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University of Cape Coast

UNIVERSITY OF CAPE COAST

EXTERNAL DEBT AND ECONOMIC GROWTH IN SUB- SAHARAN

AFRICA: THE ROLE OF COUNTRY-LEVEL GOVERNANCE

STRUCTURES

BY

EVA ADUTWUMWAA ASANTE

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in Finance

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's signature………………………….. Date………………………

Name: Eva Adutwumwaa Asante

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast

Principal Supervisor's Signature: …………… Date: ……………………

Name: Dr. Zangina Isshaq

Co-Supervisor's Signature: ………………   Date: ……………………

Name: Dr. Samuel Kwaku Agyei

ABSTRACT

Sub-Saharan African countries have experienced a decline in its economic growth rate due to delayed and still limited policy adjustments in the region, with a consequent rise in public debt and deteriorating international reserves. External debt and governance have been argued to impact a country's economic growth. The study assessed the role of country-level governance structures in the relationship between external debt and economic growth using a panel of 38 Sub-Saharan African countries for the period 1996-2016. The study used Arrelano and Bond General Method of Moment dynamic panel estimation technique. The results indicate that country-level governance structures improve the utilization of external debt to boost economic growth in Sub-Saharan African countries. The study concludes that strong country-level governance structures (rule of law, voice and accountability, political stability and absence of violence/terrorism, regulatory quality, government effectiveness and control of corruption) would ensure efficient utilization of external debt for the purpose of increasing economic growth in Sub-Saharan African countries.

KEY WORDS

External Debt

Country-Level Governance

Economic Growth

General Methods of Moments

Sub-Saharan Africa

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DEDICATION

To my uncle, Mr. Boadi Danso, my father, Mr. Jonathan Osei Asante

and my mother, Joyce Asante.

TABLE OF CONTENTS

Contents	**Page**

LIST OF TABLES

x

LIST OF ACRONYMS

GDP   Gross Domestic Product

SSA   Sub-Saharan Africa

GDPPC   Gross Domestic Product Per Capita

ED   External Debt

EDGNI   External Debt (% of Gross National Income)

GNI   Gross National Income

GCFP   Gross Capital Formation (% of GDP)

WGI   World Governance Indicator

POP   Population Growth

INF   Inflation

TNR   Total Natural Resources

SCHOOLX   Secondary School Enrolment

WDI   World Development Indicator

TO   Trade Openness

IMF   International Monetary Fund

GOV   Aggregate of Country-Level Governance

WDI   World Development Indicators

WGI   Worldwide Governance Indicators

CHAPTER ONE

INTRODUCTION

Economic growth has been a major concern to Sub-Saharan African countries and other regions as well. Sub-Saharan countries' economic growth in comparison with that of some other developing countries is perceived as substandard. External debt, governance and other economic factors have been argued in empirical literature to affect economic growth in Sub-Saharan Africa. External debt continues to escalate in Sub-Saharan Africa because most countries' revenue is not enough to meet their demands. In empirical literature, there is vagueness on the relationship between external debt and economic growth in Sub-Saharan Africa. The reason for the mixed findings is because most existing studies have not paid attention to how external debt affects economic growth in the presence of country level governance. Thus, by employing two dimensions of governance, Jalles (2011) explained that high levels of corruption and low levels of democracy account for the inability of countries to translate external debt into economic growth. This study contributes to extant literature by employing other dimensions of governance to examine how governance moderates the relationship between external debt and economic growth in sub-Saharan Africa.

Background to the Study

The International Monetary Fund (IMF) defines external debt as the outstanding amount of actual, current and non-contingent liabilities that requires payment of interest or principal by the debtor at some point in the future and that are owed to nonresidents by residents of an economy. External

debt can be obtained from foreign commercial banks, international financial institutions like IMF and World Bank and from the government of foreign nations.

The World Bank classifies 74% of the countries of SSA as low-income economies while the United Nations Development Programme classifies 79% of them as "low human development" countries. There is high indebtedness in most Sub-Sahara countries in Africa (Iyoha, 1999).

According to IMF (2017), there has been deterioration in the growth rate of Sub-Saharan African countries as a result of delayed and still limited policy adjustments, with an ensuing increase in public debt and declining international reserves. The substantial growth in external debt in Sub-Saharan Africa for the past two decades has given rise to concerns about detrimental effects of the debt on investment and growth mainly referred to as the debt overhang effect (Ajayi & Khan, 2000). Borrowing is seen as one of the avenues through which treasury can finance developmental projects in order to boost economic growth. Policy makers and academics saw high indebtedness of developing countries as one of the key factors limiting their growth because of the effect of foreign indebtedness on the world's poorest countries' economic growth over the last decade (Jalles, 2011). The Sustainable Development Indicator (SDI) Group identifies indebtedness as one of the factors that affect economic growth. According to IMF (2017), the enormous growth in external debt in sub-Saharan Africa over the past two decades has given rise to concerns about the detrimental effects of the debt on investment and growth, principally the well-known "debt overhang" effect. If borrowed funds from foreign countries are directed to ventures that will yield a higher

rate of return that can take care of the debt incurred, a country can accomplish its unrelenting economic growth and purposed development.

External debt may promote economic growth when the borrowed funds are invested in sustainable projects that generate revenue for servicing debt (Fiagbe, 2015). Hence, extreme borrowing by a country can cause more harm than good which may result in severe hitches (Fosu, 2010). According to El-Mahdy and Torayeh (2009), private I nvestors are discouraged as a result of debt overhang problems occurring from high external debts while interest rate is increased due to high demand for domestic funds by government which leads to reduction in private investment and increase in cost of private credit. According to World Bank (2014), "As countries move towards fiscal adjustment, we need to protect the right conditions for investment so that Sub-Saharan African countries achieve a more robust recovery," "We need to implement reforms that increase the productivity of African workers and create a stable macroeconomic environment. Better and more productive jobs are instrumental to tackling poverty on the continent".

Qayyumy and Haiderz (2012) examined foreign aid, external debt and governance and indicated that external debt and foreign aid do not affect the growth rate of consumption but have some level of impact on consumption. Also, foreign aid and governance encourage the economic growth but external debt creates a burden on the economy. Jalles (2011) indicated that corruption and weak governance specifically affect debt-growth relationship in developing countries. They contended that the development in the quality of institutions will influence the level of consumption and output in an economy. According to World Bank (2014), in order to gain a stout repossession in Sub-

3

Saharan Africa, a number of factors averting this recovery ought to be addressed. Some of these factors are tight foreign exchange market, constrained activity in the non-oil sector, low investment confidence and political uncertainty in most countries.

According to IMF (2017), in spite of the challenges facing Sub-Saharan African countries, solid policies like putting transformed emphasis on macroeconomic stability in order to set the platform for growth improvement, addressing structural weakness to support macroeconomic rebalancing in order to sustain fiscal position and strong growth and also to safeguard the most vulnerable people in a country by strengthening social protection programs can boost the growth of the economy.

The attention and focus of policymakers, governments and the international funding agencies have been on how to strengthen governance in Sub- Saharan Africa since the beginning of the 21st century (Omoteso, Kamil & Hakeem, 2014). Governance enables a country to achieve its development goals and become prosperous by establishing a conductive environment for high and sustainable economic growth (Qayyum & Haider, 2012). According to The World Bank (2015), poor quality institutions, weak rule of law, an absence of accountability, tight controls over information, and high levels of corruption still characterize many African states today. Other factors that affect economic growth are inflation rate, trade openness, total natural resources, gross capital formation, population growth and schooling (Jalles, 2011; Fiagbe, 2015; Kamundia, Gitahi & Mwilaria ,2015)

This study will therefore build on existing literature to examine the moderating effect of country level governance on the relationship between external debt and economic growth.

