0.304* [1.99]	0.666* [1.95]	0.186*** [2.67]	0.033*** [2.72]
	(0.059)	(0.063)	(0.003)	(0.004)
LPsenr	0.461** [2.07]	0.256*** [2.38]	0.419* [1.91]	0.495* [1.70]
	(0.039)	(0.001)	(0.064)	(0.090)
LLab	0.611* [1.75]	15.536*** [2.74]	2.928* [1.95]	0.722*** [2.67]
	(0.080)	(0.007)	(0.052)	(0.007)
LOpen	0.023* [1.97]	0.478** [2.24]	0.409* [1.77]	0.078* [1.84]
	(0.067)	(0.015)	(0.085)	(0.058)
LEthsion	-0.744** [2.07]	-1.330** [2.13]	-0.812* [1.69]	-1.145** [2.06]
	(0.044)	(0.027)	(0.090)	(0.045)
LReprisk	0.092* [1.92]	0.425* [1.82]	0.221* [1.98]	0.146* [1.98]
	(0.073)	(0.087)	(0.065)	(0.071)
LPolrig	0.342*** [3.29]	1.768*** [3.98]	0.098** [2.12]	0.436*** [2.94]
	(0.001)	(0.000)	(0.039)	(0.004)
LTaxes	0.198* [1.86]	0.181* [1.73]	0.492** [2.15]	0.150* [1.95]
	(0.074)	(0.094)	(0.031)	(0.077)
LNare	0.033* [1.91]	0.160*** [2.60]	0.043** [2.14]	0.031* [1.70]
Constant	(0.087)	(0.010)	(0.039)	(0.095)
	2.069* [1.79]	59.606** [2.49]	11.585 [0.68]	3.724 [0.58]
	(0.098)	(0.014)	(0.497)	(0.562)
R^2	0.230	0.344	0.198	0.284
Adjusted R^2	0.184	0.267	0.176	0.231
F-stat	5.02 (0.000)	4.44 (0.000)	2.42 (0.002)	5.33 (0.000)
Country Dummy	Yes	Yes	Yes	Yes
Countries	30	8	8	14
Number of Observations	713	171	195	347

Source: Estimated by the Author. **Notes:** Variables are as previously defined. Absolute *t* statistics are displayed in parentheses beside the coefficients while probability values are in brackets. LSDV- Least Square Dummy Variable. CEAF – Central African sub-region, WAF – West African sub-region, EASAF – East and Southern African sub-region.* - significant at 10 percent; ** - significant at 5 percent; *** - significant at 1 percent.

From the results in Table 5.15, in terms of the political institutions variable - political rights (Polrig), the results for the overall sample and sub-regional groupings reveal that the coefficients of Polrig measuring the elasticities are less than one in absolute values: this implies that a one percent change in Polrig brings about a less than one percent change in economic growth. But in Central Africa, the coefficient of Polrig measuring elasticity is greater than one in absolute value: this implies that a one percent change in Polrig brings about a greater than one percent change in economic growth. Polrig is statistically significant at 1 percent in the overall sample, Central and East/Southern African sub-regions while it is significant at 5 percent in West African sub-region. In terms of the coefficient estimates, of the three sub-regional categories, the result for the Central African sub-region has the highest value of 176.8 percent on economic growth.

In terms of the economic institutions variable (repudiation risk - Reprisk), the results for the overall and the three sub-regional groupings show that the coefficients of repudiation risk measuring the elasticities are less than one in absolute values, with the overall sample coefficient estimate being the lowest (0.092): this implies that a one percent change in Reprisk brings about a less than one percent change in economic growth. In terms of the coefficient estimates, the results showed that Central African sub-region had the highest value than West and East/Southern African sub-regions.

As regards the cultural institutions variable (Ethsion), the results reveal that the coefficients of Ethsion measuring the elasticities are less than one in absolute values in the overall sample and West African sub-region: this implies that a one percent change in Ethsion brings about a less than one percent change in economic growth in the selected SSA countries and West African sub-region. While the coefficients of Ethsion measuring the elasticities are greater than one in absolute values in Central and East/Southern African sub-regions: this implies that a one percent change in Ethsion brings about a greater than one percent

change in economic growth in Central and East/Southern African sub-regions. The implication of this result is that cultural institutions in these SSA countries have negative impact on economic growth. This supports what theory says, when there are ethnic crises in a country, growth is adversely affected. But the results are statistically significant at 5 percent in the overall sample, Central and East/Southern African sub-regions. In terms of the coefficient estimates, the results showed that Central African sub-region had the highest value than West and East/Southern African sub-regions.

As part of the sensitivity checks, the study further carried out estimations for West African sub-region (excluding Nigeria) and East/Southern African sub-region (excluding South Africa). The equation used for the estimations is still equation (4.14) specified in chapter four. The reason why this is done is because Nigeria and South Africa are regarded as two major outliers (countries) in West Africa and East/Southern Africa respectively. It was also considered expedient to examine these checks given the fact that Nigeria has a high population which is about 18.43 percent of that of the SSA region and 15.54 percent of that of the entire African continent (World Population Reference Bureau, 2011). Furthermore, the choice of excluding South Africa stems from the fact that South Africa has been known to have a different growth pattern compared to other SSA countries. This study is interested in finding out if the exclusion of these two countries from their respective sub-regions will greatly affect the results we got when they were included and to find out if these countries have any significant impact or 'carry any weight' in their respective sub-regions. This is to either buttress or refute the widely acclaimed belief of Nigeria being the 'Giant of Africa'.

The results from Table 5.16 reveal that the adjusted R^2 values for LSDV in the overall sample for West Africa and when Nigeria was excluded from the sample were 0.176 and 0.186 respectively. While for the overall sample for East/Southern

Africa and when South Africa was excluded from the sample, the adjusted R^2 values were 0.231 and 0.231 respectively. Since the coefficients point out that the changes in the values were minimal, therefore, we can infer that Nigeria and South Africa do not exert outlier effects in the estimated results. Invariably, the implication of this is that Nigeria and South Africa do not foretell possible outlier problem in the estimated results. The F-stat. probability results showed that they are 0.0000 (except in West Africa where the F-stat. is 0.002), meaning that it is significant at 1 percent. This implies that the model is robust, that is, all the independent variables jointly explain the dependent variable. However, the low adjusted R^2 is not unexpected in cross sectional data.

The results in Table 5.16 reveal that there was not much difference in the results of the variables. Considering the measure of trade liberalization (degree of openness), its coefficients measuring the elasticities are less than one in absolute values in both cases, that is, when Nigeria and South Africa were excluded from the West Africa and East/Southern Africa, and when they were included respectively: this implies that a one percent change in the degree of openness brings about a less than one percent change in economic growth. However, in terms of the coefficient estimates, the coefficients are higher in both cases; when Nigeria was excluded from the West African sub-region; the value is 0.513 as against 0.409 when Nigeria was included in the analysis. The result was the same when South Africa was excluded from East/Southern African sub-region, the coefficient is 0.115 as against 0.078 when South Africa was included in the analysis.

In terms of repudiation risk (proxy for economic institutions), the coefficients of repudiation risk measuring the elasticities are less than one in absolute values in both cases, that is, when South Africa was excluded from the East/Southern African sub-region and when Nigeria was excluded from West African sub-region as well as when the two countries were included in their respective sub-regions.

This implies that a one percent change in repudiation risk brings about a less than one percent change in economic growth. But the variable is statistically significant at 1 percent when South Africa was excluded from the East/Southern African sub-region. The coefficient estimate of repudiation risk was more than two-fold from 22.1 to 44.8 for the West Africa sample and when Nigeria was excluded from the sample respectively. The coefficient is also higher when South Africa was excluded from East/Southern African sub-region and when South Africa was included in the analysis, 0.196 and 0.146 respectively.

With respect to the political institutions variable (political rights - Polrig), its coefficients measuring the elasticities are less than one in absolute values in both cases, that is, when South Africa was excluded from the East/Southern African sub-region and when Nigeria was excluded from West African sub-region as well as when the two countries were included. This implies that a one percent change in political rights brings about a less than one percent change in economic growth. But the variable is statistically significant at 1 percent when South Africa was included in the East/Southern African sub-region and significant at 5 percent in the West Africa sample and when Nigeria was excluded from West Africa. In terms of the coefficient estimates, political rights had a higher value when Nigeria was excluded from the West African sub-region than the West Africa sample, 0.148 and 0.098 respectively. The coefficient is also higher when South Africa was included in East/Southern African sub-region than in South Africa sample 0.436 and 0.309 respectively.

In terms of the cultural institutions variable (ethnic tensions - Ethsion), as regards the coefficient estimates, the results show a wide disparity. For West Africa, the value increased almost three-fold from -0.812 to -2.396 for the overall sample and when Nigeria was excluded respectively. For East and South Africa, a similar scenario was witnessed; the value decreased almost two-fold from -1.145 to -0.638 for the overall sample and when South Africa was excluded respectively.

The implication of this result is that for trading activities to take place among the SSA countries, there should be ethnic peace in the countries. The coefficients of ethnic tensions measuring the elasticities are less than one in absolute values when South Africa was excluded from the East/Southern African sub-region and the result of the West African sub-region. This implies that a one percent change in Ethsion brings about a less than one percent change in economic growth. While its coefficients that measures elasticities are greater than one in absolute values in the East/Southern African sub-region and when Nigeria was excluded from West African sub-region. This implies that a one percent change in Ethsion brings about a greater than one percent change in economic growth.

Table 5.16 also reveals the results of the proxies for human capital (Psenr and Ssenr). Ssenr is statistically significant at 1 percent in West Africa and East/Southern Africa samples while Psenr is statistically significant at 1 percent in the West Africa minus Nigeria result and 5 per significant in the East/Southern Africa minus South Africa result. The results also show that their coefficients measuring the elasticities are less than one in absolute values in all the results. This implies that a one percent change in Psenr and Ssenr brings about a less than one percent change in economic growth. The results of the initial level of GDP variable (Gdpini) show that its coefficients measuring the elasticities are less than one in absolute values in all the results.

Table 5.16: Sensitivity Sample Checks of Results (Outliers Effect)

Dependent Variable – Grgdp				
LSDV				
Regressors	WAF	Less NGA	EASAF	Less ZAF
Lgdpini	-0.430**[2.00]	-0.454** [1.94]	-0.697*** [2.88]	-0.598*** [2.59]
	(0.035)	(0.027)	(0.004)	(0.010)
Lgkap	0.552*** [2.84]	0.651*** [3.37]	0.420*** [4.57]	0.442*** [5.06]
	(0.005)	(0.001)	(0.000)	(0.000)
Lssenr	0.186*** [2.67]	0.361* [1.66]	0.033*** [2.72]	0.233* [1.89]
	(0.003)	(0.076)	(0.004)	(0.074)
Lpsenr	0.419* [1.91]	0.227*** [2.51]	0.495* [1.70]	0.661** [2.35]
	(0.064)	(0.009)	(0.090)	(0.020)
Llab	2.928* [1.95]	2.421** [2.65]	0.722*** [2.67]	0.411*** [2.38]
	(0.052)	(0.017)	(0.007)	(0.007)
Lopen	0.409* [1.77]	0.513* [1.81]	0.078* [1.84]	0.115* [1.69]
	(0.085)	(0.092)	(0.058)	(0.093)
Lethsion	-0.812*[1.69]	-2.396* [1.83]	-1.145** [2.06]	-0.638** [2.82]
	(0.090)	(0.085)	(0.045)	(0.014)
Lreprisk	0.221* [1.98]	0.448* [1.86]	0.146* [1.98]	0.196*** [2.26]
	(0.065)	(0.065)	(0.071)	(0.010)
Lpolrig	0.098** [2.12]	0.148** [1.97]	0.436*** [2.94]	0.309* [1.86]
	(0.039)	(0.031)	(0.004)	(0.064)
Ltaxes	0.492** [2.15]	0.599** [1.94]	0.150* [1.95]	0.078*** [4.69]
	(0.031)	(0.054)	(0.077)	(0.000)
Lnare	0.043** [2.14]	0.043** [2.23]	0.031* [1.70]	0.035** [1.97]
	(0.039)	(0.019)	(0.095)	(0.019)
Constant	11.585*[0.68]	6.521* [1.64]	3.724 [0.58]	0.863* [1.75]
	(0.497)	(0.090)	(0.562)	(0.082)
R^2	0.198	0.267	0.284	0.286
Adjusted R^2	0.176	0.186	0.231	0.231
F-stat	2.42 (0.002)	3.30 (0.000)	5.33 (0.000)	5.22 (0.000)
Country Dummy	Yes	Yes	Yes	Yes
Countries	8	7	14	13
Number of Observations	195	172	347	324

Source: Estimated by the Author. **Notes:** Variables are as previously defined. Absolute *t* statistics are displayed in parentheses beside the coefficients while probability values are in brackets. LSDV- Least Square Dummy Variable WAF – West African sub-region, EASAF – East and Southern African sub-region. NGA: Nigeria, ZAF: South Africa. * - significant at 10 percent; ** - significant at 5 percent; *** - significant at 1 percent.

From the results in Table 5.16, in terms of the stock of capital (gross fixed capital formation - Gkap), its coefficients measuring the elasticities is less than one in absolute values: this implies that a one percent change in the stock of capital brings about a less than one percent change in economic growth. The variable is statistically significant at 1 percent in all the results. The coefficient estimates are higher when Nigeria and South Africa were excluded from West and East/Southern African sub-regions respectively than the overall West African and East/Southern African results. The results of the employment to population ratio (Lab) show that its coefficient measuring the elasticity is greater than one in absolute value in the West Africa sample and when Nigeria was excluded from West Africa: this implies that a one percent change in labour brings about a greater than one percent change in economic growth. While its coefficient measuring the elasticity is less than one in absolute value in the overall East/Southern African sub-region and when South Africa was excluded from East/Southern Africa results. This implies that a one percent change in labour brings about a less than one percent change in economic growth. Labour is statistically significant at 1 percent in East/Southern Africa sample and when South Africa was excluded from East/Southern Africa results while it is significant at 5 percent in the West Africa minus Nigeria result.

The results shown in Table 5.17 are the sensitivity checks (the LSDV results) for the growth model for the categorization of countries based on the World Bank's classification in 2007. The results show that the adjusted R^2 and probability values for the F-stat. are 0.184 and 0.0000, 0.140 and 0.0000, 0.146 and 0.0000 as well as 0.251 and 0.0000 for overall, moderately inward-oriented countries (MIOC), strongly inward-oriented countries (SIOC) and moderately outward-oriented countries (MOOC) respectively. However, the best of these results in terms of the adjusted R^2 is the MOOC result. This means that the combined independent variables explain about 25.1 percent variation of the change in economic growth in MOOC while that of SIOC is 14.6 percent and that of MIOC

is 14.0 percent. The implication of the F-stat. significance at 1 percent portrays that the model is robust, that is, all the independent variables jointly explain the dependent variable. However, the low adjusted R^2 is not unexpected in cross sectional data.

Generally, the implications of these results reveal that the moderately outward-oriented countries (MOOC) are likely to have better growth than the other two sub-groups of countries (that is, moderately inward-oriented countries and the strongly inward-oriented countries) empirically. This is evident from the value of the adjusted R^2 and the coefficient estimates of variables like Gkap, Ssenr, Psenr, Lab, Reprisk, Polrig and Nare. This implies that seven out of the eleven explanatory variables had higher coefficients representing about 64 percent in MOOC. However, the results of these three sub-groups of countries do not show a very wide disparity from the overall results from the entire thirty countries.

From Table 5.17, the result reveal that the coefficients of employment to population ratio (Lab) measuring the elasticities are less than one in absolute values in the overall and the strongly inward-oriented countries (SIOC) results. This implies that a one percent change in labour brings about a less than one percent change in economic growth. While its coefficients measuring the elasticities are greater than one in absolute values in the moderately inward-oriented countries (MIOC) and the moderately outward-oriented countries (MOOC) results. This implies that a one percent change in labour brings about a greater than one percent change in economic growth. The results also reveal that labour is statistically significant at 1 percent in the moderately outward-oriented countries (MOOC) result. But of the three sub-grouping of countries that are presented in Table 5.17, the coefficient estimate of labour in MOOC is higher than the two others (MIOC and SIOC). This implies that labour had a higher impact on economic growth in MOOC than in MIOC and SIOC. Labour had positive signs in all the results. Theoretically, labour force has a positive impact

on economic growth via the production of aggregate output. The outcome of this result may be due to the fact that the moderately outward-oriented countries have a strong support for the purchase of domestic goods which boosts industrialization and increases the rate of employment and hence economic growth. In terms of the stock of capital (gross fixed capital formation - Gkap), the results reveal that the coefficients of gross fixed capital formation measuring the elasticities are less than one in absolute values in both the overall and the three sub-groups' results. This implies that a one percent change in the stock of capital brings about a less than one percent change in economic growth. In addition, all the results in the overall and three sub-groups are statistically significant at 1 percent except the result for the strongly inward-oriented countries (SIOC). In addition, the coefficient estimate of labour MOOC is higher than the two others (MIOC and SIOC). This implies that labour had a higher impact on economic growth in MOOC than in MIOC and SIOC.

Concerning the taxes variable, the results reveal that taxes is statistically significant at 5 percent in SIOC and MOOC results. In addition, the coefficients of taxes measuring the elasticities are less than one in absolute values in both the overall and the three sub-groups of countries. This implies that a one percent change in taxes brings about a less than one percent change in economic growth. In terms of the coefficient estimates, the value is higher in SIOC than in MIOC and MOOC. This implies that taxes have a higher impact on economic growth in the strongly inward-oriented countries (SIOC) than in the moderately inward-oriented countries (MIOC) and moderately outward-oriented countries (MOOC).

Table 5.17: Sensitivity Sample Checks of Results (World Bank Classification)

Dependent Variable – Measure of Economic Growth (Grgdp)				
Regressors	ALL	MIOC	SIOC	MOOC
Lgdpini	-0.415*** [3.75] (0.000)	-0.441** [1.99] (0.048)	-0.005* [1.89] (0.088)	-0.289* [1.90] (0.059)
LGkap	0.476*** [6.75] (0.000)	0.419*** [3.38] (0.001)	0.192* [1.98] (0.053)	0.689*** [5.94] (0.000)
LSsenr	0.304* [1.99] (0.059)	0.030** [2.10] (0.018)	0.163* [1.94] (0.058)	1.023*** [3.07] (0.002)
LPsenr	0.461** [2.07] (0.039)	0.162** [2.37] (0.015)	0.272** [2.05] (0.046)	0.758** [2.19] (0.012)
LLab	0.611* [1.75] (0.080)	1.658* [1.99] (0.074)	0.310* [1.74] (0.089)	11.116*** [3.02] (0.003)
LOpen	0.023* [1.97] (0.067)	0.230* [1.85] (0.098)	0.123** [2.18] (0.030)	0.028** [2.08] (0.034)
LEthsion	-0.744** [2.07] (0.044)	-1.001** [2.08] (0.027)	-0.684* [1.88] (0.082)	-1.808** [2.31] (0.016)
LReprisk	0.092* [1.92] (0.073)	0.019** [2.09] (0.026)	0.142** [2.11] (0.043)	0.250** [2.14] (0.019)
LPolrig	0.342*** [3.29] (0.001)	0.071* [1.93] (0.065)	0.314* [1.96] (0.080)	0.898*** [3.56] (0.000)
LTaxes	0.198* [1.86] (0.074)	0.111* [1.98] (0.064)	0.410** [2.07] (0.043)	0.367** [2.07] (0.045)
LNare	0.033* [1.91] (0.087)	0.041** [2.03] (0.053)	0.022* [1.77] (0.084)	0.092** [2.55] (0.012)
Constant	2.069* [1.79] (0.098)	5.712* [1.96] (0.076)	4.236* [2.04] (0.057)	38.125** [2.51] (0.013)
R^2	0.230	0.211	0.219	0.315
Adjusted R^2	0.184	0.140	0.146	0.251
F-stat	5.02 (0.000)	2.96 (0.000)	3.01 (0.000)	4.90 (0.000)
Country Dummy	Yes	Yes	Yes	Yes
Countries	30	10	10	10
Number of Observations	713	242	236	234

Source: Estimated by the Author. **Notes:** Variables are as previously defined. Absolute *t* statistics are displayed in parentheses while probability values are in brackets. LSDV- Least Square Dummy Variable. MIOC – moderately inward-oriented countries; SIOC – strongly inward-oriented countries; MOOC – moderately outward-oriented countries.* - significant at 10 percent; ** - significant at 5 percent; *** - significant at 1 percent.

The results in Table 5.17 also reveal that education/human capital (proxied by Psenr and Ssenr) have their coefficients which measures elasticities are less than one in absolute values in the overall and three sub-groups: this implies that a one percent change in Psenr and Ssenr brings about a less than one percent change in economic growth. But the coefficient of Ssenr measuring the elasticity is greater than one in absolute value in MOOC: this implies that a one percent change in Ssenr brings about a greater than one percent change in economic growth in MOOC. Ssenr is statistically significant at 1 percent in MOOC and statistically significant at 5 percent in MIOC. While Psenr is statistically significant at 5 percent in the overall and the three sub-groups. The implication of this is that empirically in our sampled SSA countries used in this study, education influences economic growth positively. Though, the educational standards in these countries can be improved upon than the state in which they are now. However, in terms of the coefficient estimates, the values are higher in MOOC than the two others (MIOC and SIOC) for both Ssenr and Psenr. This implies that education had a higher impact on economic growth in MOOC than in MIOC and SIOC.

In terms of the initial level of GDP (Gdpini), its coefficients measuring the elasticities are less than one in absolute values in both the overall and the three sub-groups (that is, MIOC, SIOC and MOOC). The variable is statistically significant at 1 percent and 5 percent in the overall and MIOC results respectively. The implication of this is that the sampled SSA countries used in this study have experienced better growth levels than the previous year. Concerning the measure of trade liberalization (Open), the results reveal that the coefficients of the degree of openness measuring the elasticities are less than one in absolute values in both the overall sample and the three sub-groups. This implies that a one percent change in the degree of openness brings about a less than one percent change in economic growth. It is observed that the coefficient estimates of the

degree of openness are small in all the results, this buttresses the earlier observation that the sampled SSA countries have not really benefitted from trade liberalization. But of the three sub-groups, the coefficient estimate of the degree of openness is higher in the moderately inward-oriented countries (MIOC) than in SIOC and MIOC. This means that of trade liberalization affects economic growth higher in moderately inward-oriented countries (MIOC) than in the strongly inward-oriented countries (SIOC) and moderately outward-oriented countries (MOOC). The implication of this is that the MIOC countries encourage the production of domestic goods which they can export, that is, they encourage export promotion.

The results in Table 5.17 also reveal that the coefficients of the political institutions variable (political rights – Polrig) measuring the elasticities are less than one in absolute values in both the overall and the three sub-groups of countries. This implies that a one percent change in political rights brings about a less than one percent change in economic growth. In addition, political rights is statistically significant at 1 percent in the overall and MOOC results. For the coefficient estimates, the moderately outward-oriented countries (MOOC) had a higher value than the strongly inward-oriented countries (SIOC) and the moderately inward-oriented countries. As regards economic institutions variable – repudiation risk, the results show that a one percent change in repudiation risk brings about a less than one percent change in economic growth in both the overall and three sub-groups of countries. That is, its coefficient which measures elasticity is less than one in absolute value. Also, the results show that repudiation risk is statistically significant at 5 percent in MIOC and MOOC. In terms of the coefficient estimates, of the three categories; the moderately outward-oriented countries (MOOC) had a higher value than the moderately inward-oriented countries (MIOC) and strongly inward-oriented countries (SIOC). This implies that economic institutions have a higher impact on growth in MOOC than in MIOC and SIOC.

From Table 5.17, the cultural institutions variable (ethnic tensions - Ethsion) results reveal that the coefficients of ethnic tensions measuring the elasticities are less than one in absolute values in the overall and SIOC results: this implies that a one percent change in ethnic tensions brings about a less than one percent change in economic growth. While its coefficient measuring the elasticity is greater than one in absolute value in the MOOC result and elastic (exactly one) in the MIOC result: this implies that a one percent change in ethnic tensions brings about a greater than one percent change in economic growth in MOOC and a one percent change in Ethsion brings about a proportionate change in economic growth in MIOC. Ethsion is statistically significant at 5 percent in the overall, MIOC and MOOC. In terms of the natural resource endowment (Nare), the results reveal that it is statistically significant at 5 percent in MIOC and MOOC results. In addition, the coefficients of natural resource endowment measuring the elasticities are less than one in absolute values in both the overall and the three sub-groups of countries. This implies that a one percent change in natural resource endowment brings about a less than one percent change in economic growth. As regards the coefficient estimates, the value is higher in MOOC than in MIOC and SIOC.

5.6 Tests of Hypotheses

Based on the results presented in Tables 5.11, 5.12 and 5.15, we can test the hypotheses formulated in chapter one. The hypotheses are stated in their null forms.

Hypothesis One:

H_0: There is no significant relationship between trade liberalization and economic growth in the selected SSA countries.

In Table 5.11, the results show that the measure of trade liberalization – degree of openness is not statistically significant, the study accepts the null hypothesis and

concludes that trade liberalization has no significant relationship with economic growth in the selected SSA countries. The result shows that the measure of trade liberalization (degree of openness) is statistically significant at 10 percent, but since in this study, the researcher only considered 1 and 5 percent levels of significance, this made the researcher to conclude that the degree of openness is not significant.

Hypothesis Two:

H_0: There is no significant relationship between economic, political and cultural institutions and economic growth in the selected SSA countries.

Based on the results presented in Table 5.11, it is observed that the economic institutions indicator – repudiation risk is not statistically significant since it is statistically significant at 10 percent which this study did not consider; Furthermore, it is observed from Table 5.11 that the political institutions indicator – political rights is statistically significant at 1 percent; and the cultural institutions variable – ethnic tensions is statistically significant at 5 percent, therefore, the researcher rejects the null hypothesis and conclude that political and cultural institutions have significant relationship with economic growth in the selected SSA countries. Since two out of the three types of institutions considered in this study are significant, the null hypothesis is rejected and the study concludes that institutions have significant relationship with economic growth in the selected SSA countries.

Hypothesis Three:

H_0: There is no significant relationship between the interaction effect of trade liberalization and institutions on economic growth in the selected SSA countries.

From the results in Table 5.12, it was observed that the coefficient of the variable that was used to measure if there is an interaction effect between trade liberalization and economic institutions was negative, that is, less than 0, but the

coefficients of the variables that measured the interaction effect of trade liberalization and political and cultural institutions were positive, that is, greater than 0. This implies that the impact of trade liberalization on economic growth is more significant when political and cultural institutions are involved than when economic institutions are involved. Therefore, the study rejects the null hypothesis and concludes that there is a significant relationship between the interaction effect of trade liberalization and institutions and economic growth in the selected SSA countries. Although, trade liberalization seem to affect economic growth higher when political and cultural institutions are considered than when economic institutions are considered.

Hypothesis Four:

H_0: There is no significant influence of the quality of institutions on economic growth in the sub-regions of SSA.

In Table 5.15, the results of the sub-regional classification of countries were presented. The results revealed that the economic institutions indicator – repudiation risk is not statistically significant in all the three sub-regions viz; Central Africa, East/Southern Africa and West Africa (since the study did not extend the significance level to 10 percent which this variable is significant at). Similarly, the political institutions indicator – political rights is statistically significant at 1 percent in Central Africa and East/Southern Africa while it is significant at 5 percent in West Africa. In addition, the results of the cultural institutions indicator – ethnic tensions revealed that it is statistically significant at 5 percent in Central Africa and East/Southern Africa while it is not significant in West Africa. Recall that in chapter three, the performance of institutions in these three sub-regions were descriptively analyzed, it was discovered that the quality of institutions play a significant role in influencing economic growth. Therefore, the study rejects the null hypothesis and concludes that the quality of institutions significantly influence economic growth in the sub-regions of SSA.

CHAPTER SIX

SUMMARY, RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

This chapter contains the summary of the major findings in the study, policy recommendations and the conclusion. In addition, the limitations of the study and suggestions for further research are also contained in this chapter.

6.2 Summary of Major Findings and Policy Implications

From the results presented and discussed in chapter five, this section provides a summary of the major findings and the policy implications. The main findings of the study are enumerated below:

1. In terms of the influence of trade liberalization on economic growth, the study found that the measure of trade liberalization – degree of openness does not have a significant impact on economic growth in the selected SSA countries. The implication of this is that, though international trade can be positively beneficial to a country especially if the country is an exporter of goods and services rather than being just an importer of goods and services. But the question is has these countries in SSA benefited from trade liberalization? The answer is not a total yes, because these countries are still tied to the 'apron strings' of the developed countries. This explains why the empirical result from this study shows that trade liberalization has not had a significant impact on economic growth in the selected SSA countries, although there exists a positive impact of trade liberalization on economic growth. Thus, the governments of these countries should embark on policies that will boost industrialization so as to increase the level of output and then increase their levels of exports.

2. Taking into consideration the impact of institutions on economic growth, the results reveal that cultural institutions have significant negative impact on economic growth. Political institutions have a positive impact (instead of a negative impact as postulated by theory) on economic growth. But economic institutions did not have a significant impact on growth. The results also show that out of the three forms of institutions focused on in this study, the political and cultural institutions exert a better influence on economic growth than economic institutions. The implication of this is that a politically stable country would experience better growth rate than a politically unstable one; and it is when there are no political catastrophes in a country that trading activities can take place and economic/cultural institutions can strive well. The results also imply that ethnic tensions in a country have negative influence on the level of economic growth in a country, since no country can claim to grow when there are ethnic unrests in the country, international trade is also hindered as no country would want to trade with such a country coupled with the fact that foreigners would not want to invest in such a country.

3. The result of the measure of stock of capital – gross fixed capital formation shows that it has a statistically significant impact on economic growth in the selected SSA countries in this study. This supports theoretical expectation which postulates a significant and positive influence of capital on economic growth. The implication of this result is that when there is a fall in capital which results in a fall in investment in some of these SSA countries and this has resulted in the slow rate of growth in these countries over the years. One major cause of this fall in investment can be due to financial misappropriation evident in most of these countries; monies that could have been used for viable economic projects end up in private accounts and pockets. Another hindrance is the fact that foreign investments are falling due to the political and economic instability experienced in some of these SSA countries.

4. Education which is a measure of human capital development is found to exhibit positive influence on economic growth in SSA countries. This supports theoretical assertion of a positive relationship between education and economic growth. Also, human capital growth is believed to be important in the determination of the quality of institutions (Siba, 2008). The implication of this finding is that though human capital plays a vital role in improving the level of economic growth; the story among the sampled SSA countries used in this study seems to be different empirically; human capital has not had a great impact on institutional quality. This is the aftermath effect of the fall in the education standards experienced in some of these countries. An example is Nigeria where the present university graduate is not as sound academically as the graduate of the 1970s and 1980s.