Statement of the Problem

Generally, the economic growth in Sub-Saharan Africa is low as compared to other regions. One of the main factors that account for this is that there is an inverse effect of external debt on economic growth (Iyoha, 1999). Fiagbe (2015) argues that external debt negatively affect economic growth in Sub-Saharan Africa. Kasidi and Said (2013) also argues that there is a positive relationship between external debt and economic growth because the use of funds mainly supports development sectors.

Jalles (2011) explains that poor institutions account for the inability of countries to translate external debt into economic growth. That is, the reason why external debt beyond a certain threshold negatively affects economic growth is weak governance structures. Therefore Ndulu and O'Connell (1999) explained that governance affects long-term growth not only through policy distortions and transactions costs, but also through the capacity to handle external economic shocks as they occur. However, Jalles (2011) employed level of corruption and democracy as a measure of institutions and governance in his study.

There is vagueness in existing literature on the relationship between external debt and economic growth in Sub-Saharan Africa. This reason for the mixed finding is because, beyond a certain threshold level, debt adversely affects economic growth (Clements, 2003; Fosu, 1999). However, few studies

5

have been conducted to evaluate the role of country-level governance in the relationship between external debt and economic growth.

The gap that still remains in literature is that most literature in recent times has not employed all the world governance indicators as a moderating variable in the external debt-economic growth nexus. This study fills a gap in extant literature by employing the world governance indicators as a measure of institution and as moderating variables in the relationship between external debt and economic growth in Sub-Saharan Africa.

Purpose of the study

The Purpose of this study is to examine the moderating effect of country-level governance on the relationship between external debt and economic growth in Sub-Saharan Africa.

Research Objectives

Specifically the study will achieve the following objectives:

1. Determine the effect of external debt on economic growth in Sub-Saharan Africa.

2. Examine the effect of country-level governance on economic growth in Sub-Saharan Africa.

3. Test the moderating effect of country-level governance on the relationship between external debt and economic growth in Sub-Saharan Africa.

Research Hypothesis

H$_1$. There is no significant relationship between external debt and economic growth in Sub-Saharan African countries

6

H₂. There is no significant relationship between country level governance and economic growth in Sub-Saharan African countries.

H₃. There is no significant moderating effect of country-level governance on the relationship between external debt and economic growth in Sub- Saharan African countries.

Significance of the Study

This study looks at determining the moderating effect of country-level governance on the relationship between external debt and economic growth in Sub-Saharan Africa. The study would help government and policy makers in the region to understand how external debt affects economic growth with governance indicators playing a moderating role. Outcomes from the study would prompt citizens to express their views on pressing issues, manage public resources for the betterment of their nation, and attach some urgency to country-level governance in Sub-Saharan Africa.

Moreover, the study would inform government officials about the need to reinforce the implementation of country-level governance to aid in the utilization of external debt for the persistent increase in economic growth in Sun-Saharan African countries.

Delimitations

The focus of the study is to examine the moderating effect of governance indicators on the relationship between external debt and economic growth in Sub-Saharan Africa. Not all African countries are included in the study.

7

External debt, economic growth and governance structures of countries outside Sub-Saharan Africa are omitted from the study. All the six governance indicators thus, voice and accountability, political stability and lack of violence, regulatory quality, government effectiveness, rule of law and corruption are all included in the study. The six indicators are used as a measure of country level governance. The study employed 38 Sub-Saharan African countries out of the 48 Sub-Saharan Africa countries due to availability of the data. Although public debt consists of external debt and domestic debt, the focus of the study was on external debt.

External debt as a percentage of Gross National Income (GNI) is used as a proxy for external debt due to the availability of data for the regions and the period under study. Real GDP per Capita is used as a proxy for measuring economic growth in Sub- Saharan Africa.

Definition of Terms

External Debt

External debt is the debt that is owned by a country to its creditors from a foreign country. The international monetary Fund (IMF) defines external debt as the outstanding amount of actual, current and non-contingent liabilities that require payment of interest or principal by the debtor at some points in the future and that are owed to non-residents by residents of an economy. External debt is the portion of a country's debt that is borrowed from foreign lenders including commercial banks, governments or international financial institutions. These loans, including interest, must usually be paid in the currency in which the loan was made. In order to earn

8

the needed currency, the borrowing country may sell and export goods to the lender's country.

Economic Growth

Economic Growth refers to steady increases in the economy's real Gross Domestic Product (GDP) or national product overtime. Following standard practice, real per capita GDP growth is used as the measure for economic growth (Levine et al., 2000).

Economic growth is how much more the economy produces than it did in the prior period. An increase in the amount of goods and services produced per head of the population over a period of time. Economic growth is the increase in the inflation-adjusted market value of the goods and services produced by an economy over time. It is conventionally measured as the percentage rate of increase in real Gross Domestic Product, or real GDP

Country Level Governance

It is the way in which a country is being governed and how decisions are taken and implemented by the government.

Governance comprises the mechanisms required to balance the powers of the members (with the associated accountability), and their primary duty of enhancing the prosperity and viability of the organization. Country-level governance is measured by six indicators thus, political stability and absence of violence/Terrorism, voice and accountability, Government effectiveness, rule of law, control of corruption and regulatory quality.

Organization of the Study

The study is delineated into five chapters. Chapter one is the introduction to the study. It describes the background to the study, statement of the problem, the purpose of the study, research objectives, hypothesis, significance of the study, delimitations, definition of Terms, and organization of the study.

Chapter two outlines the review of theoretical and empirical literature of the study .The empirical literature summarizes the existing literature pertaining to the study. The theoretical framework deals with the theories supporting the study.

Chapter three contains the research methods underpinning the study. It comprises the research design, study area, study population, model specification, data sources, data processing and analysis and a chapter summary of the research methods.

Chapter Four deals with the results and discussion of the data analysed. Chapter Five provides the summary, conclusions and recommendations, and suggestions for future study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter presents a number of issues in the literature that pertain to external debt and economy growth. This section presents theoretical and empirical review on external debt, country-level governance and economic growth.

New Growth Theory

According to Romer (1990), the New Growth theory argues that economic growth will increase if much attention is given to investment into human capital, innovations and knowledge. The New Growth theory considers these factors as essential for economic growth because the new growth theory is endogenous.

North (1995) argues that, institutions contain incentives that need to be created in order for people in an economy to improve in their skills, invest in more resourceful technology, and also to be able to help in the organization of efficient market.

Mincer (1984), argues that, human capital comprise the production of new knowledge which is the source of innovation and of technical change which drives all factors of production and not just the transmission and embodiment in people of available knowledge. The New Growth theory also argues that economic growth is generated out of a system as a direct result of internal processes. The economic growth is generated from within a system as a direct result of internal processes according to new growth theory. Exactly

so, the theory notes that the upgrading of a nation's human capital could lead to economic growth by means of the development of new forms of efficient and effective means of production.

The New Growth theory is of the view that there will not be increase in economic growth if there is lack of effective and efficient human capital. This is because, the implementation of good country-level governance, the utilization of capital inflow for innovative, developmental, technological and productive purposes depends on the effectiveness of human capital.

Moreover, the New Growth theory argues that growth is endogenous. This means that if the internal factors are not strong enough or there is lack of effective internal factors like institutions, human capital, the external factors like capital inflows cannot meet the purpose for which it is meant to accomplish. In order for a society to produce and accept changing technological conditions in economic settings, there should be persistent economic growth. New growth theory provides a new opinion of the role of institutions in generating the necessary conditions for growth in an economy driven by new knowledge. Institutions manage the structures of incentives in society; this makes markets effectiveness dependent on political processes (Olson, 1996).