5. In terms of the influence of natural resource endowment on economic growth, the results revealed that the variable did not have a significant impact on economic growth. Theoretically, natural resource endowment has a negative impact on economic growth (Alonso and Garcimartin, 2009). But from the result of this study, the variable had a positive impact on economic growth. The implication of the positive sign of this variable could be due to the fact that natural resource endowment is supposed to be a 'blessing' to a country but in these selected SSA countries, 'resource curse' seem to be what is happening. Besides, the revenue generated from the exports of the natural resources in these selected SSA countries is not properly utilized efficiently to boost economic growth.

6. The result of the taxes variable revealed that it does not have a statistically significant impact on economic growth in the sampled SSA countries (it was significant at 10 percent which this study did not consider). This implies that taxes do not affect economic growth in the selected SSA countries. From the literature

it is observed that, a sound tax system not only provides the necessary resources to build high quality institutions, but also enables the consolidation of a social contract that gives rise to a more demanding relationship between state and citizens (Tilly, 1992; Moore, 2002). This study found that taxes have a positive relationship with economic growth. In the light of this, the implication of this is that the revenues generated from taxes in the selected SSA countries should be utilized properly towards the growth of the country, rather than embezzling the revenues from taxes.

7. Another finding from this study is that the initial level of GDP (Gdpini), the proxy for initial level of growth has a negative relationship with economic growth which supports what theory asserts (Lucas, 1988; Durlauf *et al.* 2005). The implication of this is that the current level of growth must surpass the preceding year's level of growth. But this is not totally true of the sampled SSA countries because if this was to be true, then these SSA countries should have experienced more growth than where they are now.

8. Also, the study found that in terms of the classification of the sampled SSA countries into Central, West and East/Southern African sub-regions, trade liberalization, economic and political institutions had a greater impact on economic growth in Central Africa than in West and East / Southern Africa sub-regions while cultural institutions had a greater impact on economic growth in West Africa than in Central and East / Southern Africa sub-regions. In terms of the World Bank's classification of the sampled countries into moderately inward-oriented countries (MIOC), strongly inward-oriented countries (SIOC) and moderately outward-oriented countries (MOOC), trade liberalization had a greater impact on economic growth in MIOC than in SIOC and MOOC. Economic and political institutions had a greater impact on economic growth in MOOC than in SIOC and MIOC. While cultural institutions had a greater impact on economic

growth in SIOC than in MIOC and MOOC. This implies that the impacts of trade liberalization, economic and political institutions on growth was more visible in Central Africa while cultural institutions impacted more on growth in East / Southern Africa.

9. Finally, the study found that trade liberalization is encouraged more when strong political and cultural institutions are in place than strong economic institutions. The implication of this interaction effects between trade liberalization and institutions is that international trade among countries seem to be affected more by strong political and cultural institutions than strong economic institutions. The relative peace and political stability of the SSA countries encourage trading activities to take place among the countries and with other countries of the world.

6.3 Policy Recommendations

Based on the findings noted in the previous section, a number of policy issues naturally arise from this study. Hence, the following recommendations will be useful for policy consideration.

1. Since human capital plays a crucial role in boosting economic growth in SSA countries, the study strongly recommends that the government should find ways that will be geared towards improving the stock of human capital in the SSA region. Some of these include the training and retraining of experts such as lawyers, economists, accountants, among others, in SSA countries and their respective ministries such as trade, justice, commerce and industry. This is because a well-informed and trained crop of persons that control policy formulation and implementation in these institutions are essential. This is most crucial in this 21st century era which is mostly knowledge-driven. Hence, having and engaging individuals in the region that are conversant with the rapidly

changing policy environments and the global issues would be very needful for the region's trade relations. Coupled with this is the fact that human capital also has a significant impact on the quality of institutions, and once the institutions in these countries are very strong, then economic growth would be further enhanced.

2. The study also recommends the provision of a peaceful economic and political environment needed for local and foreign investment. The governments of these SSA countries should provide financial backing in form of easy accessibility to loans (credit facilities to investors) so as to boost local investment coupled with the fact that foreign investors should also be attracted to invest in the country via improving on the state of security and embarking on conducive policies that supports investments. It is when there is huge investment in the economy that the country can experience growth which will improve on the quality of institutions in the SSA countries.

3. Furthermore, it is also recommended that there is a need to ensure that contracts are made easily enforceable. This is a very important tool that can be used to improve trade liberalization in SSA countries. The reason for this is that it will make the economic agents involved in international trade to be optimistic as they are sure that the moral hazards and adverse selection challenges are reduced. Coupled with this is the fact that the rest of the world will find it easier to trade with countries that are reputed for adequate contract enforcement more than others that are not so reputable. If effective contract enforcement procedures are in place, transaction costs will be reduced and this will eventually improve the level of trade liberalization in the region. Moreover, the governments of the selected SSA countries should encourage exports so as to harness maximum gains from trade liberalization.

4. Another recommendation the study made is the need to reduce if not totally eradicate ethnic crises in the SSA region. Over the years, some countries in the SSA region have been faced with some ethnic crises which have discouraged

foreign investors and hindered trade liberalization. In order to build strong institutions and foster economic growth, there is need to curb ethnic crisis by encouraging peaceful co-existence among the various ethnic groups.

5. In order to efficiently utilize the revenues from taxes and the exports of natural resources and further boost economic growth, corruption among public officials has to be eradicated. Corruption in public offices has become one major obstacle militating against growth in the SSA region. It is in the light of this that the study recommends that the revenues generated from taxes should be judiciously spent on economic projects that will be beneficial to the country and have a noticeable impact on economic growth. To achieve this, corruption and financial misappropriation should be eradicated, the policies to eradicate corruption should be taken seriously by the governments of these countries and anyone found liable should be prosecuted no matter his/her position in the society.

6. Moreover, the study also recommends that attention should be paid on the development of political institutions. This is achievable when the relevant authorities in a country develop an environment in which fair and predictable rules form the basis for economic and social interactions. This in turn would measure the quality of contract enforcement, the police and the courts. It also entails the government's administrative capacity in enforcing the law in order to forestall strong legal systems. In addition to this, is the provision of a conducive peaceful political atmosphere needed for investment, trade and economic growth.

7. Yet another recommendation the study made is the need for the governments of these SSA countries to make extractable rents paid on natural resources to be less cumbersome to pay; if this is done, the exports of these resources will be encouraged, thereby generating revenue needed for the growth of these SSA countries. If the governments do not do this, the outcome could be that these extractable rents sometimes appear to make the development of institutions of private property more difficult, thus giving rise to 'resource curse' (Straub, 2000).

To make matters worse, corrupt public officials are likely to capitalize on this and divert revenue that ought to go into government coffers into their private pockets.

8. Finally, the study recommends that there is a need for the selected SSA countries to keep improving on their level of growth by ensuring that they surpass the growth level of the preceding year. If this is maintained, these countries will keep experiencing more growth and not have stagnant or retarded growth. One of the ways this can be done is for these countries to encourage export promotion that will make them exporting countries rather just being importing countries. When this is done, they will earn foreign exchange that will be used for investment purposes. Another measure that the governments of these SSA countries can take in order to experience an improvement in the growth rates of the selected SSA countries, they should embark on viable economic policies that will, *ceteris paribus,* help contribute to economic growth annually in a progressive manner.

6.4 Conclusion

In the recent era especially in the wake of the 1990s, there has been an increased interest on trade liberalization, institutions and their influence on economic growth. As was elucidated in the study, though there have been increased research efforts on trade liberalization, most of the studies relate trade liberalization to economic growth, manufacturing and output growth among others. But just a few studies focused on the impact of trade liberalization and institutions on economic growth especially in SSA; other studies have used countries in Asia, Europe and the Americas as case studies. In addition, this study examined the influence of economic, political and cultural institutions on economic growth.

In view of the above and poised with the need for knowledge contribution, this study used a sample of thirty (30) countries in SSA for the period 1985-2012 to

empirically evaluate the impact of trade liberalization and institutions on economic growth. In achieving the empirical expectation, the study engaged the use of time series and cross-sectional data sourced from international databases. The study made use of two estimation techniques. The first aspect of the econometric estimation process involved the use of the Least Squares Dummy Variable (LSDV) technique. While the second aspect of the estimation process in this study employed the Generalized Method of Moments (GMM) technique. The major findings from this study revealed that trade liberalization and institutions have significant impacts on economic growth. For these SSA countries to harness maximum gains from international trade, there has to be the presence of strong institutions.

Conclusively, the study has made contribution by increasing the level of empirical researches that have been carried out on the link between trade liberalization, institutions and economic growth especially in SSA. Therefore, there is a need for the governments of SSA countries, especially the sampled countries to wake up from their slumber and pursue the growth of their economies vigorously so that they can compete with the developed countries.

6.5 Limitations of the Study

Some other similar studies had used gravity model because they examined the direction of trade, but this study examined the impact of trade liberalization and institutions on economic growth using the LSDV and GMM techniques, totally different from these other studies. One major limitation this study encountered was the unavailability of data which made the researcher to use some other alternative variables instead of the original variables envisaged. For instance, efforts were made to use other institutional measures instead of the World Governance Indicators (WGI) because the time frame of this study was from

1985-2012, but data for WGI were only available for 1997-2010. Therefore, in order to avoid distorted results, we had to use other measures which had data for the period covered in this study; and could also measure the institutional variables used in this study.

The study attempted embarking on some field visits to some countries like Botswana and South Africa which are known to be examples of countries with good institutions in SSA, to examine their trade capacity as influenced by their institutional quality. However, the exercise became elusive as a result of limitations of funds and logistics. Therefore, this aspect can be embarked upon in further research when examining a single country or a-two country analysis in a comparative manner, to carry out an in-depth case study. This will further help in adequately appraising the role of institutions in determining trade liberalization in countries.

Lastly, another limitation encountered during the research work has to do with the computer software package used. The author had wanted to initially use Eviews7 software package to carry out the estimations but had to change to the usage of STATA 11.0 software package because of its suitability to do the estimations. It took the author some few weeks to learn how to use STATA. This experience has really been very beneficial to the author as it had broadened her knowledge about the software package.

6.5.1 Suggestions for Further Studies

This study examined the impact of trade liberalization and institutions (focusing on economic, political and cultural institutions) on economic growth. Since there are other forms of institutions like financial and legal, the researcher suggests further research in this other forms of institutions and trade liberalization on economic growth. Closely linked to this is the fact that further research can make

use of other econometric techniques like Vector Auto Regression (VAR) and Two Stage Least Squares (2SLS) techniques which is different from the LSDV and GMM techniques used by this study.

This study used both cross-sectional and time series data and it focused on thirty (30) SSA countries. Further research can be done using the case of a single country like Nigeria, Ghana, South Africa or any other country of interest or examining two countries in a comparative manner to carry out an in-depth case study. This will enable the researcher see what the result would look like and will entail using only time series data. The one-country or two-country study would be country specific unlike the results that borders on the combination of countries.

Another suggested area in which further research can be carried out is in the area of examining the influence of institutions on trade liberalization. This is imperative in order to find out empirically whether the quality of institutions in a country has any significant effect on international trade performance. This will help in complementing the findings of this study. This study did not focus on this because it was not part of the objectives.

CONTRIBUTIONS TO KNOWLEDGE

1. Generally, it is assumed from the literature that time series data are stationary in nature. This prompted this study to carry out panel unit root tests to verify if the variables used in the model specified in this study are stationary or non-stationary. The results showed that the variables were stationary which means that the results of this study are not only relevant in the present time but it can also be generalized in the future time period. Invariably, the results obtained from this study are not spurious. This is one of the major contributions of this study to knowledge as the other studies did not carry out panel unit root tests.

2. This study helped us to understand the divergence/similarity across SSA countries in institutions and trade. The study examined the selected SSA countries in terms of their sub-regional classification, that is, Central, West and East/Southern Africa sub-regions; and the World Bank's classification of countries into moderately inward-oriented (MIOC), strongly inward-oriented (SIOC) and moderately outward-oriented countries (MOOC). Coupled with this is the fact that, the study made a departure from some other similar studies (in terms of scope and methodology) in that it made use of pooled data (a combination of time series and cross-sectional data) to find out the impact of trade liberalization and institutions on economic growth in selected SSA countries using the LSDV and GMM techniques. Some of the other studies have used such econometric techniques like gravity models, panel data to analyze their data.

3. This study also looked at the interaction effect of trade liberalization and economic, political and cultural institutions individually in order to find out under which type of institutional framework will trade liberalization have a better significant impact on economic growth. The study found

from empirical analysis that trade liberalization affects economic growth more significantly when strong political and cultural institutions are involved than when strong economic institutions are involved. This study makes its contribution in this area.

4. The discourse in literature is that institutions are important in determining the impact of trade liberalization on economic growth. In other words, the extent of the impact of trade liberalization on economic growth depends on the quality of institutions in the country. Therefore, by examining the link between trade liberalization, institutions and economic growth, this study had been able to validate this theoretical assertion because using empirical data from the sampled SSA countries, it was seen that the quality of institutions affect the effect of trade liberalization on economic growth.

5. The results of this study would assist in policy formulations in respect of trade liberalization, institutions (economic, political, cultural) and economic growth. This is crucial for investment and savings-output growth in these selected SSA countries. This means that these SSA countries have to see to the effective implementation of reasonable policies that will help boost exports and reduce their reliance on imports. This has not been extensively researched into, especially, in Sub-saharan Africa, so this study is making a contribution in this aspect, in order for the government authorities in these selected SSA countries to put in place measures that will help improve the quality of their institutions as well as measures that will boost social infrastructures which will further improve trade among the selected SSA countries. This definitely will boost economic growth in these SSA countries.

6. The quality of institutions goes a long way in affecting the economic growth of any country. It is in this light that this study looked at how the

quality of economic, political and cultural institutions has impacted economic growth in our selected SSA countries. One interesting thing is that the analysis of the impact of these institutions on economic growth was done one by one (that is, the analysis of the impact of economic, political and cultural institutions on economic growth was done individually). The study made its contribution to knowledge in this area as just a few studies have attempted to examine this combination in Nigeria.

REFERENCES

Abdi, T. and L. Edwards, (2002). "Trade, technology and wage inequality in South Africa", *Working Paper* No. 2002/60, DPRU.

Acemoglu, D., S. Johnson, J. Robinson and Y. Thaicharoen (2003). "Institutional causes, macroeconomic symptoms: volatility, crises and growth", *Journal of Monetary Economics,* Vol.50, pp. 49-123.

Acemoglu D., S. Johnson and J. Robinson (2004). "Institutions as fundamental cause of long run growth," Handbook of Economic Growth edited by Philippe Aghion and Steve Durlauf.

Acemoglu, D. and J. Robinson (2008). "The Role of institutions", *Commission on Growth and Development Working Paper,* No.10, pp. 10-28.

Acemoglu, D. (2010). "Institutions, factor prices and taxation: virtues of strong states?" *American Economic Review Papers and Proceedings,* Vol.100.

Addison, T. and M. Baliamoune-Lutz (2006). "Economic reform when institutional quality is weak: the case of the Maghreb", *Journal of Policy Modeling,* Vol.28, pp. 1029-1043.

Adewole, M.A and Osabuohien, E.S. (2007). "Analysis of cost of governance and its reduction options in Nigeria" *Nigerian Journal of Economic and Social Studies,* Vol.49, No.1, pp. 137-159.