As economies grow and technologies change, our institutions will need to develop new provisions and solutions for economic problems concerning the law governing the economy (Thurow 1999).There is constraint on the growth rate of any county, not just by its economic situation, but by its institutions, its political system, its belief systems and its past history (North 1995).

Debt Overhang Theory

Debt Overhang Theory states that if borrowed funds are used for productive investments, this should lead to higher growth and thereby aid timely debt repayment (Pattillo, 2011). This theory also states that economic performance deteriorates as results of high level of current debt. This is because individuals are discouraged to invest and save due to rise in future tax on output Krugman (1988). External debt accumulation can boost investment and can also dwindle investment, Cohen's (1993). According to debt overhang theory, external debt has a direct positive effect on economic growth until a point where by additional debt, it will have a negative effect on economic growth.

Through private investment, external debt affects economic growth because domestic and foreign investors are discouraged from providing further capital. The zeal to invest into human capital and new strategies diminishes as a result of debt overhang.

According to Were, (2001) debt overhang is much wider in that the effects of debt do not only affect investment in physical capital but any activity that involves incurring costs up-front for the sake of increased output in the future. Such activities include investment in human capital (in terms of education and health) and in technology acquisition whose effect on growth may be even stronger over time.

Claessens and Diwan (1990) argue that "debt overhang is a situation in which the illiquidity effect, the disincentive effect, or both effects are strong enough to discourage growth in the absence of concessions by creditors". This

13

is a "narrow" definition of the debt overhang where the impact of a high external debt that is linked to the tax disincentives argument, where any success in indebted country's economic performance is taxed away by creditors and ultimately little is left over for domestic investment and subsequent growth (Hjertholm, 2001).

Relation of theory to research

The epilogue of the New Growth theory in relation to the study aids as the fundamental base of the research.

However, in conclusion, the new growth theory argues that investment in human capital coupled with good institutions will help the utilization of external debt that can help to boost and increase the efficient use of resources, increase in the rate of developmental projects and infrastructures, and speed up the rate of production to boost economic growth.

Institutions manage the structures of incentives in society to enhance and instill a persistent economic growth (Olson 1996). Nevertheless, external debt can help to boost the technological settings of an economy thereby increasing the efficient use of resources, increasing in the rate of developmental projects and infrastructures, speeding up the rate of production to boost economic growth.

The study therefore argues that institutions or country-level governance, matters in supporting and checking the effective utilization of external debt to foster economic growth in Sub-Saharan African countries.

The debt overhang theory states that external debt enhances economic growth if used for productive activities (Pattillo, 2011). It also concludes that, although external debt enhances economic growth, it can have a negative

14

effect on economic growth if is not optimally used for productive purposes and it escalates (Pattillo, 2004).

The study therefore seeks to examine the role of country-level governance in the relationship between external debt and economic growth.

External Debt and Economic Growth

Economic growth refers to steady increases in the economy's real gross domestic product or national product overtime.

Pattillo and Ricci (2011) analyzed the impact of external debt and debt reduction on growth using a panel data from 1969–1998 of 93 developing countries. They employed different panel estimation techniques (i.e. fixed effects and dynamic system GMM).They reported that the average impact of debt on per capita growth seems to become negative for debt levels above 30–40% of GDP but that the marginal impact becomes negative for debt levels around 15–20%. The study concludes that, at low levels of external debt the impact on economic growth seems to be positive.

Ejigayehu (2013) also examined the effect of external debt on economic growth of selected heavily indebted poor African countries through the debt overhang and debt crowding out effect. The results showed that external debt affects economic growth by the debt crowding out effect rather than debt overhang. Moreover, in an attempt to mark out debt servicing history, the study reported that the selected countries are not paying (servicing) more than 95% of their accumulated debt.

Also, Afonso and Jalles (2013) used a panel of 155 countries over the period 1970–2008 to assess the links between economic growth, total factor productivity and government debt. They concluded that there is a general negative effect of government debt on growth. In particular, for the subsample

including OECD countries, there was evidence that the average growth rates of the countries with low debt to GDP ratios (lower than 30%) were similar to those of countries with high debt ratios (higher than 90%).

Again, Égert (2013) examined whether public debt has a negative nonlinear effect on growth if public debt exceeds 90% of GDP. Égert concluded that the negative relationship between debt and growth was sensitive to modelling choices (including the time dimension, country coverage considered, data frequency and assumptions on the minimum number of observations required).

Chowdhury (2001) analysed the impact of foreign debt on growth in low and middle income countries, covering 1982–1999. Using panel causality test Chowdhury concluded that the causality runs from debt to growth, with a significant negative causal impact of debt on growth. Abbas and Christensen (2007) applied Granger causality regressions and panel data methods to test the relationship between debt and economic growth. The database used was a specific public domestic debt, covering 93 low income countries and emerging markets over 1975–2004.The study found that there is bidirectional and statistically significant causality; public domestic debt has a strong positive impact on per capita income and although not as statistically strong and further concluded that economic growth also has a clear positive impact on public domestic debt.

Jayaraman and Lau (2009) also examined the relationship between external/public debt and economic growth in six Pacific Island countries during 1985–2004 using panel Granger causality estimation. Their empirical results indicated that there was no evidence of a long-run Granger causality

relationship between real output and the external debt to GDP ratio or between the same output index and the budget deficit to GDP ratio. However, there was a significant causal relationship running from external debt and also budget deficit to output in the short run. In regard to the reverse relationship, in the long run, the study reported that there was the absence of causality.

Also, Butts (2009) reported the existence of bidirectional causality relationships between the two variables for several countries, which means that the performance of both variables was interrelated. He further concluded that there was clear evidence that in the short and long run, Granger causality from economic growth to short-term external debt was present in 13 Latin American and Caribbean countries.

Ferreira (2009) also tested the Granger causality relationship between public debt and GDP. The main aim was to find the Granger causality relationship between the growth in real GDP per capita and public debt, using the current primary surplus/GDP and gross government debt/GDP ratios. The annual data for 20 countries between 1988 and 2001 was used and the results showed that there is a clear Granger bidirectional causality between the variables.

Again, Johansson (2010) studied the direct effect of debt relief. The study contained data form 118 low- and mid-income developing countries from 1989 to 2004. She also concluded that there is no direct link between debt relief and growth.

Fiagbe (2015) studied the effect of external debt on economic growth in Sub-Saharan African using a sample of 39 SSA countries for 24 years (1990-2013). He used GMM estimation technique in the analysis to obtain

17

robust estimates of the effect of external debt on economic growth. The study accounted for unobserved country-specific time invariant effects, time series variations in the data, controls for endogeneity, autocorrelation, heterogeniety and other biases that may characterize panel estimation model. The study results showed that external debt negatively affects economic growth in SSA. Moreover, country classification based on the level of per capita income does not significantly influence the external debt-growth relationship in the region. Furthermore, the estimation result did not support a non-linear relationship between external debt and economic growth.

Geiger (1990) aimed to assess the effect of external debt on economic growth in 9 South American countries covering a 12-year period (1974-1986). The study used Lag distributional model to analyse the data and he reported that there was a significantly negative relationship between external debt and economic growth.

Rockerbie (1994) adopted Ordinary Least Square Estimation to find the effect of external debt on economic growth of 13 less developed countries for the period 1965-1990. His model captured variables which represent world economic condition, monetary and fiscal policies, and debt variables. The study established a negative relationship between debt and investment.