Ahmed, S. and Z. Sattar, (2004). "Impact of trade liberalization: looking at the evidence", *Economic and Political Weekly,* pp. 4059-4067.

Aigbokhan, B.E. and M.I. Ailemen (2005). "Environmental issues in Nigeria's commercialization and privatization policy", *Journal of Social Sciences,* Vol.12, No.1, pp.33-48.

Ajakaiye, O. and A. Oyejide (2005). "Removing impediments to African exports", *African Journal of Economic Policy,* Vol.12, No.2, pp.133-156.

Akerlof, G. (1970). "The Market for lemon: qualitative uncertainty and the market mechanism", *Quarterly Journal of Economics,* Vol.84, pp. 488-500.

Akinkugbe, O. (2008). "Facilitating the production and export of manufactured goods in Africa and Asia: a comparative analysis using pooled/panel data", paper presented at 2008 Guy Mhone Memorial Conference on Development, organized by CODESTRIA at Lusaka, Zambia, 25- 27th July.

Alege, P. O. (1993). "Export and growth in the Nigerian economy: a causality test", *The Indian Journal of Economics,* Vol. XXIII, Part III No. 290, January.

Alesina, A., A. Devleeschauwer, W. Easterly, S. Kurlat and R. Wacziarg (2003). "Fractionalization", *Journal of Economic Growth*. Vol.8, No.2, pp. 155-194.

Alonso, J.A. and C. Garcimartin (2009). "The determinants of institutional quality: more on the debate", Centre for Research in Economic Development and International Trade (CREDIT) Research Paper, No. 09/04, University of Nottingham, United Kingdom.

Analogbei, F.C.O. (2011). "Trade reforms and productivity in Nigeria", accessed on the 25th June, 2012 from the internet.

Artadi, E. and X. Sala-i-Martin (2003). "The economic tragedy of the XXth century: growth in Africa", *NBER Working Paper,* No.W9865.

Arrelano, G. and S. Bond (2001). GMM estimation of empirical growth models. Economics Group, Nuffield College, University of Oxford. Economics Papers 2001-W23, 2001.

Babatunde, M.A. (2009). "Can trade liberalization stimulate export performance in sub-saharan Africa? *Journal of International and Global Economic Studies,* 2(1), pp. 68-92, June.

Baliamoune, M. (2002). "Assessing the impact of one aspect of globalization on economic growth in Africa", UNU/Wider Discussion Paper 91, World Institute for Development Economics Research, Helsinki: United Nations University.

Baliamoune-Lutz, M. and L. Ndikumana (2007). "The growth effects of openness to trade and the role of institutions: new evidence from African countries", Economics Department Working Paper Series, Paper 38, University of Massachusetts, Amherst, USA.

Becker, G.S. (1985). "Public policies, pressure groups and dead-weight cost", *Journal of Public Economics,* Vol.28, No.3, pp. 329-347.

Berg, J. and S. Cazes (2009). "The doing business indicators: measurement issues and political implications", *ILO Economic and Labour Market Paper* 2009/8.

Bertocchi, G. and A. Guerzoni (2010). "Growth, history or institutions? what explains states fragility in sub-Saharan Africa", *IZA Discussion Paper,* No.4817

Bhagwati, J. (1988). "Export-promoting strategy: issues and evidence", World Bank Research Observer, Washington, Vol. 3, pp. 27-56.

Bhattacharyya, S. (2011). "Trade liberalization and institutional development", *IZA Discussion Paper,* No. 4853.

Bhowon, V., N. Boodhoo and P.A. Chellapermal, (2004). *Mauritius: Policy-making in Africa,* in C.C. Soludo, O. Ogbu and H. Chang (eds.) The Politics of Trade and Industrial Policy in Africa: Forced Consensus?, pp. 179-204, New Jersey: Africa World Press.

Blundell, R. and S. Bond (1998). "Initial conditions and moment restrictions in dynamic panel data models", *Journal of Econometrics,* Vol. 87, pp.11-143.

Blundell, R., S. Bond and F. Windmeijer (2000). "Estimation in dynamic panel data models: improving on the performance of the standard GMM estimator", Institute for Fiscal Studies, *IFS Working Papers,* W00/12.

Bond, S. A. Hoeffler and J. Temple (2001). "GMM estimation of empirical growth models. Economics Group, Nuffield College, University of Oxford, *Economics Papers,* 2001-W21.

Botero, J., S. Djankov, R. LaPorta, F. Lopez-de-Silanes and A. Shleifer (2004). "The regulation of labour", *NBER Working Paper,* No. 9756.

Bouis, R., R. Duval and F. Murtin (2011). "The policy and institutional drivers of economic growth across OECD and Non-OECD Economies: new evidence from growth regressions", OECD Economics Department Working Papers, No. 843, OECD Publishing.

Buchanan, J.M. and J. Tullock (1962). *The Calculus of Consent,* Ann Arbor: University of Michigan Press.

Bun, M.J.G. and F. Windmeijer (2009). "The weak instrument problem of the system GMM estimator in dynamic panel data models", *Tinbergen Institute Discussion Paper,* TI 2009-086/4.

Busari, D.T. and P.C. Omoke (2005). "The impact of trade policy reforms on rural poverty: evidence from Nigeria", *Nigeria Journal of Economics and Social Science,* Vol. 4, pp. 625-665.

Cellini, R. (1997). "Implications of Solow's growth model in the presence of a stochastic steady state", *Journal of Macroeconomics*, Vol. 19, pp. 135-153.

Chandra, A.C., L.A. Lontoh, and A. Margawati (2010). "The gender implications of trade liberalization in Southeast Asia", *International Institute for Sustainable Development,* Canada.

Chaudhuri, S., S. Yabuuchi and U. Mukhopadhayay (2006). "Inflow of foreign capital and trade liberalization in a model with an informal sector   and urban unemployment", *Pacific Economic Review*, 11(1), pp. 87-103.

Chong, A. and L. Zanforlinm (2000). "Law tradition and institutional quality: some empirical evidence", *Journal of International Development*, Vol. 12 (8), pp. 1057-1068.

Christer, A., O. Kupets and H. Lehmann (2005). "Trade liberalization and employment effects in Ukraine", *Discussion Paper,* No. 1826, Institute for the Study of Labour (IZA), October.

Clague, C., P. Keefer, S. Knack and M. Olson (1999). "Contract-intensive money: contract enforcement, property rights and economic Performance", *Journal of Economic Growth,* Vol.82, No.4, pp. 185-211.

Claustre, B.M., J.K. Timoh and J.R. Kim (2008). "Trade liberalization, growth and productivity". Paper presented at the Conference titled 'New directions in International Trade Theory' at the University of Nottingham, April.

Coase, R. (1992). "The institutional structure of production", *American Economic Review,* Vol.82, No.4, pp.713-719.

Collier, P. and J.W. Gunning (1999). "Explaining African economic performance", *Journal of Economic Literature,* Vol.37, pp. 64-111.

Collier, P. and A. Hoeffler (1998). "On the economic causes of civil war", *Oxford Economic Papers,* Vol.50, pp.563-573.

Collier, P. (2009). "Re-inserting Africa into the global economy", *Keynote Address at Development Workshop,* Gothenburg University, Sweden, 1st-2nd October.

Davidson, R. and J.G. Mackinnon (2004). *Econometric Theory and Methods,* New York: Oxford University Press.

Davis R. D. and P. Mishra (2007). "Stolper-Samuelson is dead and other crimes of both theory and data" in Harrison A. (Ed.), *Globalization and Poverty*.

Djankov, S. and R. Ramalho (2009). "Employment laws in developing countries", *Journal of Comparative Economics,* Vol.37, pp. 3-13.

Djeri-wake, N (2009). "The impact of Chinese investment and trade on Nigeria economic growth", African Trade Policy Centre, Economic Commission for Africa, No.77, pp. 1-29.

Dollar, D. and A. Kraay (2003). "Institutions, trade and growth", *Journal of Monetary Economics,* Vol.50, pp. 133-162.

Du, J. (2010). "Institutional quality and economic crises: legal origin theory versus colonial strategy", *The Review of Economics and Statistics,* Vol.92, No.1, pp.173-179.

Durlauf, S.N., P.A. Johnson and J.R.W. Temple (2005). "Growth econometrics", Handbook of Economic Growth, Volume 1A, pp. 576-580.

Easterly, W. (2008). "Design and reform of institutions in LDCs and transition economies institutions: top down or bottom up?" *American Economic Review,* Vol.98, No.2, pp.95-99.

Easterly, W. and R. Levine (2003). "Africa's growth tragedy: policies and ethnic divisions", *Quarterly Journal of Economics,* Vol.112, No.4, pp.1203-50.

Edwards, S. (1998) "Trade, productivity and growth: what do we really know?" *Economic Journal, Vol.* 108, pp. 383-398.

Fajana, O. (1979). "Trade and growth: the Nigerian experience", *World Development7*, pp. 73-78.

Feenstra, C. R., and H. G. Hanson (1996). "Globalization, outsourcing and wage inequality author(s): Hanson", *The American Economic Review*, Vol. 86, No. 2, pp.240-245.

Fitzgerald, E.V.K. and G. Perosino (1987). "Trade liberalization, employment and wages: a critical approach". Queen Elizabeth House Oxford, Centio Studi Luca D'Agliano *Queen House Working Paper,* No. 87.

Flaig, G. and H. Rottman (2007). "Labour market institutions and the employment intensity of output growth: an international comparison", *CESIFO Working Paper,* No. 2175, December.

Foroutan, F. (1993). "Trade reform in ten sub-saharan African countries: achievements and failures", *World Bank Policy Research Paper,* No. 1222.

Fosu, A.K., R. Bates and A. Hoeffler (2006). "Institutions, governance and economic growth in Africa: an overview", *Journal of African Economies,* Vol.15, Supplement 1, pp.1-9.

Fosu, A.K. (2008). "Democracy and growth in Africa: implications of increasing electoral competitiveness", *Economics Letters,* Vol.100, pp. 442-444.

Gallup, J.L., J. Sachs and A. Mellinger (1998). "Geography and economic development", NBER Working Paper, No. 6849, Cambridge, Massachusetts, National Bureau of Economic Research.

Gamberoni, E., E. von Uexkull and S. Weber (2010). "The role of openness and labour market institutions for employment dynamics during economic crises", *Employment Working Paper,* No.68, International Labour Office, Geneva.

Garba, A. (2003). "The Past, present and possible futures of Africa", in A. Garba (ed.) Development Thought, Policy Advice and Economic Development in the 20th Century: Lessons for the 21st Century, pp. I-LV, Ibadan: Nigerian Economic Society.

Gaston, N. and D. Nelson (2011). *International Migration* in D. Bernhofen, R. Falvey, D. Greenaway, and U. Kreickemeier (Eds.), Handbook of International Trade. London: Palgrave.

Gerrishon, K., J. Olewe-Nyunya and W. Odhiambo (2004). *Kenya: Formulation and Implementation of Strategic Trade and Industrial Policies,* in C.C. Soludo, O. Ogbu and H. Chang (eds) The Politics of Trade and Industrial Policy in Africa: Forced Consensus? New Jersey: Africa World Press, pp. 205-224.

Glitz, A. (2012). "The labour market impact of immigration: A quasi-experiment exploiting immigrant location rules in Germany", *Journal of Labour Economics,* Vol.30, No.1, pp.175–213.

Greif, A. (1998). "Historical and comparative institutional analysis", *American Economic Review,* Vol.88, No.2, pp. 80-84.

Greif, A. (2006). *Institutions and the Path to Modern Economy: Lessons from Medieval Trade,* Cambridge: Cambridge University Press.

Grosh, B. (1994). "Contract farming in Africa: an application of the new institutional economics", *Journal of African Economies,* Vol.3 No.2, pp.231-261.

Gujarati, D. N. and D.C. Porter (2009). *Basic Econometrics,* 5th Edition, New York: McGraw Hill.

Gwartney, J. and R. Lawson (2003). "The concept and measurement of economic freedom," *European Journal of Political Economy* 19, pp. 405–430.

Hare, P. (2006). "Institutions and trade liberalism", IPPG Briefing Note No.4, School of Environment and Development, University of Manchester, United Kingdom. July.

Hasan R., D. Mitra and K. V. Ramaswamy (2003). "Trade reforms, labour regulations and labour-demand elasticities: empirical evidence from India", Economic Series, No. 59, *East-West Centre Working Papers,* June.

Hasan R., D. Mitra and K. V. Ramaswamy (2003). "Trade reforms, labour regulations and labour-demand elasticities: empirical evidence from India", *Working Paper,* No. 9879, National Bureau of Economic Research, July.

Hasan R., D. Mitra and K. V. Ramaswamy (2007). "Trade reforms, labour regulations and labour-demand elasticities: empirical evidence from India", *The Review of Economics and Statistics*, Vol. 89, No.3, pp. 466-481.

Hassan, I., P. Wachtel and M. Zhou (2009). "Institutional development, financial deepening and economic growth: evidence from China", *Journal of Banking and Finance,* Vol.33, pp. 157-170.

Hecksher, E. F. and B. Ohlin (1933). *Interregional and International Trade,* Cambridge: Harvard University Press.

Heid, B. and M. Larch (2012). "Migration, trade and unemployment", *World Bank Policy Research Paper,* No. 5673.

Huang, J. and C. Chen (1999). "Effects of trade liberalization on agriculture in China: commodity aspects", Working Paper No.43, the Regional Co-ordination Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific (CGPRT Centre).

Ige, C.S. (2007). "Investment-based economy or rogue economy: which way Nigeria", Covenant University Public Lecture Series, Vol. 13, 31st May.

Ike, D. (1977). "A comparison of communal, freehold and leasehold tenure: a preliminary study in Ibadan and Ife, Western Nigeria", *the American Journal of Economics and Sociology,* Vol. 36, No.4, pp. 187-196.

Ike, D. (2009). "Corruption and its impact on the economic development of Nigeria", Covenant University Public lecture Series, Vol. 28, 17th April.

Ike, D. (1984). "The system of land rights in Nigerian agriculture", t*he American Journal of Economics and Sociology,* Vol.43, No. 4, pp. 469-480.

International Monetary Fund (2005). World Economic and Financial Surveys: Regional Economic Outlook – SSA, Washington DC: IMF.

International Monetary Fund (2009b). "World Economic Outlook: Building Institutions," Washington DC: IMF

Iyoha, M. and D. Oriakhi (2002). "Explaining African economic growth performance: the case of Nigeria", *Report on Nigeria Case Study, African Economic Research Consortium Research –AERC Project,* Nairobi: AERC.

Jhingan, M. L. (2007).*The Economics of Development and Planning,* 39th Edition, India: Vrinda Publications.

Kagochi, J., N.O. Tackie and H. Thompson (2007). "An analysis of the impacts of freedom on economic growth, *Journal of African Development,* Vol.1, No.1, Spring.

Kaufmann, D., A. Kraay and M. Mastruzzi (2008). "Governance matters VII: aggregate and individual governance indicators 1996-2007", *World Bank Policy Research Working Paper,* No. 4654.

Kaufmann, D., A. Kraay and M. Mastruzzi (2009). "Governance matters VIII: aggregate and individual governance indicators 1996-2008", *World Bank Policy Research Working Paper,* No. 4978.

Kaufmann, D., A. Kraay and M. Mastruzzi (2010). "The Worldwide governance indicators: a summary of methodology, data and analysis". *World Bank Policy Research Working Paper,* No. 5430.

Kapsos, S. (2004). "Estimating growth requirements for reducing working poverty: can the world half working poverty by 2015?" *Employment Strategy Papers,* No. 2004/14, Employment Strategy Department, Geneva: ILO.

Kimenyi, M.S. (2006). "Ethnicity, governance and the provision of public goods", *Journal of African Economies,* Vol. 15, Supplement 1, pp. 62-99.

Krueger, A. O. (1999). "Trade and employment in developing countries, volumes: synthesis and conclusion". National Bureau of Economic Research Monograph.

Lall, S. (2004). *Selective Industrial and Trade Policies in Developing Countries: Theoretical and Empirical Issues,* in C.C. Soludo, O. Ogbu and H. Chang (eds.) The Politics of Trade and Industrial Policy in Africa: Forced Consensus?, pp. 75-110. New Jersey: Africa World Press.

LaPorta, R., F. Lopez-de-Silanes, A. Schleifer and R. Vishny (1999). "The quality of government", *the Journal of Law, Economics and Organization,* Vol.15, No1, pp. 222- 279.

Lavallee, E. (2005). "Institutional similarity, institutions' quality and trade", EURIsCO, Paris: Universite Paris Dauphine.

Lee, E. (2005). "Trade liberalization and employment", *DESA Working Paper,* No. 5, October.

Lewis, W.A. (1954). *Economic Development with Unlimited Supply of Labour, Manchester School*, Vol.22, May, pp.139-191. Reprinted in A.N. Agarwal and S.P. Singh (eds.) *Economics of Underdevelopment* (1958), London: Oxford University Press.

Lucas, R. (1988). "On the mechanics of economic development", *Journal of Monetary Economics,* Vol. 22, No.1, pp.3-42.

Lyakurwa, W.M. (2007). "The business of exporting: transaction costs facing suppliers in sub-saharan Africa", AERC Framework Paper on Export Supply Response Constraints in Sub-Saharan Africa, Dar es Salaam, Tanzania, 23rd -24th April.

Maclean, F.J. (2006). "The impact of globalization on employment in the Nigerian Economy: the case of the manufacturing sector". An unpublished PhD Thesis submitted to the Department of Economics, University of Nigeria, Nsukka.

McMillan, J. and C. Woodruff (1999). "Dispute prevention without courts in Vietnam", *Journal of Law, Economics and Organization,* Vol.15, No.13, pp.637-658.

Mankiw, G.N., D. Romer, and D.N. Weil (1992). "A contribution to the empirics of economic growth", *Quarterly Journal of Economics,* Vol. 107, No.2, pp. 407–437.

Márquez-Ramos, L. (2010). "Understanding the determinants of international trade in African countries: an empirical analysis for Ghana and South Africa", *The Economic Journal,* Vol. 168, No. 509, pp. 23-45.

Matthews, R.C. (1986). "The economics of institutions and the sources of growth", *The Economic Journal,* Vol.96, No.384, pp. 903-918.

Mauro, P. (1995). "Corruption and growth", t*he Quarterly Journal of Economics,* Vol.110, No.3, pp. 681-712.

Meon, P. and K. Sekkat (2008). "Institutional quality and trade: which institutions which trade?" *Economic Inquiry,* Vol.46, Issue 2, pp. 227-240.

Meier, G. (1995). *Leading Issues in Economic Development,* United Kingdom: Oxford University Press.

Mesike, C.S., D.Y. Giroh and O.E.D. Owie (2008). "Analyzing the effect of trade liberalization policy on Nigerian rubber industry", *Journal of Agriculture and Social Sciences.*

Meyer, K.E., S. Estrin, S.K. Bhaumik and M.W. Peng (2009). "Institutions, resources and entry strategies in emerging economies", *Strategic Management Journal,* Vol. 30, No.1, pp. 61-80.

Moore, M. (2002). *Death without Taxes: Democracy, State Capacity and Aid Dependency in the Fourth World,* in White G. and Robinson M. (eds.): Towards a Democratic Developmental State. London: Oxford University Press.

Morrissey, O. and A. Mold (2011). "Explaining Africa's Export Performance – Taking a New Look", a paper presented at the thirteenth Conference of GTAP, Addis-Ababa, Ethiopia.

Mwaba, A. (2000). "Trade liberalization and growth: policy options for African countries in a global economy", *Economic Research Papers,* No. 60, African Development Bank.

Natal, A. (2001). The new institutional economics: a general introduction, Decocumento De Disscusion Sobre El Neuvo Institucionalismo, No.1, pp. 4-21.

Ng, F. and A. Yeats (1996). "Open economies work better! did Africa's protectionist policies cause its marginalization in world trade?" *World Bank Working Paper,* No. 1636.

Nickell, S., L. Nunziata, and W. Ochel (2005). "Unemployment in the OECD since the 1960s. what do we know?" *Economic Journal,* Vol. 115, pp. 1-27.

North, D.C. (1991). "Institutions", *the Journal of Economic Perspectives,* Vol.5, No.1, Winter.

North, D.C. (2005). *Understanding the Process of Economic Change,* New Jersey: Princeton University Press.

Nunziata, L. (2002). "Unemployment, labour market institutions and shocks", Economics Group, Nuffield College, University of Oxford, No 2002-W16.

Ofoegbu, O. E. (2010). "Productive employment generation in a transition economy: a Nigerian perspective", *Journal of Emerging Trends in Economics and Management Sciences,* Vol.1, No.2, pp. 121-127.

Ogunkola, E.O., A.S. Bankole and A.O. Adewuyi (2006). "An evaluation of the impact of Nigeria's trade and investment policy reforms", a report sponsored by the African Economic Research Consortium (AERC), Nairobi, Kenya.

Ogunrinola, I. O. and E.S.C. Osabuohien (2010). "Globalization and employment generation in Nigeria's manufacturing sector (1990-2006), *European Journal of Social Sciences,* Vol. 12, No 4.

Okodua, H. (2010). "Migrant workers' remittances and output growth in sub-saharan African countries". An unpublished PhD Thesis submitted to the Department of Economics and Development Studies, Covenant University, Ota, Ogun State, Nigeria.

Olayiwola, K. and Busari, D.T. (2008). "Macroeconomic stability or good institutions of governance, what is Africa getting wrong?", Department of Economics and Development Studies Seminar series, Covenant University, Ota, 6th February.

Olomola, P.A. (2007). "Oil wealth and economic growth in oil exporting African countries", *African Economic Research Consortium – AERC Research Paper,* No. 170.

Omoke, P.C. (2006). "Trade policy reforms and rural poverty in Nigeria", a paper presented at the GETAP Conference in Ethiopia.

Onlinenigeria.com (2010). The Nigerian export processing zones schemes, accessed on the 17th May, 2012 from http://www.onlinenigeria.com/agriculture/?blurb=483.

OECD-DAC (2011). Aid Activities Database Creditor Reporting System.

Osabuohien, E.S.C. (2010). "Analysis of international trade performance in selected sub-saharan African countries: impact of institutional framework". An unpublished PhD Thesis submitted to the Department of Economics and Development Studies, Covenant University, Ota, Ogun State, Nigeria.

Oyejide, T.A and A.S. Bankole (2001). "Liberalization of the services sector in Nigeria: implications of unilateral and multilateral approaches", a paper prepared for the African Economic Research Consortium (AERC) on Services Sector Liberalization in Nigeria, January.

Oyejide, A. (1997). "Trade and regional integration in the development context: emerging patterns, issues and lessons for sub-saharan Africa", *Journal of African Economies*, Vol. 7, Supplement 1.

Oyejide T. A., B. Ndulu, and J. W. Gunning (1999). "Introduction and overview," *Regional Integration and Trade Liberalization in Sub-Saharan Africa*. Vol.2. Country Case-Studies. New York: St. Martin's Press Inc.

Papaioannou, E. (2009). "What drives international financial flows? politics, institutions and other determinants", *Journal of Development Economics,* Vol.88, pp. 269-281.

Parkin, M., M. Powell, and K. Matthews, (2008). *Economics,* 7th Edition, United Kingdom: Pearson Education Limited.

Parsons, N. and J. Robinson (2006). "State, society and governance in Botswana", *Journal of African Economies,* Vol.15, Supplement 1, pp. 100-140.

Persson, T.F., G. Roland and D. Tabellini (2003), "Trade liberalization, product variety and growth in a small open economy: a quantitative assessment", *Journal of International Economics,* Vol.56, No.2, pp. 247- 272.

Revenga, A. (1992). "Exporting jobs? the impact of import competition on employment and wages in US manufacturing", *Quarterly Journal of Economics*, Vol. 107, No. 1, pp. 255-284.

Revenga, A. (1997). "Employment and wage effect of trade liberalization: the case of Mexican manufacturing" Paper prepared for World Bank Labour Market Workshop. The World Bank Washington, D.C.

Rodriguez, F. and D. Rodrik (2001). *Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence,* in Bernanke, B. and K.S. Rogoff (eds.), Macroeconomics Annual 2009. Cambridge, MA: MIT Press.

Rodrik, D. (1995). "Trade strategy, investment and exports: another look at East Asia", *NBER Working Paper*, No. 5339, Cambridge, MA.

Rodrik, D. (1998). "Trade policy and economic performance in sub-saharan Africa", Expert Group on Development Issues (EGDI), Vol. 1, Swedish Ministry of Foreign.

Rodrik, D. (2001). "The global governance of trade as if development really mattered", Trade and Human Development Series, UNDP, New York.

Rodrik, D. (2008). "Second-best institutions", *American Economic Review,* Vol.98, No.2, pp.100-104.

Rodrik, D., A. Subramanian and F. Trebbi (2004). "Institutions rule: the primacy of institutions over geography and integration in economic development", *Journal of Development Economics,* Vol.78, No.2, pp. 529-547.

Romer, P. (1986)."Increasing returns and long-run growth", *Journal of Political Economy,* Vol.94, No.5, pp.1002-1037.

Roodman, D. (2009). "How to do xtabond2: an introduction to difference and system GMM in Stata", *Stata Journal,* Vol.9, No.1, pp. 86-136.

Sachs, D.J. and A.M. Warner (1997). "Fundamental sources of long-run growth", *American Economic Review,* Vol. 87, pp. 184-188.

Sankaran, U., V. Abraham and K.J. Joseph (2009). "Impact of trade liberalization on employment: the experience of India's manufacturing industries", accessed from the internet on July 5th, 2011.

Schneider, F. and D. Enste, (2000). "Shadow economies: size, causes and consequences", *Journal of Economic Literature,* Vol.38, pp.77–114.

Segura-Cayuela, R. (2006)."Inefficient policies, inefficient institutions and trade", *Documentos de Trabajo BANCO DE ESPANA Madrid,* No.0633.

Sen, K., (2008). "International trade and manufacturing employment outcomes in India: a comparative study", *Research Paper,* No.2008/87, UNU-WIDER.

Shirley, M.M. (2003). "What does institutional economics tell us about development?" a paper presented at ISNIE, 2003, Budapest, Hungary.

Siba, E.G. (2008). "Determinants of institutional quality in sub-saharan African countries". Working Papers in Economics, No. 310, School of Business, Economics and Law, University of Gothenburg, Sweden. June.

Soares, A. (2003). "Once more into the breach: economic growth and integration," Center for Global Development Working Paper No. 34, December.

Solow, R. M. (1956). "A contribution to the theory of economic growth*", Quarterly Journal of Economics,* Vol. 70, pp. 65-94.

Soludo, C.C. and O. Ogbu (2004). *A Synthesis of Major Themes in the Political Economy of Trade and Industrialization in Africa,* in C.C. Soludo, O. Ogbu and H. Chang (eds) The Politics of Trade and Industrial Policy in Africa: Forced Consensus?, pp. 1-42, New Jersey: Africa World Press.

Straub, S. (2000). Empirical determinants of good institutions, do we know anything? Inter-American Development Bank, *Research Department Working Paper,* No 423.

Temple, J. (1999). "The new growth evidence," *Journal of Economic Literature,* Vol.37, pp. 112-156.

Todaro, M. P. and S. C. Smith (2011). *Economic Development,* 12th Edition, Delhi: Pearson Education.

Tilly, C. (1992). *Coercion, Capital and European States, AD 990-1992,* Oxford: Blackwell.

Umo, G.S. (2001). "Governance, policies and the growth of Nigeria's agriculture", *Nigerian Journal of Economic and Social Studies,* Vol.43, No.3, pp. 340-364.

United Nations Conference on Trade and Development – UNCTAD (2005). "Evolution in the terms of trade and its impact on developing countries", Trade and Development Report, Geneva: United Nations.

Wacziarg, R. and K. Welch (2008). "Trade liberalization and growth: new evidence", *World Bank Economic Review*.

Wei, W.S. (2006). **Time series analysis: univariate and multivariate.** Boston: Pearson Limited.

Werner, B. (1972). "Import substitution and industrialization in Latin America: experiences and interpretations", *Latin American Research Review,* Vol.7, Spring, pp.95-122.

Williamson, O.E. (2000). "The new institutional economics: taking stock, looking ahead", *Journal of Economic Literature,* Vol.38, No.3, pp. 595-613.

Wooldridge, J.M. (2011). *Introductory Econometrics: A Modern Approach.* London: McGraw Hill.

World Bank (1987). World Development Reports 1987, Washington DC: World Bank.

World Bank (2002). "Building institutions for markets", *World Development Report*, Washington DC: The World Bank.

World Bank (2011). IDA Resource Allocation Index (IRAI) – 2011, accessed on the 20[th]September, 2011 from (http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONM ENT/EXTDAT ASTA/0, contentMDK:21115900~menuPK:64 168445~piPK:64168309~theSitePK:2875751,00.html).

World Bank (2011). *Africa Development Indicators,* Washington DC: The World Bank.

World Bank Group (2011). *World Trade Indicators 2010/11*. http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/TRADE/0, contentMDK:22421950~pagePK:148956~piPk:216618~theSitePK:23907 1,00.html. Accessed on 15th March 2012.

World Population Reference Bureau (2011). *World Population Data Sheet* <www.prb.org. Accessed on the 20th May, 2012.

World Trade Organization – WTO (2011). *Trade Policy Review*, TPRB/251, Geneva: WTO.

Yang, Y. and S. Gupta (2007). "Regional trade arrangements in Africa: past performance and the way forward", *African Development Review,* Vol. 19, Issue 3, pp. 399-431.

Yanikaya, H. (2003). "Trade and economic growth: a cross country empirical investigation", *Journal of Development Economics,* Vol.72, pp. 57-89.

Yeats, A. (2010). "Did domestic policies marginalize Africa in world trade", World Bank, Directions in Development Series.

Yule, G.U. (1989). "Why do we sometimes get nonsense corrections between time series? A study in sampling and the nature of time series", Royal Statistical Society.