Ahmed and Shakur (2011) aimed to bring to light the problems created by the external debt to economic growth of Pakistan using the time series data from 1981 to 2008 and arrived at the conclusion that the growth rate of GDP per capita had negative relationship with external debt, population growth and trade openness but a positive relationship with investment. They conclude that their analysis estimates that there was a unilateral relationship between

external debt and economic growth, so therefore, external debt was the main economic indicator behind low economic growth even though other macroeconomic variables also affect economic growth.

Ogunmuyiwa (2011) examined whether external debt actually promotes economic growth in developing countries using Nigeria as a case study. The results revealed that causality did not exist between external debt and economic growth as causation between external debt and economic growth was found to be weak and insignificant in Nigeria. The results led to the conclusion that since the causation between external debt and economic growth could not be established in the Nigerian context and therefore external debt could thus not be used to forecast improvement or slowdown in economic growth in Nigeria, neither could it predict changes in gross domestic product with the changes in economic development.

Cohen (1993) also estimated the investment equation of 81 developing countries using ordinary least square method. He argued that external debt did not affect the GNP growth rate of the 81 countries.

From the on-going discussions, there is an ambiguity on the effect of external debt on economic growth.

Country level governance and economic growth

Chauvin and Kraay (2007) in their studies used country policy and institutional assessment (CPIA) as a proxy for institutional and governance quality in roughly the same period. Their study was conducted on 62 low-income countries, and they reported that the CPIA have a positive effect, but not to be sufficiently significant, in their cross section regression analysis. They also further reported that there was a negative relationship between high

19

CPIA levels and debt relief before the enhanced HIPC initiative was introduced.

Freytag and Pehnelt (2009) studied the relationship between governance indicators and debt relief. They used a variety of governance indicators, and their results showed that none of them had a significant effect on the amount of debt relief before the enhanced HIPC initiative, and just three of them had a positive and significant effect on debt relief in the period after the introduction. They further concluded that there was a mixed relationship between governance indicators and debt relief.

Jalles (2011) conducted a study on the impact of democracy and corruption on the debt-growth relationship in developing countries. The study was conducted in a panel of 72 developing countries over the 1970-2005 period. Jalles adopted Fixed-Effects, System-GMM, Granger-Causality in the study. He used control of corruption and democracy, as a proxy for institutional quality and governance in general. He concluded that external debt influences the growth performance of emerging countries. His results indicated that corruption and weak governance, specifically, affect the debt-growth relationship in these countries. Moreover, he recorded negative effect of debt on growth as significant in countries with higher levels of corruption.

Alesina and Perotti (1996) found a negative effect of political instability on growth by demonstrating that institutional quality, as measured by bureaucratic efficiency, absence of corruption, protection of property rights, and the rule of law, is important for growth.

Mauro (1995) argued that subjective indexes of corruption are negatively linked with investment and economic growth but finds that

20

corruption affects primarily the volume of investment rather than its efficiency. More specifically, high levels of corruption affect the quantity of investment by increasing the uncertainty and instability in the economic environment. He also finds that efficient bureaucracies and rule of law positively influence growth.

Barro (1996) found that once the maintenance of the rule of law, free markets, small government consumption, human capital, and the initial level of real per capita GDP are held constant, the overall effect of democracy on growth is weakly negative.

Fratzscher (2009) explained that there is a time varying relationship between debt management and growth, with countries with weaker institutions experiencing faster economic growth in the short term, but then experiencing temporary growth reversals in the medium to long term as the unconstrained debt growth causes burdens on the economy. Kutivadze (2011) examined the effect of public debt on growth by controlling for the institutional environment in which the debt was issued in countries grouped by income levels for the period of 1990 to 2007. His study reported a support for the hypothesis that the quality of institutions is a potentially important factor for long-term growth.

Qayyum and Haider (2009) examined the role of Institutional Quality in foreign aid, external debt and economic growth Nexus in low-income countries. The main aim of this study was to attempt to investigate empirically the impact of external debt and foreign aid on economic growth by taking into consideration the quality of institution in terms of effective governance. Annual data for the period 1984 to 2008 was taken from a panel of sixty

21

developing countries. The results indicated that the good governance and foreign aid affect the economic growth positively while that of external debt had a negative impact.

Decker and Lim (2008) examined various elementary drivers of economic growth focusing in particular on political as well as the economic institutions. Whereas controlling for geographic endowments and economic integration, the distinction between the two types of institution made it possible to determine the inferior or superior performance of an economy based on either or both of these two types of institutions. The core empirical model was that of Rodrik et al. (2004) with some variations to accommodate the dynamic aspects. The results showed that political-economic institutions play a significant positive role in determining the level of income while the political institutions (democracy) were insignificant, may be due to the non-linearity of the development of democratic rights.

Cui and Gong (2008) worked out the inter-linkages between foreign aid, domestic capital accumulation and external debt. They argued that in the long run domestic capital accumulates, consumption increases and the external debt decreases whenever there is a permanent increase in foreign aid. In the short run the comparative static analysis showed that a representative agent becomes more patient and initially the investment increases and external debt declines if the foreign aid level increases. They also provided basic support regarding a significant impact of foreign aid on the economic growth and development in the case of developing countries.

22

Lensink and Morrissey (2000) argued that uncertainty on the magnitude and timings of foreign aid imply negative impact on the investment that in turn may dampen the economic performance of a country.

From the ongoing discussion, country-level governance plays an important role in enhancing economic growth.

External Debt and Country-level Governance

Asghar, Awan and Rehman (2012) analysed governance as a causative factor responsible for high external debt accumulation in Pakistan. Using annual data for the period 1990-2008, Granger causality test was employed to investigate the causal relationship between governance and burden of external debt. They reported that political stability may help to forecast burden of external debt whereas voice and accountability (VA) appears to be an insignificant variable. Sustained efforts on political, economic and institutional fronts can help the economy to overcome the problems which have emerged because of high burden of external debt. They further reported that political instability appeared to be one of the major determinants which deter the process of economic growth in the country and is also responsible for huge burden of external debt. Political instability negatively and significantly affects the external debt accumulation.

External Debt, Country Level Governance and Economic Growth

Jalles(2011) conducted a study on the impact of democracy and corruption on the debt-growth relationship in developing countries. The study was conducted in a panel of 72 developing countries over the 1970-2005 period. Jalles adopted Fixed-Effects, System-GMM, Granger-Causality in the

23

study. He used control of corruption and democracy, as a proxy for institutional quality and governance in general. He concluded that external debt influences the growth performance of emerging countries. Additionally, corruption and weak governance, specifically, affect the debt-growth relationship in these countries. His results also indicated that negative effect of debt on growth are significant in countries with higher levels of corruption.

Presbitero (2008) investigates the extent to which external debt affect economic growth, focusing on the role played by the policy and institutional framework and the results for a panel of 114 developing countries show that the debt growth nexus depends on institutions and policies. They found out that debt relief policies must be channelled considering the rate of institutional quality in a particular country, thus whether weak or strong institutions.

These empirical studies show that, external debt linked with country-level governance will aid to enhance economic growth in Sub-Saharan Africa.

Control Variables

Kamundia, Gitahi and Mwilaria (2015) aimed at finding out the effect of public debt on the level of private investment in Kenya. They used time series data from 1980 to 2013. Granger causality test was used to determine the direction of causality between public debt and private investments. Ordinary least squares estimation was used to estimate the model. Granger causality tests show that there is the presence of unidirectional causality from debt to private investments. They further reported that debt plays a huge role in determining the level of private investments. Again the results found that Debt have a negative effect on private investments. The authors therefore

24

recommended that Kenya should reduce its level of borrowing so as to encourage private investments.

Fiagbe (2015) studied the effect of external debt on economic growth in Sub-Saharan African using a sample of 39 SSA countries for 24 years (1990-2013). He used GMM estimation technique in the analysis to obtain robust estimates of the effect of external debt on economic growth. Again, the study also reported that control variables such as labour force, investment, and export growth all have positive and significant effects on economic growth.