Appendix I: Panel Data Structure and List of Countries

Table A1.1: Panel Data Structure

i	t	y	x
1	t_1	y_{11}	x_{11}
1	t_2	y_{12}	x_{12}
1	t_3	y_{13}	x_{13}
.	.	.	.
.	.	.	.
.	.	.	.
1	t_T	y_{T1}	x_{T1}
2	t_1	y_{21}	x_{21}
2	t_2	y_{22}	x_{22}
2	t_3	y_{23}	x_{23}
.	.	.	.
.	.	.	.
.	.	.	.
2	t_T	y_{T2}	x_{T2}
.	.	.	.
.	.	.	.
.	.	.	.
N	t_N	y_{TN}	x_{TN}

Table A1.2: List of Countries and their Identifier (id)

id	Central Africa	id	East and Southern Africa	id	West Africa
1	Angola	3	Botswana	2	Benin Republic
4	Burundi	10	Djibouti	6	Cape Verde
5	Cameroon	12	Ethiopia	9	Cote d'Ivoire
7	Chad	16	Kenya	14	Gambia
8	Congo	17	Lesotho	15	Ghana
11	Equatorial Guinea	18	Madagascar	21	Niger
13	Gabon	19	Malawi	22	Nigeria
23	Rwanda	20	Mozambique	24	Senegal
		25	South Africa		
		26	Sudan		
		27	Swaziland		
		28	Tanzania		
		29	Uganda		
		30	Zambia		

Source: UNCTAD (2009) Handbook of Statistics; WTO (2009) International Trade Statistics

Table A1.3: List of selected SSA countries based on trade-oriented Classification

Moderately Inward-Oriented Countries	Strongly Inward-Oriented Countries	Moderately Outward-Oriented Countries
Botswana	Angola	Benin Republic
Cameroon	Burundi	Chad
Cape Verde	Ethiopia	Congo Republic
Cote d'Ivoire	Ghana	Equatorial Guinea
Djibouti	Madagascar	Gabon
Gambia	Nigeria	Mozambique
Kenya	South Africa	Niger
Lesotho	Sudan	Rwanda
Malawi	Tanzania	Swaziland
Senegal	Zambia	Uganda

Source: World Bank, 2007.

APPENDIX II: Hausman Test

Table A2.1: Hausman Test between FE and RE

hausman fe re

```
           ---- Coefficients ----
        |       (b)          (B)            (b-B)       sqrt(diag(V_b-V_B))
        |        fe           re          Difference           S.E.
--------------+-------------------------------------------------------------------------------
  lgdpini |   -.3432096    -.3287435       -.0144661         .0064746
    lgkap |    .3581586     .3630029       -.0048443         .0107187
   lssenr |   -.1031496    -.0765512       -.0265984         .0208099
   lpsenr |    .2130704     .2293822       -.0163118         .0089972
     llab |    .0479995     .1783024       -.1303029         .0866996
    lopen |   -.1290892    -.1018618       -.0272273         .0085452
  lethsion |  -.3481124    -.3592369        .0111246         .0136384
  lreprisk |   .0879661     .1198021        -.031836         .0232223
   lpolrig |  -.1203411    -.1522454        .0319043         .0146906
    ltaxes |  -.1139865    -.1117163       -.0022702         .0123415
     lnare |  -.0422849    -.0430707        .0007858         .0011651
--------------------------------------------------------------------------------------------
```

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(11) = (b-B)'[(V_b-V_B)^(-1)](b-B)
    =   5.63
Prob>chi2 =   0.0008
(V_b-V_B is not positive definite)

APPENDIX III: Unit Root Tests

Table A3.1: Sample of Panel Unit Root Tests' Results

xtunitroot fisher Lngrgdp, dfuller lags(0)

Fisher-type unit-root test for Lngrgdp

Based on augmented Dickey-Fuller tests

Ho: All panels contain unit roots   Number of panels   =   30

Ha: At least one panel is stationary   Avg. number of periods = 26

AR parameter: Panel-specific   Asymptotics: T -> Infinity

Panel means: Included

Time trend: Not included

Drift term: Not included   ADF regressions: 0 lags

		Statistic	p-value
Inverse chi-squared(34)	P	206.0207	0.0000
Inverse normal	Z	-10.1510	0.0000
Inverse logit t(89)	L*	-13.6912	0.0000
Modified inv. chi-squared	Pm	20.8606	0.0000

P statistic requires number of panels to be finite.

Other statistics are suitable for finite or infinite number of panels.

----

xtunitroot fisher Lngkap, dfuller lags(0)

Fisher-type unit-root test for Lngkap

Based on augmented Dickey-Fuller tests

Ho: All panels contain unit roots   Number of panels =   30

Ha: At least one panel is stationary   Number of periods =   26

AR parameter: Panel-specific   Asymptotics: T -> Infinity

Panel means: Included

Time trend: Not included

Drift term: Not included   ADF regressions: 0 lags

                   Statistic   p-value

		Statistic	p-value
Inverse chi-squared(34)	P	142.8909	0.0034
Inverse normal	Z	3.8298	0.0023
Inverse logit t(89)	L*	3.8968	0.0036
Modified inv. chi-squared	Pm	-1.5618	0.0043

P statistic requires number of panels to be finite.

Other statistics are suitable for finite or infinite number of panels.

----

xtunitroot fisher Lnethsion, dfuller lags(0)

Fisher-type unit-root test for Lnethsion

Based on augmented Dickey-Fuller tests

```
------------------------------------------------------------------------------------------
Ho: All panels contain unit roots          Number of panels  =   30
Ha: At least one panel is stationary        Number of periods =   26
AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:  Not included                   ADF regressions: 0 lags
------------------------------------------------------------------------------------------
                                    Statistic     p-value
------------------------------------------------------------------------------------------
 Inverse chi-squared(60)     P      244.4732      0.0000
 Inverse normal              Z       -8.9857      0.0000
 Inverse logit t(154)        L*     -10.9129      0.0000
 Modified inv. chi-squared   Pm      16.8400      0.0000
------------------------------------------------------------------------------------------
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
------------------------------------------------------------------------------------------
```

xtunitroot fisher Lnopen, dfuller lags(0)

Fisher-type unit-root test for Lnopen

Based on augmented Dickey-Fuller tests

Ho: All panels contain unit roots   Number of panels =   30

Ha: At least one panel is stationary   Number of periods =   26

AR parameter: Panel-specific   Asymptotics: T -> Infinity

Panel means: Included

Time trend: Not included

Drift term: Not included   ADF regressions: 0 lags

                                  Statistic   p-value

 Inverse chi-squared(34)   P   181.0937   0.0002

 Inverse normal   Z   -8.4681   0.0019

 Inverse logit t(89)   L*   -7.9269   0.0017

 Modified inv. chi-squared   Pm   1.9256   0.0021

 P statistic requires number of panels to be finite.

 Other statistics are suitable for finite or infinite number of panels.

APPENDIX IV: Sample of Results of the Growth Model

Table A4.1: LSDV Result for Growth Model

reg lgrgdp lgdpini lgkap lssenr lpsenr llab lopen lethsion lreprisk lpolrig ltaxes lnare icountry*

note: icountry28 omitted because of collinearity.

Source	SS	df	MS			
Model	135.113944	40	3.3778486			
Residual	452.274621	672	.67302771			
Total	587.388565	712	.824983939			

Number of obs = 713
F(40, 672) = 5.02
Prob > F = 0.0000
R-squared = 0.2300
Adj R-squared = 0.1842
Root MSE = .82038

lgrgdp	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lgdpini	-.4148712	.1106929	-3.75	0.000	-.6322167	-.1975257
lgkap	.4761802	.0705585	6.75	0.000	.3376386	.6147218
lssenr	.3041398	.1610337	1.99	0.059	.6203296	.01205
lpsenr	.4611186	.2228887	2.07	0.039	.0234766	.8987606
llab	.6114035	.3505111	1.75	0.080	2.781289	1.558482
lopen	.0229637	.0173809	1.97	0.067	.2927111	.2467837
lethsion	-.7442852	.3684059	-2.07	0.044	-.509225	-1.997795
lreprisk	.0920866	.0683449	1.92	0.073	.1599187	.3440919
lpolrig	.341813	.1039033	3.29	0.001	.5458273	.1377988
ltaxes	.1977974	.1054677	1.86	0.074	.4834232	.0878285
lnare	.0327056	.0160915	1.91	0.087	.0701918	.0047806
icountry1	.5273634	.3371118	1.56	0.118	-.1345556	1.189283
icountry2	-.0268298	.4233578	-0.06	0.949	-.858093	.8044334
icountry3	-.0269343	.8273293	-0.03	0.974	-1.651396	1.597527
icountry4	-.143129	.3914021	-0.37	0.715	-.9116472	.6253891
icountry5	.1650519	.5139374	0.32	0.748	-.8440644	1.174168
icountry6	.4746588	.7542866	0.63	0.529	-1.006383	1.955701
icountry7	.3143345	.4136605	0.76	0.448	-.4978881	1.126557
icountry8	-.1375767	.558755	-0.25	0.806	-1.234692	.959539
icountry9	.1355002	.5036818	0.27	0.788	-.8534792	1.12448
icountry10	.7519998	.5945477	1.26	0.206	-.4153949	1.919394
icountry11	1.783471	.6341122	2.81	0.005	.5383915	3.028551
icountry12	.9846446	.362228	2.72	0.007	.2734097	1.695879
icountry13	.0561879	.6136292	0.09	0.927	-1.148673	1.261049
icountry14	.206633	.6627676	0.31	0.755	-1.094711	1.507977
icountry15	.1649837	.5222536	0.32	0.752	-.8604615	1.190429
icountry16	-.1706129	.4622735	-0.37	0.712	-1.078287	.7370613
icountry17	-.5302945	.8149181	-0.65	0.515	-2.130386	1.069797
icountry18	-.5122939	.4466417	-1.15	0.252	-1.389275	.3646873
icountry19	.1513918	.4586873	0.33	0.741	-.7492409	1.052024
icountry20	.3471121	.3471823	1.00	0.318	-.3345804	1.028805
icountry21	-.0084128	.5180548	-0.02	0.987	-1.025614	1.008788
icountry22	.6937846	.6695344	1.04	0.300	-.6208465	2.008416
icountry23	.2162839	.453605	0.48	0.634	-.6743697	1.106937
icountry24	-.0730313	.4569274	-0.16	0.873	-.9702085	.8241459
icountry25	-.5332762	.9229837	-0.58	0.564	-2.345555	1.279003
icountry26	.8615305	.7388836	1.17	0.244	-.5892678	2.312329
icountry27	.0675902	.7431856	0.09	0.928	-1.391655	1.526835
icountry28	(omitted)					
icountry29	.3197738	.3166972	1.01	0.313	-.3020612	.9416088
icountry30	.0633199	.5212374	0.12	0.903	-.9601299	1.08677
_cons	2.068695	5.335903	1.79	0.098	-8.408351	12.54574

Table A4.2: Step-wise Regression Results of Growth Model

reg lgrgdp lgdpini lgkap lssenr lpsenr llab lopen ltaxes lnare icountry*
note: icountry10 omitted because of collinearity

Growth / Trade Liberalization

```
    Source |    SS      df       MS              Number of obs =  713
-------------+------------------------------       F( 37,  675) =  4.99
     Model | 126.128041   373.40886597           Prob > F  =  0.0000
  Residual | 461.260524   675.683348924          R-squared  =  0.2154
-------------+------------------------------       Adj R-squared = 0.1722
     Total | 587.388565   712.824983939          Root MSE    = .82665
```

```
---------------------------------------------------------------------------------------
   lgrgdp |    Coef.    Std. Err.     t    P>|t|      [95% Conf. Interval]
-------------+-------------------------------------------------------------------------
   lgdpini | -.406616   .1113258   -3.65   0.000    -.6252025   -.1880296
     lgkap |  .4527375  .0695055    6.51   0.000     .3162644    .5892105
    lssenr |  .1924838  .0980682    2.07   0.024     .5028484    .1178807
    lpsenr |  .4397776  .2242079    1.99   0.050     .0004511    .8800064
      llab |  .7194699  .3512835    2.25   0.018     2.904505    1.465566
     lopen |  .093544   .0537967    1.79   0.085     .1691637    .3562518
    ltaxes |  .0765706  .041418     1.74   0.089     .3550712    .20193
     lnare |  .0364724  .0241202    1.98   0.057     .0740147    .0010699
  icountry1 | -.105071   .533569   -0.20   0.844    -1.152726    .9425834
  icountry2 | -.1978111  .404198   -0.49   0.625    -.9914477    .5958255
  icountry3 | -.415223   .7557625  -0.55   0.583    -1.899151    1.068705
  icountry4 | -.3551888  .444491   -0.80   0.425    -1.22794     .5175626
  icountry5 | -.4558206  .6212522  -0.73   0.463    -1.67564     .7639986
  icountry6 | -.3813768  .5238099  -0.73   0.467    -1.40987     .647116
  icountry7 | -.229786   .4441759  -0.52   0.605    -1.101918    .6423465
  icountry8 | -.5962839  .471997   -1.26   0.207    -1.523043    .3304749
  icountry9 | -.6233607  .5336982  -1.17   0.243    -1.671269    .4245475
 icountry10 | (omitted)
 icountry11 |  .6720915  .4548889   1.48   0.140    -.2210758    1.565259
 icountry12 |  .4524753  .4646358   0.97   0.330    -.4598299    1.364781
 icountry13 | -.3301593  .5630773  -0.59   0.558    -1.435753    .7754343
 icountry14 | -.0580962  .3183357  -0.18   0.855    -.6831434    .566951
 icountry15 | -.0399964  .4612486  -0.09   0.931    -.945651     .8656582
 icountry16 | -.4570551  .4508073  -1.01   0.311    -1.342208    .4280982
 icountry17 | -1.001464  .6234828  -1.61   0.109    -2.225663    .222735
 icountry18 | -.716826   .4117143  -1.74   0.082    -1.525221    .0915687
 icountry19 | -.2747091  .4027873  -0.68   0.495    -1.065576    .5161576
 icountry20 |  .0805594  .4454335   0.18   0.857    -.7940424    .9551612
 icountry21 | -.4849034  .5133291  -0.94   0.345    -1.492817    .5230105
 icountry22 | -.21548    .7521711   1.79   0.075     1.692356    1.261396
 icountry23 | -.0004536  .4283557   1.70   0.099     .8415234    .8406161
 icountry24 | -.3265639  .4578297   1.91   0.076    -1.225505    .5723778
 icountry25 | -1.026358  1.015511   2.21   0.013     3.020297    .967582
 icountry26 |  .5057745  .8117125   0.62   0.533    -1.08801     2.09956
 icountry27 | -.8938846  .5746077  -1.56   0.120    -2.022118    .2343489
 icountry28 | -.3710851  .5847243  -0.63   0.526    -1.519182    .777012
 icountry29 |  .0259133  .4729886   0.05   0.956    -.9027926    .9546191
 icountry30 | -.2679946  .5626952  -0.48   0.634    -1.372838    .8368488
      _cons |  3.361798  5.150849   2.65   0.014    -6.751814    13.47541
---------------------------------------------------------------------------------------
```