Chapter Summary

The chapter explained the theories employed in the study thus the new growth theory and debt overhang theory. The new growth theory states that growth is endogenous. It explain that if the internal factors like institutions and human capital are not strong enough, external factors like external debt cannot meet the purpose for which it is meant to accomplish. The chapter also employed the debt overhang theory which states that there can only be timely debt repayment and higher growth if borrowed funds are used for productive investments.

The chapter also presented the empirical justifications between external debt, country-level governance and economic growth and the control variables used in the study.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter presents the systematic procedure followed in conducting the study. It presents the methods and tools of analysis employed in the study. The chapter is organized as follows. It presents a detailed description of the research design, model specification, justification and measurement of variables in the model, sources of data and panel structure, estimation techniques as well as tools for data analysis and a summary of the chapter.

Research Design

The study seeks to investigate the effect of external debt on economic growth moderated by the country level governance in sub-Saharan Africa. To achieve this objective, a quantitative research design in the form of causal research design appropriate for panel econometric model is adopted to test the hypotheses of the study. Previous studies used panel econometric model (Presbitero, 2008; Jalles,2011).There are reasons why the different studies made use of panel econometric model when investigating the effect of external debt on economic growth in a cross country study. This is critical in testing the hypotheses of the study and hence the motivation for employing panel econometric model.

Research Paradigm

The study is situated within the context and assumption of positivist philosophy which support the use of quantitative method. The positivist philosophy assumes that objective knowledge systematically pursued by

researchers is based on general causal laws. Furthermore, the philosophy assumes that as knowledge is externally objective, researchers take strictly neutral and detached positions towards the phenomenon being investigated (i.e. no or minimized normative judgments). Such a stance ensures that the values and biases of the researcher do not affect the study and thereby threaten its validity.

Various statistical tests such as the AR-test and Sargan test are being applied in order to ensure that the result of each variable is internally valid. External validity has to do with generalization of the research findings. It is concerned with whether or not the study's findings can be generalized to a comparable units of analyses in comparable settings − whether the findings of this study can be generalized to a panel of countries in other developing regions or other developing countries.

Data Collection Procedures

This connotes the criteria with which the countries in Sub-Saharan Africa were involved in the study. This is essential because the results of the study will be the outcome of the sample of the study. Out of the forty-eight (48) countries in Sub-Saharan Africa, thirty-eight (38) countries were used due to the availability of data.

In this study, economic growth is the dependent variable and external debt is the variable of interest while country-level governance is the moderating variable and macroeconomic variables discussed above are control variables. The variables used in this model were determined based on the existing literature on the topic, availability of data, economic theory and whether they fit well in the model in statistical terms.

27

Data on all control variables were obtained from World Development Indicators (WDI) and the Global Financial Development (GFD) databases of the World Bank. The countries in the study were strategically selected on the basis of availability of data.

Models Specification

The moderating effect of country-level governance in the relationship between external debt and economic growth.

Economic growth advocates generally believe that the presence of external debt in the home country tends to decreased growth rates faced by the country. Chinn and Ito (2006), and Baltagi (2009), suggest that past economic growth has positive effect on current economic growth which supposes that lag values of the dependent variable (economic growth) must be included in the explanatory variables to avoid misspecification. The model shows the role of country-level governance in the relationship between external debt and economic growth which is the main purpose of the study.

The effect of external debt on economic growth and the effect of country-level governance on economic growth are all embedded in the model. Following Aggarwal (2006) and Jalles (2011), the dynamic panel model of the role of country-level governance in relationship between external debt and economic growth is specified as:

$$GDPPC_{it} = \alpha_0 + \alpha_1 GDPPC_{it-1} + \alpha_2 EDGNI_{it} + \alpha_3 GOV_{it} +$$

$$\alpha_4 EDGNI * GOV_{it} + \alpha_5 \sum Z_{it} + \ldots\ldots\ldots\ldots (1)$$

Where *GDPPC* economic growth, refers to the GDP per capita, *EDGNI* is external debt measured as external debt as a percentage of gross national income (GNI). $\sum Z_{it}$ represents the set of control variables used in the study,

28

thus inflation rate (INF) which is the rate of change in consumer price index, *POP* is the population growth derived from total population, *SCH* is the schooling measured using secondary school enrollment, TO is trade openness and is measured as a percentage of GDP, TNR is total natural resources measured as a percentage of GDP, GNFP is gross capital formation measured as a percentage of GDP.

Also, *i* refers to the country (*i*=1, 2, 3....47); *t* refers to the time period from 1996 to 2016 GDPPC$_{it-1}$ = First lag of economic growth, EDGNI is the external debt variable, X = Set of control variables; ε = the error term assumed to be serially uncorrelated, α is

$EDGNI * GOV$ is the interaction term between governace indicators and economic growth. GOV represents the composite of the six (6) country-level governance indicators which is the average of the SIX (6) country-level governance indicators.

To account for potential endogeneity resulting from reverse causality between external debt (and other explanatory variables) and economic growth, omitted factors that can explain both the evolution of external debt and of economic growth and measurement erronrs, the study estimate equation (1), (2) and (3) using Arrelano-Bover/Blundell-Bond dynamic system GMM estimation technique.

The use of Arrelano-Bover/Blundell-Bond dynamic system GMM estimation technique is required to deal with the potential endogeneity of the explanatory variables (most notably, external debt variable) and with the fact that in the equations the error term is correlated with the lagged dependent variable. Practically, there is reverse causality because economic growth might

29

lead to larger measured external debt either because economic growth enables external debt or because a larger percentage of external debt is measured when it is channelled through the growth of the economy. Also, economic growth might lower the external debt of the country.

The study also presents the system GMM as a check for all the explanatory variables where the internal instruments are used. The dynamic system generalized method of moments (GMM) serves as a check to the problem of endogeneity (Morrissey & Udomkerdmongkol, 2012).

A Priori Expectation

Table 1 shows the a priori expectations of the variables of the study in models 1, 2 and 3. The priori expectation gives the anticipation of how the variables in the models would behave before they are actually estimated.

Table 1 : A priori expected signs of the variables

VARIABLE	MEASUREMENT	SIGN
GDPPC	Economic Growth using GDP PER CAPITA	
EDGNI	External Debt as a percentage of GNI	-
GOV	Country-level Governance using all the indicators	+
GOV*EDGNI	Interaction term of External Debt and Governance Indicators	+
INF	Inflation rate using consumer price index	-
TO	Trade openness as a percentage of GDP	+
SCHOOLX	Schooling using Secondary school enrollment using	+
TNR	Total natural resources as a percentage of GDP	+
GCFP	Gross capital formation as a percentage of GDP	+
POP	Population growth as a percentage of GDP	-

Source: Authors Construct, Asante (2019).

Variable Source and Description

The study employed secondary data. The study used a pooled (cross-country, time series) dataset consisting of thirty-eight (38) sub-Saharan African countries. Following majority of cross-country empirical studies, the sample period 1996-2016. The study used annual data rather because the economic growth data are available on a yearly basis for most countries in the sample.