Growth / Economic Institutions

reg lgrgdp lgdpini lgkap lssenr lpsenr llab lopen lreprisk ltaxes lnare icountry*

note: icountry10 omitted because of collinearity

```
      Source |       SS       df       MS              Number of obs =     713
-------------+------------------------------           F( 38,   674) =    4.88
       Model |  126.690722    38  3.33396636           Prob > F      = 0.0000
    Residual |  460.697843   674  .683527957           R-squared     = 0.2163
-------------+------------------------------           Adj R-squared = 0.1724
       Total |  587.388565   712  .824983939           Root MSE      = .82676
```

```
------------------------------------------------------------------------------
      lgrgdp |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     lgdpini | -.4057247   .1113447    -3.64   0.000    -.6243489   -.1871006
       lgkap |  .4455592   .0699634     6.37   0.000     .3081868    .5829317
      lssenr |  .1820431   .1058507     1.99   0.051     .4932704    .1291842
      lpsenr |  .4344218   .2243149     1.94   0.053     .0060183    .8748619
        llab |  .6893859   .3313475     2.02   0.036     2.875683    1.496911
       lopen |  .0994784    .133974     1.98   0.058     .1635781     .362535
     lreprisk |   .117173   .0921442     1.91   0.065     .1364002    .3707463
      ltaxes |  .0705138   .0340155     2.09   0.020     .3493599    .2083323
       lnare |  .0363668   .0291231     1.98   0.058     .0739148    .0011812
    icountry1 | -.0965593   .5337213    -0.18   0.856    -1.144516    .9513971
    icountry2 | -.1947086   .4042654    -0.48   0.630    -.9884797    .5990624
    icountry3 | -.3969635   .7561294    -0.52   0.600    -1.881616    1.087689
    icountry4 | -.3333866   .4451982    -0.75   0.454    -1.207529    .5407557
    icountry5 | -.4215428   .6224812    -0.68   0.499    -1.643778    .8006926
    icountry6 | -.3729292   .5239613    -0.71   0.477    -1.401722    .6558635
    icountry7 |  -.241672   .4444272    -0.54   0.587     -1.1143    .6309563
    icountry8 | -.6362921   .4741138    -1.34   0.180     -1.56721    .2946256
    icountry9 | -.6387462   .5340374    -1.20   0.232    -1.687323    .4098309
   icountry10 | (omitted)
   icountry11 |  .6897946   .4553667     1.51   0.130    -.2043133    1.583902
   icountry12 |  .4456036   .4647583     0.96   0.338    -.4669447    1.358152
   icountry13 | -.3275801   .5631582    -0.58   0.561    -1.433336    .7781753
   icountry14 | -.0784424   .3191661    -0.25   0.806    -.7051219     .548237
   icountry15 |  -.026685   .4615423    -0.06   0.954    -.9329186    .8795487
   icountry16 | -.4540906   .4508782    -1.01   0.314    -1.339385    .4312042
   icountry17 |  -.989645   .6237005    -1.59   0.113    -2.214275    .2349847
   icountry18 | -.7149946   .4117732    -1.74   0.083    -1.523507    .0935179
   icountry19 | -.2642883   .4030038    -0.66   0.512    -1.055582    .5270055
   icountry20 |  .0901548   .4456173     0.20   0.840    -.7848104    .9651199
   icountry21 | -.4597313   .5141455    -0.89   0.372    -1.469251    .5497882
   icountry22 | -.2243243   .7523328    -0.30   0.766    -1.701522    1.252874
   icountry23 |  .0193558   .4289677     0.05   0.964     -.822918    .8616296
   icountry24 | -.3003022   .4588036    -0.65   0.513    -1.201159     .600554
   icountry25 | -1.035666   1.015696    -1.02   0.308    -3.029974    .9586416
   icountry26 |  .4928964   .8119429     0.61   0.544    -1.101345    2.087138
   icountry27 | -.8763558   .5750077    -1.52   0.128    -2.005378    .2526659
   icountry28 |  -.334788   .5861676    -0.57   0.568    -1.485722    .8161462
   icountry29 |  .0385187   .4732545     0.08   0.935    -.8907118    .9677492
   icountry30 | -.2447231   .5633531    -0.43   0.664    -1.350861    .8614151
        _cons |  3.198468   5.154668     2.02   0.035    -6.922671    13.31961
------------------------------------------------------------------------------
```

Growth/Political Institutions

reg lgrgdp lgdpini lgkap lssenr lpsenr llab lopen lpolrig ltaxes lnare icountry*
note: icountry10 omitted because of collinearity

```
   Source |      SS       df       MS              Number of obs =     713
----------+------------------------------          F( 38,   674) =    5.23
    Model | 133.82866   38  3.52180684             Prob > F      =  0.0000
 Residual | 453.559905  674 .672937545             R-squared     =  0.2281
----------+------------------------------          Adj R-squared =  0.1843
    Total | 587.388565  712 .824983939             Root MSE      =  .82033
```

```
------------------------------------------------------------------------------
    lgrgdp |    Coef.    Std. Err.     t     P>|t|    [95% Conf. Interval]
-----------+------------------------------------------------------------------
    lgdpini | -.407737    .110475   -3.69   0.000    -.6246535   -.1908206
      lgkap |  .4891793   .0698102   7.01   0.000     .3521077    .626251
     lssenr |  .298944    .1599854   1.87   0.062    -.6130736    .0151856
     lpsenr |  .4726743   .2227058   2.12   0.034     .0353938    .9099548
       llab |  .6453907   .4110454   1.88   0.059    -2.814149   1.523367
      lopen |  .2140204   .106528    2.10   0.018    -.2820917    .2540509
    lpolrig |  .3507054   .1036733   3.38   0.001    -.554267    -.1471439
     ltaxes |  .1870721   .114496    1.79   0.096    -.4707887    .0966444
      lnare |  .031117    .01904     2.63   0.003    -.0685018    .0062677
  icountry1 | -.3027934   .532705   -0.57   0.570    -1.348754    .7431675
  icountry2 | -.6101411   .4192185  -1.46   0.146    -1.433272    .2129901
  icountry3 | -.659353    .7534474  -0.88   0.382    -2.138739    .8200333
  icountry4 | -.6894553   .4520246  -1.53   0.128    -1.577001    .1980905
  icountry5 | -.6663462   .6196347  -1.08   0.083    -1.882993    .5503002
  icountry6 | -.6261725   .5248173  -1.19   0.233    -1.656646    .4043009
  icountry7 | -.4459104   .4453854  -1.00   0.317    -1.32042     .4285993
  icountry8 | -.7122809   .469641   -1.52   0.130    -1.634416    .2098545
  icountry9 | -.6773681   .5298575  -1.28   0.202    -1.717738    .3630018
 icountry10 | (omitted)
 icountry11 |  .6923507   .45145     1.53   0.126    -.1940668   1.578768
 icountry12 |  .2033329   .4669277   0.44   0.663    -.713475    1.120141
 icountry13 | -.4140977   .559322   -0.74   0.459    -1.512321    .6841254
 icountry14 | -.1587481   .3172994  -0.50   0.617    -.7817623    .4642661
 icountry15 | -.293543    .4638175  -0.63   0.527    -1.204244    .6171579
 icountry16 | -.6397217   .4506071  -1.42   0.056    -1.524484    .2450408
 icountry17 | -1.000372   .618715   -1.62   0.106    -2.215213    .2144687
 icountry18 | -.9483918   .4142608  -2.29   0.022    -1.761789   -.1349949
 icountry19 | -.4333775   .4024498  -1.08   0.282    -1.223584    .3568286
 icountry20 | -.2157482   .4506223  -0.48   0.632    -1.100541    .6690442
 icountry21 | -.7760481   .5166231  -1.50   0.134    -1.790432    .2383362
 icountry22 | -.3540633   .7475425  -0.47   0.636    -1.821855   1.113729
 icountry23 | -.1909906   .4287954  -0.45   0.656    -1.032926    .6509449
 icountry24 | -.6657283   .46526    -1.43   0.153    -1.579262    .2478051
 icountry25 | -1.36266   1.012637   -1.35   0.179    -3.350962    .6256422
 icountry26 |  .2601547   .808771    0.32   0.748    -1.327859   1.848168
 icountry27 | -.7180885   .5725768  -1.25   0.210    -1.842337    .4061603
 icountry28 | -.7799266   .5927059  -1.32   0.189    -1.943699    .3838454
 icountry29 | -.2604181   .4769426  -0.55   0.585    -1.19689     .6760538
 icountry30 | -.5196627   .5633264  -0.92   0.357    -1.625748    .5864231
      _cons |  .3146678   .1711554   1.88   0.098    -6.569697   13.50327
------------------------------------------------------------------------------
```

Growth/Cultural Institutions

reg lgrgdp lgdpini lgkap lssenr lpsenr llab lopen lethsion ltaxes lnare icountry*
note: icountry17 omitted because of collinearity

```
      Source |       SS       df       MS                  Number of obs =  713
-------------+------------------------------            F( 38,   674) =   4.91
       Model | 127.304013     38  3.35010559            Prob > F      = 0.0000
    Residual | 460.084552    674  .68261803             R-squared     = 0.2171
-------------+------------------------------            Adj R-squared = 0.1733
       Total | 587.388565    712  .824983939            Root MSE      = .82621
```

```
---------------------------------------------------------------------------------
      lgrgdp |     Coef.    Std. Err.      t     P>|t|     [95% Conf. Interval]
-------------+-------------------------------------------------------------------
     lgdpini | -.4155215   .1114729    -3.73   0.000    -.6343974   -.1966455
       lgkap |  .4454509   .0696898     6.39   0.000     .3086156    .5822861
      lssenr |  .2107188   .1285934     1.73   0.084     .5221152    .1006777
      lpsenr |  .4324019   .2241584     1.93   0.054     .0077309    .8725346
        llab |  .7056272   .311122      2.03   0.026     2.889598    1.478343
       lopen |  .0750441   .0444659     1.96   0.077     .1889783    .3390665
    lethsion | -.8429511   .5422333    -1.91   0.090     .4180676    2.10397
      ltaxes |  .0972819   .1426396     1.88   0.095     .3773534    .1827895
       lnare |  .0382118   .0191559     1.99   0.046     .0758242   -.0005994
    icountry1 | 1.30144    .7391116     1.76   0.079    -.1497979    2.752678
    icountry2 |  .9277836  .5244888     1.77   0.077    -.1020449    1.957612
    icountry3 |  .7573282  .3884073     1.95   0.052    -.0053056    1.519962
    icountry4 |  .7141153  .7045556     1.01   0.311    -.6692724    2.097503
    icountry5 |  .928795   .6103377     1.52   0.129    -.269597     2.127187
    icountry6 | 1.330396   .6076492     2.19   0.029     .1372831    2.523509
    icountry7 | 1.115173   .5830701     1.91   0.056    -.0296794    2.260025
    icountry8 |  .5664447  .480045      1.18   0.238    -.3761188    1.509008
    icountry9 |  .788968   .5702801     1.38   0.167    -.3307713    1.908707
   icountry10 | 1.331248   .671897      1.98   0.048     .0119847    2.650511
   icountry11 | 2.37224    .6434051     3.69   0.000     1.10892     3.635559
   icountry12 | 1.815882   .7052551     2.57   0.010     .4311211    3.200644
   icountry13 |  .6773228  .4046882     1.67   0.095    -.1172784    1.471924
   icountry14 |  .8505002  .5048814     1.68   0.093    -.1408293    1.84183
   icountry15 |  .9397446  .5009525     1.88   0.061    -.0438705    1.92336
   icountry16 |  .545916   .5739553     0.95   0.342    -.5810394    1.672871
   icountry17 | (omitted)
   icountry18 |  .2483624  .6298065     0.39   0.693    -.9882563    1.484981
   icountry19 |  .8533074  .5077735     1.68   0.093    -.1437008    1.850316
   icountry20 | 1.180545   .6322546     1.87   0.062    -.0608809    2.42197
   icountry21 |  .8332863  .5043442     1.65   0.099    -.1569885    1.823561
   icountry22 | 1.454727   .7428235     1.96   0.051    -.0037993    2.913254
   icountry23 |  .9172667  .6673088     1.37   0.170    -.3929874    2.227521
   icountry24 |  .7911483  .4958351     1.60   0.111    -.182419     1.764716
   icountry25 |  .3911602  .7398873     0.53   0.597    -1.061601    1.843921
   icountry26 | 1.67084    .5800864     2.88   0.004     .5318463    2.809834
   icountry27 |  .4649529  .3764753     1.24   0.217    -.2742525    1.204158
   icountry28 |  .9477432  .8094809     1.17   0.242    -.6416644    2.537151
   icountry29 | 1.143135   .6949361     1.64   0.100    -.2213651    2.507635
   icountry30 |  .8438893  .4600389     1.83   0.067    -.0593925    1.747171
       _cons |  .1447203  .0847371     1.91   0.060    -7.854226    10.74863
---------------------------------------------------------------------------------
```

APPENDIX V: Robustness Check

Table A5.1: Robustness Check Results

reg lgrgdp lgdpini lgkap lssenr lpsenr llab lopen lethsion lreprisk lpolrig ltaxes lnare lcim lfdi

lecofre icountry*   note: icountry6 omitted because of collinearity

note: icountry21 omitted because of collinearity

```
  Source |     SS       df      MS                    Number of obs =   626
---------+------------------------------------          F( 42,  583) =   4.46
   Model | 114.608014    42 .72876225                  Prob > F      = 0.0000
Residual | 356.732416   583.611890936                  R-squared     = 0.2332
---------+------------------------------------          Adj R-squared = 0.1846
   Total | 471.34043    625 .754144688                  Root MSE      = .78223
```

```
------------------------------------------------------------------------------
   lgrgdp |    Coef.    Std. Err.    t     P>|t|    [95% Conf. Interval]
---------+--------------------------------------------------------------------
  lgdpini |  -.450056  .1111431   -4.05   0.000    -.6683457   -.2317662
    lgkap |  .4587062  .0733211    6.26   0.000     .3147006    .6027118
   lssenr |  .2730878  .127104     2.63   0.003     .601287     .0551114
   lpsenr |  .2660575  .2463512    1.88   0.081     .2177864    .7499014
     llab |  .3503199  .261125     1.99   0.053     2.535375    1.834735
    lopen |  .05218    .0230231    2.36   0.015     .3330833    .2287233
 lethsion | -.024565   .0192115   -1.94   0.070    -1.270154    1.319284
 lreprisk |  .0817099  .0372258    2.22   0.037     .1780505    .3414704
  lpolrig |  .2597552  .1097736    2.37   0.018     .475355     .0441553
   ltaxes |  .0120941  .0061333    2.08   0.036     .3093195    .2851313
    lnare |  .033138   .020082     1.65   0.099     .07258      .0063039
     lcim |  .0328907  .0591853    1.96   0.079     .0833516    .1491331
     lfdi |  .021699   .0255705    1.85   0.096     .0285226    .0719206
  lecofre |  .1411445  .1189945    2.19   0.036     .3748547    .0925656
icountry1 |  .2682722  .6657981    0.40   0.687    -1.039383    1.575927
icountry2 | -.0952886  .6268808   -0.15   0.879    -1.326508    1.135931
icountry3 |  .1819388  .5828357    0.31   0.755    -.9627746    1.326652
icountry4 | -.1130302  .7924277   -0.14   0.887    -1.669391    1.443331
icountry5 |  .1863797  .5516552    0.34   0.736    -.8970938    1.269853
icountry6 | (omitted)
icountry7 |  .5385279  .5333712    1.01   0.313    -.5090351    1.586091
icountry8 |  .1064343  .5926725    0.18   0.858    -1.057599    1.270468
icountry9 | -.0873619  .4945729   -0.18   0.860    -1.058723    .8839997
icountry10|  .3328871  .6004402    0.55   0.580    -.8464023    1.512176
icountry11|  1.301777  .3164839    4.11   0.000     .6801892    1.923364
icountry12|  .6570792  .6129296    1.07   0.284    -.5467399    1.860898
icountry13|  .3986573  .6926739    0.58   0.565    -.9617829    1.759097
icountry14|  .1908617  .7284373    0.26   0.793    -1.239819    1.621543
icountry15|  .3452177  .7076349    0.49   0.626    -1.044607    1.735042
icountry16| -.0082403  .7464322   -0.01   0.991    -1.474264    1.457783
icountry17| -.471046   .628106    -0.75   0.454    -1.704672    .7625802
icountry18| -.2642804  .7943915   -0.33   0.739    -1.824498    1.295937
icountry19|  .1405572  .6141931    0.23   0.819    -1.065744    1.346858
icountry20|  .2570793  .7337908    0.35   0.726    -1.184116    1.698275
icountry21| (omitted)
icountry22|  .3941086  .5626805    0.70   0.484    -.7110191    1.499236
icountry23|  .3699169  .8477304    0.44   0.663    -1.295061    2.034894
icountry24| -.0843253  .6248933   -0.13   0.893    -1.311642    1.142991
icountry25| -.2502873  .7448919   -0.34   0.737    -1.713286    1.212711
icountry26|  .8415805  .6949686    1.21   0.226    -.5233667    2.206528
icountry27| -.2367987  .4049643   -0.58   0.559    -1.032165    .558568
icountry28| -.2101601  .7815953   -0.27   0.788    -1.745246    1.324925
icountry29|  .2890851  .7619279    0.38   0.705    -1.207373    1.785543
icountry30|  .0638887  .6053886    0.11   0.916    -1.12512     1.252897
    _cons |  3.118823  4.927159    2.43   0.027    -6.55832     12.79597
------------------------------------------------------------------------------
```