Table 2 : Variable Source and Description

VARIABLE	DESCRIPTION/MEASUREMENT	SOURCE
Economic Growth	Economic growth is the rise in the production of goods and services for a period of time. It is measured by Gross domestic products per capita.	World Development Indicators (1996-2016)
External Debt	External debt is the amount of money borrowed from a foreign country. It is measured as a percentage of Gross national income (GNI).	World Development Indicators (1996-2016)
Country-Level Governance	It is the way in which country is being governed and how decisions are taken and implemented by the government. It is measured by the six governance indicators.	World Bank Governance Indicators (1996-2016)
Control of corruption	Control of corruption captures the perception of the extent to which public power is exercised for private gain. Measured by estimates ranging from -2.5 to 2.5 approximately.	World Bank Governance Indicators (1996-2016)
Voice and Accountability	Shows the perceptions of the extent to which a country's citizens are able to participate in selecting their government as well as freedom of expression, association and a free media. Measured by estimates ranging from -2.5 to 2.5 approximately.	World Bank Governance Indicators (1996-2016)
Rule of Law	Rule of Law represents perceptions of the extent to which citizens have assurance in the laws of a country and abide by the rules of the society, and in particular, the quality of contract enforcement, property rights, the	World Bank Governance Indicators (1996-2016)

31

Table 2, continued	police and the courts as well as the likelihood of crime and violence. Measured by estimates ranging from -2.5 to 2.5 approximately. .	
Government effectiveness	Government effectiveness captures the perceptions of quality of public services, the quality of civil services and the degree of its independence from political pressures, the quality of policy formulation and implementation and the credibility of the government commitment to such policy. Measured by estimates ranging from -2.5 to 2.5 approximately.	World Bank Governance Indicators (1996-2016)
Political Stability and Absence of Violence/Terrorism	Measures the perception of the likelihood of political instability that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. Measured by estimates ranging from -2.5 to 2.5 approximately.	World Bank Governance Indicators (1996-2016)
Regulatory Quality	Measures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private development. Measured by estimates ranging from -2.5 to 2.5 approximately.	World Bank Governance Indicators (1996-2016)
Inflation	It reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. Inflation is measured by the consumer price index.	World Development Indicators (1996-2016)
Trade Openness	It's a measure of economic policies that either restrict or invite between countries.	World Development Indicators (1996-2016)
Total Natural Resources	Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.	World Development Indicators (1996-2016)
Schooling	Schooling is measured by using secondary school enrolment.	

Table 2, continued

Gross Capital Formation	Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. It is measured as a percentage of GDP.	World Development Indicators (1996-2016)
Population Growth	Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. Its measures as a percentage of GDP.	World Development Indicators (1996-2016)

Source: Authors Construct, Asante (2019).

Estimation Techniques

The study employed different panel estimation techniques. Measurement errors concern external debt as well as country governance indicators and economic growth. Reverse causality concern the fact that a high external debt of a country affects its growth rate while more improved economy or high growth rate reduces the country's external debt. It has been shown in more recent literature that the fixed effects (FE) and the random effects (RE) estimators do not produce robust and consistent results when there is endogeneity.

To tackle the potential bias due to reverse causality and measurement errors the study explored the use of lagged values of the endogenous explanatory variables as instruments in a system GMM dynamic estimation framework (i.e. Arellano-Bover/Blundell-Bond system GMM two-step following Arellano and Bond (1991) and Arellano and Bover (1995)/Blundell and Bond (1998) respectively. As a double check that the results concerning the effect of external debt on economic growth are not driven by invalid internal instruments for the external debt variable, the study also explores with country level governance indicators in countries as a set moderating variable

33

in system GMM estimation. This is motivated by studies like Aggarwal et al. (2006; 2011) and Fayissa and Nsiah (2012). The dynamic system GMM estimation technique was employed because it has been used and found to produce robust results by Calderón-Garcidueñas (2008) and Acosta, Baerg, and Mandelman (2009).

Post Estimation Tests

The GMM based estimators do not impose a lot of assumptions on the error term. Two popular tests are proposed after the GMM estimation (Blundell & Bond, 1998). The first is the Arellano and Bond test of autocorrelation (AR-test) which is built in the STATA 15 package using *xtatabond2* (Roodman, 2009). The AR-test report the test statistics for the first and second difference autocorrelation in default mode but the lag levels can be adjusted. It has a null hypothesis of no autocorrelation in the first difference error which requires that we fail to reject the null hypothesis. That is, the bigger the probability value of the AR-test the lesser the problem of autocorrelation in the model. A rectification of the autocorrelation problem is the two-step estimation. In two-step estimation, the standard covariance matrix is robust to individual specific autocorrelation and heteroskedasticity, but the standard errors are downward biased (Baltagi, 2008). Windmeijer (2005) procedure can be used to get the finite-sample corrected two-step covariance matrix (Baltagi, 2008).

The second test is the Sargan test of valid over-identifying restriction. It has a null hypothesis of correct over-identifying restrictions which requires that we fail to reject the null just as in the case of the AR-test.

System GMM estimation has the capacity by default to generate results that are invalid and appear valid. Therefore Roodman (2006) provides some tests aside the AR-test and Sargan or Hansen test to consider for efficient estimation. The first is the difference-in-Sargan test for whether subsets of instruments are valid in two-step robust estimation.

Tools for Data Processing and Analysis

The study will employ both descriptive and quantitative regression analysis. Charts such as tables were employed to assist in the descriptive analysis. Panel estimation techniques are employed. All estimations were carried out using STATA version 15 statistical packages.

Chapter Summary

This chapter has presented the systematic procedure followed in conducting the study. The study followed the standard literature of Chin and Ito (2006), Baltagi et al. (2009), Aggarwal et al. and (2006) to specify the econometric model for the effect of external debt on economic growth. The study used a pooled (cross-country, time series) dataset consisting of forty-seven (48) sub-Saharan African countries and time period from 1996 to 2016. The reason for choosing this period is that it is the period for consistent data for the variables of interest.

The variables used in the study are economic growth, inflation rate, gross capital formation, total natural resources, trade openness, population growth, schooling, country level governance indicators, and the interaction term(GOV). The analysis of the regression results used both internal and external instruments in a system GMM estimation in handling endogeneity

35

problem in the external debt, other explanatory variables and economic growth variable to obtain efficient estimates.

Having presented the systematic procedure to be followed in the study, the next chapter presents the results and discussion of the empirical analysis.

CHARPTER FOUR

RESULTS AND DISCUSION

Introduction

Under this chapter, the presentation and analysis of the results from the estimation of the role of country level governance in the relationship between external debt and economic growth for Sub-Saharan Africa are being demonstrated. The empirical analysis uses annual data on 38 Sub-Saharan African countries for a 20-year period (1996-2016). This chapter covers five sections. It comprises the presentation of descriptive statistics of variables used in the model, reports the results of diagnostic tests ran and the presentation and discussion of the results of estimated model.

Descriptive statistics

Table 3 presents the results of the descriptive statistics. The values that are considered in descriptive statistics are mean, standard deviation, maximum and minimum. Out of 48 countries in Sub-Saharan Africa, 38 countries in the region were used for the descriptive statistics for the period of 1996-2016 respectively because of the unavailability of data of certain countries on some of the various variables. The maximum signifies the largest observation while the minimum shows the smallest observation. Standard deviation denotes how the variables are dispersed around the mean. The mean is the average value of the variables attained.

Within the period 1996-2016, Real GDP recorded a mean of 1582.493 within the limits of 72.74622 and 22742.38 as minimum and maximum values respectively and 2678.142 as standard deviation. The differences in the growth

among countries in Sub-Saharan African countries might be as a result of circumstances from issues arising from both external and local economies. Some of these factors may be the rise and fall in the purchasing power of the currencies in the various regions, low level of education in the regions, differences in the population and change in the terms of trade.

External debt measured as a percentage of GNI records a mean of 75.0489. The minimum of the external debt ranges from 3.8992 to a maximum of 1380.766 respectively. This result shows high level of external debt in the region as the country with the largest percentage records 1380.766. This shows how most countries in Sub-Saharan Africa depends on external debt for its activities.