APPENDIX VI: Sample of GMM Results

Table A6.1: GMM Results

xtabond2 lgrgdp l.lgrgdp lgkap llab lssenr lpsenr lpolrig lreprisk lethsion lopen ltaxes lnare, gmm(lgrgdp l.lgrgdp lgkap llab > lssenr lpsenr lopen ltaxes lnare, collapse equation(both) lag(2 3)) iv(lpolrig lreprisk lethsion) ar(2)

Dynamic panel-data estimation, one-step system GMM

```
-----------------------------------------------------------------------------
Group variable: id                    Number of obs  = 605
Time variable: year                   Number of groups  = 30
Number of instruments = 30            Obs per group: min = 11
Wald chi2(11) =  66.41                           avg = 20.17
Prob > chi2   = 0.000                             max = 27
-----------------------------------------------------------------------------
   lgrgdp |   Coef.    Std. Err.    z     P>|z|   [95% Conf. Interval]
----------+------------------------------------------------------------------
   lgrgdp |
      L1. |  .2651947  .0534995   4.96   0.000   .1603376   .3700517
    lgkap |  .1591261  .1194258   1.63   0.083   .0749442   .3931964
     llab |  .4361025  .3340272   1.83   0.045   2.190783   3.062988
   lssenr |  .0731818  .0574588   1.83   0.045   .8073617    .660998
   lpsenr |  .2793413  .1502532   1.73   0.067   .9951316   1.553814
   lpolrig|  .2908276  .1309085   2.22   0.026   .5474035  -.0342517
  lreprisk|  .0467775  .0315139   1.92   0.028   .4684424   .3748873
  lethsion| -.3753837  .2530607   1.48   0.038  -.8713736   .1206062
    lopen |  .0568453  .4455268   1.95   0.011   1.430062   .3163711
   ltaxes |   .21941   .4717156   1.77   0.042   1.143955   .7051355
    lnare |  .0235136  .0754146   1.61   0.055   .1713235   .1242963
    _cons | -3.715646  5.592349  -2.66   0.006  -14.67645   7.245157
-----------------------------------------------------------------------------
Instruments for first differences equation
 Standard
  D.(lpolrig lreprisk lethsion)
 GMM-type (missing=0, separate instruments for each period unless collapsed)
  L(2/3).(lgrgdp L.lgrgdp lgkap llab lssenr lpsenr lopen ltaxes lnare)
  collapsed
Instruments for levels equation
 Standard
  _cons
  lpolrig lreprisk lethsion
 GMM-type (missing=0, separate instruments for each period unless collapsed)
  DL.(lgrgdp L.lgrgdp lgkap llab lssenr lpsenr lopen ltaxes lnare) collapsed
-----------------------------------------------------------------------------
Arellano-Bond test for AR(1) in first differences: z = -11.24  Pr > z =  0.000
Arellano-Bond test for AR(2) in first differences: z =  0.05  Pr > z =  0.957
-----------------------------------------------------------------------------
Sargan test of overid. restrictions: chi2(18)  = 31.91  Prob > chi2 =  0.023
 (Not robust, but not weakened by many instruments.)

Difference-in-Sargan tests of exogeneity of instrument subsets:
 GMM instruments for levels
   Sargan test excluding group:    chi2(9)   = 17.18  Prob > chi2 =   0.046
   Difference (null H = exogenous): chi2(9)   = 14.73  Prob > chi2 =  0.099
  iv(lpolrig lreprisk lethsion)
   Sargan test excluding group:    chi2(15)  = 28.38  Prob > chi2 =  0.019
   Difference (null H = exogenous): chi2(3)   =  3.54  Prob > chi2 =  0.316
```

xtabond2 lgrgdp l.lgrgdp lgkap llab lssenr lpsenr lpolrig lreprisk lethsion lopen ltaxes lnare, gmm(lgrgdp l.lgrgdp lgkap llab > lssenr lpsenr lopen ltaxes lnare, collapse equation(both) lag(2 3)) iv(lpolrig lreprisk lethsion) ar(3) h(3) twostep
Dynamic panel-data estimation, two-step system GMM

Group variable: id   Number of obs   = 605
Time variable : year   Number of groups = 30
Number of instruments = 30   Obs per group: min = 11
Wald chi2(11) = 1849.28   avg = 20.17
Prob > chi2 = 0.000   max = 27
----

lgrgdp	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
lgrgdp						
L1.	.196634	.0504953	3.89	0.000	.097665	.295603
lgkap	.1399097	.0940349	1.79	0.037	.0443952	.3242147
llab	1.379547	.7663165	1.80	0.072	.1224058	2.8815
lssenr	.1603888	.2619473	1.71	0.040	.3530184	.6737961
lpsenr	.1181726	.3681111	1.62	0.048	.6033119	.8396572
lpolrig	.2354001	.1077555	2.18	0.029	.446597	.0242032
lreprisk	.0875839	.1212756	1.72	0.070	.1501119	.3252797
lethsion	-.4829619	.1612682	-2.99	0.003	-.7990418	-.166882
lopen	.0764617	.3610693	2.12	0.034	-1.4733	.0579345
ltaxes	.0978641	.2090515	1.87	0.040	.3118693	.5075974
lnare	.0399314	.053516	1.75	0.056	.1448208	.0649581
_cons	-8.260643	3.010224	-2.74	0.006	-14.16057	-2.360711

Warning: Uncorrected two-step standard errors are unreliable.

Instruments for first differences equation
  Standard
    D.(lpolrig lreprisk lethsion)
  GMM-type (missing=0, separate instruments for each period unless collapsed)
    L(2/3).(lgrgdp L.lgrgdp lgkap llab lssenr lpsenr lopen ltaxes lnare)
    collapsed
Instruments for levels equation
  Standard
    _cons
    lpolrig lreprisk lethsion
  GMM-type (missing=0, separate instruments for each period unless collapsed)
    DL.(lgrgdp L.lgrgdp lgkap llab lssenr lpsenr lopen ltaxes lnare) collapsed
----
Arellano-Bond test for AR(1) in first differences: z = -3.30 Pr > z = 0.001
Arellano-Bond test for AR(2) in first differences: z = -0.30 Pr > z = 0.761
Arellano-Bond test for AR(3) in first differences: z =   0.63 Pr > z = 0.531

Sargan test of overid. restrictions: chi2(18) = 31.91 Prob > chi2 = 0.023
  (Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: chi2(18) = 16.93 Prob > chi2 = 0.528
  (Robust, but can be weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:
  GMM instruments for levels
    Hansen test excluding group: chi2(9)   = 9.40 Prob > chi2 = 0.401
    Difference (null H = exogenous): chi2(9)   = 7.53 Prob > chi2 = 0.582
  iv(lpolrig lreprisk lethsion)
    Hansen test excluding group: chi2(15) = 16.62 Prob > chi2 = 0.342
    Difference (null H = exogenous): chi2(3)   = 0.31 Prob > chi2 = 0.959

APPENDIX VII: Sample of Sensitivity Checks Results

reg lngrgdp lgdpini lngkap lnssenr lnpsenr lnlab lnopen lnethsion lnreprisk lnpolrig lntaxes lnnare icountry*
note: icountry4 omitted because of collinearity

Table A7.1: Results for West Africa sub-region

```
    Source |    SS       df       MS              Number of obs = 195
-------------+------------------------------        F( 18,  176) =  2.42
     Model | 26.2424358   18  1.4579131            Prob > F  = 0.0017
   Residual | 106.090408  176  .60278641           R-squared  = 0.1983
-------------+------------------------------        Adj R-squared = 0.176
     Total | 132.332844  194  .682128062           Root MSE  = .77639
```

```
-------------------------------------------------------------------------------
   lngrgdp |    Coef.    Std. Err.     t    P>|t|    [95% Conf. Interval]
-------------+-----------------------------------------------------------------
    lgdpini | -.4301856   .2866229   -2.00  0.035   -.9958457    .1354745
    lngkap |  .5515527   .1943608    2.84  0.005    .1679751    .9351304
    lnssenr |  .1860259   .2769491    2.67  0.003    .7325945    .3605428
    lnpsenr |  .4194866   .4608303    1.91  0.064    .4899779   1.328951
      lnlab |  2.928008   1.885002    1.95  0.052    10.59519   4.739177
     lnopen |  .4092848   .2817494    1.77  0.085    .3441107    1.16268
  lnethsion | -.8107068   .5172687    1.69  0.090   -1.503632   3.125046
   lnreprisk |  .2207822   .2432995    1.98  0.065    .2593779    .7009422
    lnpolrig |   .097792   .1589843    2.12  0.039     .411553    .215969
     lntaxes |  .4918861   .2323986    2.15  0.031    1.131285    .1475127
      lnnare |  .0430941   .0264706    2.14  0.039    .0288818     .11507
   icountry1 | -.2923703   .7546602   -0.39  0.699   -1.781718   1.196978
   icountry2 |  -.473558   1.415407   -0.33  0.738   -3.266912   2.319796
   icountry3 | -1.127776   1.374766   -0.82  0.413   -3.840923   1.585371
   icountry4 |  (omitted)
   icountry5 | -.7290126   .8924073   -0.82  0.415   -2.490209   1.032184
   icountry6 | -.7174566    1.26358   -0.57  0.571   -3.211175   1.776262
   icountry7 | -1.039379   2.111709   -0.49  0.623    -5.20691   3.128152
   icountry8 | -1.087963   1.021297   -1.07  0.288   -3.103528    .927602
      _cons |  11.58521   17.00723    0.68  0.497   -21.97915   45.14956
```

Table A7.2: Results for Central Africa sub-region

reg lngrgdp lngdpini lngkap lnssenr lnpsenr lnlab lnopen lnethsion lnreprisk lnpolrig lntaxes lnnare icountry*

note: icountry3 omitted because of collinearity

Source	SS	df	MS		
Model	74.1689558	18	4.12049755		
Residual	141.172369	152	.928765587		
Total	215.341325	170	1.26671368		

Number of obs = 171
F(18, 152) = 4.44
Prob > F = 0.0000
R-squared = 0.3444
Adj R-squared = 0.2668
Root MSE = .96372

lngrgdp	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lngdpini	-.1496839	.1883404	-2.19	0.028	-.5217868	.2224191
lngkap	.5714237	.1720095	3.32	0.001	.2315856	.9112618
lnssenr	.6657585	.4746626	1.95	0.063	1.603547	.2720295
lnpsenr	.2560379	.6662688	2.38	0.001	1.060305	1.572381
lnlab	15.5361	6.67844	2.74	0.007	26.75496	-4.317242
lnopen	.4777964	.2383885	2.24	0.015	.2806445	1.236237
lnethsion	-1.329897	.6679458	2.13	0.027	-2.815001	5.474795
lreprisk	.4251791	.3210681	1.62	0.087	.2091531	1.059511
lnpolrig	1.768398	.4442339	3.98	0.000	2.646068	-.8907274
lntaxes	.1808188	.3382595	1.73	0.094	.8491161	.4874785
lnnare	.1604269	.0718049	2.60	0.010	.2825345	-.0383193
icountry1	3.312211	1.43335	2.31	0.022	.4803508	6.144072
icountry2	4.405582	2.150135	2.05	0.042	.1575745	8.65359
icountry3	(omitted)					
icountry4	1.446696	.9056793	1.60	0.112	-.3426488	3.236042
icountry5	.463351	.8377048	0.55	0.581	-1.191697	2.118399
icountry6	2.309183	1.183043	1.95	0.053	-.0281468	4.646514
icountry7	-.9229175	1.152412	-0.80	0.424	-3.199732	1.353897
icountry8	4.166684	2.123659	1.96	0.052	-.0290169	8.362385
_cons	59.60578	23.97816	2.49	0.014	12.23227	106.9793

Table A7.3: Results for East/Southern Africa sub-region

reg lngrgdp lgdpini lngkap lnssenr lnpsenr lnlab lnopen lnethsion lreprisk lpolrig ltaxes lnare icountry*

note: icountry9 omitted because of collinearity

```
    Source |       SS       df       MS                    Number of obs =    347
-------------+------------------------------------          F( 24,  322) = 5.33
      Model |  67.0429151   24   2.7934548                   Prob > F      = 0.0000
   Residual |  168.899141  322   .524531494                  R-squared     = 0.2841
-------------+------------------------------------          Adj R-squared = 0.2308
      Total |  235.942056  346   .681913457                  Root MSE      = .72425
```

```
------------------------------------------------------------------------------
     lngrgdp |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     lgdpini | -.6970376   .2421331    -2.88   0.004    -1.1734    -.2206749
      lngkap |  .4201844   .0919078     4.57   0.000    .2393687    .6011205
     lnssenr |  .0325849   .2707358     2.72   0.004    .5652193    .5000496
     lnpsenr |  .4951368   .2912388     1.70   0.090    .0778343    1.068108
       lnlab |  .7221608   .3408592     2.67   0.007    1.414237    2.858559
      lnopen |  .0776668   .0551279     1.84   0.058    .4222062    .2668725
    lnethsion | -1.145356   .7843136    -2.06   0.045   -.3976702    2.688382
     lreprisk |  .1464816   .1634773     1.98   0.071    .4681001    .1751369
      lpolrig |  .4364623   .1485763     2.94   0.004    .7287652    .1441594
      ltaxes |  .1497562   .2103157     1.95   0.077    .5635226    .2640101
       lnare |  .0306909   .0236518     1.70   0.095    .0772225    .0158407
    icountry1 | -.8620858   .8430806    -1.02   0.307   -2.520728    .7965562
    icountry2 | -1.053241   1.334177    -0.79   0.430   -3.678045    1.571563
    icountry3 |  .1603848   .850846      0.19   0.851   -1.513534    1.834304
    icountry4 | -1.316045   .9575437    -1.37   0.170   -3.199876    .5677873
    icountry5 | -1.995206   1.266571    -1.58   0.116   -4.487006    .4965935
    icountry6 | -1.976521   1.187653    -1.66   0.097   -4.313061    .3600189
    icountry7 | -1.341751   1.10277     -1.22   0.225   -3.511294    .8277929
    icountry8 | -.8397981   1.096579    -0.77   0.444   -2.997163    1.317567
    icountry9 | (omitted)
   icountry10 |  .7438276   .4762014     1.56   0.119   -.1930314    1.680687
   icountry11 | -1.111523   1.053052    -1.06   0.292   -3.183253    .960207
   icountry12 | -.7463569   1.025361    -0.73   0.467   -2.76361     1.270896
   icountry13 | -.883859    1.054353    -0.84   0.402   -2.95815     1.190432
   icountry14 | -.9692739   .8443465    -1.15   0.252   -2.630406    .6918586
        _cons |  3.724949   6.409989     0.58   0.562   -8.885798    16.3357
------------------------------------------------------------------------------
```