Country-level governance (GOV) which is the aggregate index of all the six governance indicators averaged negative 0.64454 within the limits of -2.10032 and 0.879893 as minimum and maximum respectively. Governance is measured in units ranging from -2.5 to 2.5 with higher values signifying good governance. The country in Sub-Saharan Africa with the highest unit of institution recorded 0.879893 which indicates low level of country level governance in the region.

In the period of 1996 to 2016, control of corruption (COC) averaged negative 0.667 while some regions recorded as low as negative 1.81344 and recording maximum of 1.217 in other regions. The difference in the variation of the level of control of corruption may be due to the utilization of foreign debt for the right activities.

Government effectiveness (W) averaged negative 0.75467 with minimum and maximum of negative 1.88489 and 1.049441 respectively in the

39

period of 1996 to 2016. Political stability and lack of violence (PSAVT) recorded a mean of negative 0.53089 with some countries in the region recording as low as negative 2.84465 and a maximum of 1.219244 which shows low level of political stability and lack of violence in the period 1996 to 2016 in Sub-Saharan African countries. Over the period under review, regulatory quality (RQ) averaged negative 0.63618 exhibiting low average regulatory quality in the region. Regulatory quality recorded a minimum and maximum of negative 2.29753 and 1.12727respectively.

Moreover, between 1996 to 2016, rule of law (ROL) recorded an average value of negative 0.69501 with minimum and maximum values of negative 2.23 and 1.07713 respectively. Voice and accountability which is also one of the six governance indicators averaged negative 0.57575 and some countries in the region recording as low as negative 2.00014 and a maximum value of 1.015621.

Trade openness (TO) recorded an average of 76.17523 percent. Other countries in the region recorded as low as 17.85861 percent and as high as 531.7374 percent. Secondary school enrollment (SCHOOLX) recorded a mean of 38.77967 and other countries in the region recording a very low level of secondary school enrollment of 5. 21012 percent and a maximum of 102.7539 percent within the same period.

Within the period in review, inflation (INF) averaged 51.18305 percent with minimum and maximum of negative 35.8367 and positive 244411.03 percent respectively indicating high level of inflation in the region. The mean of gross capital formation (GCFP) is 22.33501 ranging within the limits of negative 2.42436 and positive 219.0694 respectively. Total natural resources

(TNR) on the average recorded 14.1988 with minimum and maximum of 0.001148 and 74.40291 respectively. Population growth (POP) averaged 2.672968 with other countries in the region recording minimum and maximum of 0.068723 and 7.917892 respectively within the period 1996 to 2016 in the region.

Descriptive Statistics

Table 3: Descriptive Statistics of the dependent and independent and independent variables

VARIABLES	MEAN	STD DEV	MIN	MAX	OBSERV
GDPPC	1582.493	2678.142	72.74622	22742.38	798
EDGNI	75.0489	116.3502	3.8992	1380.766	766
GOV	-0.64454	0.601866	-2.10032	0.879893	682
COC	-0.66692	0.603709	-1.81344	I.216737	684
W	-0.75467	0.60237	-1.88489	1.049441	683
PSAVT	-0.53089	0.895243	-2.84465	1.219244	684
RQ	-0.63618	0.599963	-2.29753	1.12727	683
ROL	-0.69501	0.639681	-2.13	1.07713	684
VA	-0.57575	0.717495	-2.00014	1.015621	684
TO	76.17523	47.45121	17.85861	531.7374	793
SCHOOL X	38.77967	23.22568	5.21012	102.7539	455
INF	51.18305	889.9233	-35.8367	24411.03	776
GCFP	22.33501	16.87035	-2.42436	219.0694	765
TNR	14.1988	13.80699	0.001148	74.40291	792
POP	2.672968	0.895397	0.068723	7.917892	798

Source: Authors Construct, Asante (2019)

GDPPC represents Economic Growth which is measured by GDP per capita. ED represents External Debt as measured by Gross National Income. GOV represents aggregate Country-Level Governance variable which is measured by the average of the country-level governace indicators. The six country-level governance indicators include, Control of Corruption (COC), Government Effectiveness (W), Political Stability and Absence of Violence (PSAV), Regulatory Quality (RQ), Rule of Law (ROL) and Voice and Accountability (VA) as shown in Table 1. TO represents Trade openness. SCHOOLX represents Secondary School Enrollment (% of GDP). GCFP represents Gross Capital Formation (% of GDP). TNR represents Total Natural Resources (% of GDP). POP represents Population growth. INF represents Inflation.

Correlation Analysis

Table 4 presents a pairwise correlational matrix for dependent variable, economic growth and its independent variable, external debt. To avoid multicollinearity in the model specification, the correlations between the independent variables must be less than 0.90 (Adam, 2016). An examination

42

of the correlation matrix shows that there is no high pairwise correlation between the independent variables except the correlation between the composite governance indicator and the individual governance indicators. It poses no multicollinearity problem because the individual governance indicators do not enter the same model with the composite governance indicator. It also shows the correlation matrix for the moderating variable that is country-level governance and the individual country-level governance indicators that is regulatory quality (RQ), rule of law (RL), control of corruption (CC) voice and accountability (VA), government effectiveness (GE) and political stability (PS). The result from Table 4 shows how the variables are well correlated with each other.

CORRELATION ANALYSIS

Table 4 : Correlation Matrix

	lnGDPPC	lnEDGNI	INST	COC	W	PSAVT	RQ	ROL	VA	lnTO	LnSCHOLX	lnINF	lnGCFP	lnTNR	lnPOP
lnGDPPC	1														
lnEDGNI	-0.5252	1													
GOV	0.3707	-0.2747	1												
COC	0.2918	-0.2501	0.9044	1											
W	0.3694	-0.2621	0.9159	0.8456	1										
PSAVT	0.4117	-0.1867	0.8197	0.6509	0.627	1									
RQ	0.3409	-0.3372	0.9071	0.799	0.8967	0.6223	1								
ROL	0.3626	-0.286	0.9687	0.8803	0.8876	0.7576	0.8817	1							
VA	0.1923	-0.1936	0.8679	0.7462	0.7432	0.6192	0.7392	0.8251	1						
lnTO	0.4392	-0.0174	0.1436	0.0966	0.0599	0.3393	0.022	0.1065	0.0585	1					
lnSCHOLX	0.7456	-0.3808	0.4623	0.4661	0.4542	0.3174	0.4371	0.4667	0.4199	0.3599	1				
lnINF	-0.1993	0.1486	-0.1949	-0.1349	-0.0939	-0.2219	-0.2327	-0.1904	-0.1456	-0.0516	-0.0122	1			
lnGCFP	0.3348	-0.2625	0.3024	0.2264	0.2522	0.3164	0.2959	0.2934	0.2159	0.4154	0.1188	-0.2623	1		
lnTNR	-0.3038	0.1565	-0.6032	-0.5629	-0.6049	-0.4281	-0.5409	-0.6305	-0.5241	-0.0151	-0.4538	0.0999	-0.0154	1	
lnPOP	-0.3384	0.121	-0.3747	-0.431	-0.4177	-0.1791	-0.3456	-0.3773	-0.323	-0.0822	-0.5526	-0.0393	0.1157	0.6516	1

Source: Authors Construct, Asante (2019).

Note: lnGDPPC is the log of Economic growth variable, lnEDGNI refers to log of External Debt, GOV refers to Country-Level Governanace, COC is Control of Corruption, W is Government Effectiveness , PSAV is Political Stability and Absence of Violence, RQ is Regulatory Quality, ROL is Rule of Law, and VA is Voice and Accountability (VA). lnTO represents the log of Trade Openness. lnSCHOOLX represents log of Secondry School Enrolment (% of GDP). lnGCFP represents the log of Gross Capital Formation (% of GDP). lnTNR represents the log of Total Natural Resources(% of GDP). lnPOP represents the log of Population Growth. lnINF represents the log of Inflation.

44

External Debt, Country-Level Governance and Economic Growth

This subsection presents the result of system GMM estimations on the empirical model stated in chapter three as results on the model. This section presents and discusses the empirical results on the objectives of the study. The regression results are presented in Tables 5 and Table 6. Table 5 presents the results of the effects of external debt and country-level governance on economic growth of SSA countries. Table 6 presents the results for the moderating role played by country-level governance in the relationship between external debt and economic growth of SSA countries. The regression outcomes are based on a sample of 38 Sub-Saharan African countries for the 20 years period (1996-2016). Moreover, discussion of the regression results centres on the results obtained from the System GMM estimation of the complete model.

Table 5 : Effect of external debt and country-level governance on economic growth in Sub-Saharan African countries.

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
InGDPPC (-1)	0.444***	0.512***	0.513***	0.527***	0.504***	0.519***	0.526***	0.558***
	[0.028]	[0.022]	[0.017]	[0.019]	[0.026]	[0.023]	[0.019]	[0.029]
		0	0	0	0	0	0	0
InEDGNI	-0.229	-0.190***	-0.190***	-0.195***	-0.192***	-0.186***	-0.186***	-0.169***
	[0.012]	[0.01]	[0.012]	[0.010]	[0.013]	[0.012]	[0.013]	[0.012]
		0	0	0	0	0	0	0
GOV		0.012						
		[0.029]						
		0.689						
COC			0.024					
			[0.020]					
			0.231					
W				0.100***				
				[0.036]				
				0.005				
PSAVT					-0.044***			
					[0.008]			
					0			
RQ						-0.109***		
						[0.018]		
						0		

Table 5, continued

ROL							0.107***	
							[0.027]	
							0	
VA								0.169***
								[0.019]
								0
lnTO	-0.272	-0.263***	-0.269***	-0.255***	-0.288***	-0.272***	-0.236***	-0.222***
	[0.031]	[0.043]	[0.020]	[0.045]	[0.043]	[0.050]	[0.041]	[0.040]
		0	0	0	0	0	0	0
lnSCHOOLX	0.336	0.210***	0.214***	0.189***	0.205***	0.229***	0.216***	0.209***
	[0.037]	[0.020]	[0.018]	[0.017]	[0.019]	[0.025]	[0.012]	[0.018]
		0	0	0	0	0	0	0
lnINF	0.005	0.006*	0.006*	0.006**	0.006*	0.005	0.011***	0.007**
	[0.003]	[0.004]	[0.004]	[0.003]	[0.003]	[0.005]	[0.004]	[0.004]
		0.103	0.083	0.026	0.075	0.281	0.004	0.042
lnGCFP	0.048	0.057***	0.061***	0.064***	0.064***	0.059**	0.036*	0.033
	[0.020]	[0.020]	[0.022]	[0.019]	[0.020]	[0.023]	[0.020]	[0.021]
		0.005	0.005	0.001	0.002	0.01	0.071	0.12
lnTNR	0.033	0.056***	0.057***	0.053***	0.061***	0.055***	0.044**	0.057***
	[0.008]	[0.017]	[0.017]	[0.012]	[0.021]	[0.018]	[0.021]	[0.017]
		0.001	0.001	0	0.004	0.002	0.04	0.001
lnPOP	-0.18	-0.106***	-0.079**	-0.109***	-0.096**	-0.108***	-0.127***	-0.118***
	[0.023]	[0.035]	[0.040]	[0.029]	[0.041]	[0.041]	[0.040]	[0.031]
		0.003	0.049	0	0.018	0.008	0.001	0

47

Table 5 continued

Diagnostics								
Wald Chi2(10)	7.95E+06	50941.6	2.69E+07	8.11E+06	6.18E+06	1.06E+05	7.21E+05	3.52E+06
Prob>Chic	0	0	0	0	0	0	0	0
AR(1):Z	-1.3867	-1.6478	-1.6582	-1.7343	-1.5638	-1.7221	-1.7029	-1.8798
(P-Value)	0.1655	0.0994	0.0973	0.0829	0.1179	0.085	0.0886	0.0601
AR(2):Z	-1.9746	-1.3725	-1.3769	-1.3055	-1.4376	-1.3329	-1.5101	-1.2272
(P-Value)	0.0483	0.1699	0.1685	0.1917	0.1505	0.1826	0.131	0.2198
Sargan Chi2	28.5843	28.5546	28.3795	28.1219	29.2027	28.8495	27.0289	28.8299
prob>Sargan Chi2	0.8057	0.3828	0.3916	0.4047	0.3511	0.3682	0.4622	0.3692
N0. OF Observations	298	227	227	227	227	227	227	227

Source: Authors Construct, Asante (2019).

Note: lnGDPPC(-1) is the first lag of the log of Economic Growth, lnEDGNI refers to log of External Debt, GOV refers to Country-Level Governance , COC is Control of Corruption, W is Government Effectiveness , PSAV is Political Stability and Absence of Violence, RQ is Regulatory Quality, ROL is Rule of Law, and VA is Voice and Accountability (VA). lnTO represents log of Trade Openness. SCHOOLX represents log of Secondary Scholl Enrollment (% of GDP). lnGCFP represents the log of Gross Capital Formation (% of GDP). lnTNR represents the log of Total Natural Resources (% of GDP). lnPOP represents the log of population Growth. lnINF represents the log of Inflation. Apart from the diagnostics section, all values in bracket are the standard errors of the coefficients values and values other than those in bracket represent the coefficient values; *** represents significant at 1%, **represents significant at 5%, * represents significant at 10%. The diagnostics section presents the values of the wald test, probability values of the Wald test, z values of AR(1), probability of z values of AR(1), , z values of AR(1), probability of z values of AR(1), probability of the Sargan test and the number of observations in order as shown in diagnostics section of table 5

48

External debt and economic growth in Sub-Saharan Africa

The first model in table 5 presents results on the effect of external debt on economic growth. At 1% significance level, external debt had a significant coefficient of -0.229. The result shows that external debt has a significant relationship with economic growth. This shows that a percentage increase in external debt will lead to 0.229% decrease in economic growth. The result indicates that, external debt impedes economic growth if it is not used for productive purposes. This means that when external debt is beyond certain thresholds, it negatively affects economic growth. This also means that if external debt is properly utilized, it will impact economic growth positively.

This result is consistent with Fosu (1999)   who explained the effect of external debt over economic growth on sub-Saharan Africa countries. He used the debt crisis period from 1980-1990 for his analysis. The main aim of Fosu was to examine the debt overhang hypothesis directly. The hypothesis states that foreign debt imposes a negative effect on countries economic growth even without or hardly affecting the level of investment. He reported that the debt variables which were included in the model took a negative coefficient on the period 1980-1990.

This results is also consistent with Pattillo, Poirson and Ricci (2011) who analysed the impact of external debt and debt reduction on growth using a panel data from 1969–1998 of 93 developing countries. They employed different panel estimation techniques (i.e. fixed effects and dynamic system GMM).They reported that the average impact of debt on per capita growth seems to become negative for debt levels above 30–40% of GDP but that the marginal impact becomes negative for debt levels around 15–20%. They also

49

conclude that, at low levels of external debt, the impact on economic growth seems to be positive.

The results is consistent with Afonso and Jalles (2013) who used a panel of 155 countries over the period 1970–2008, to assess the links between economic growth, total factor productivity and government debt. They conclude that there is a general negative effect of government debt on growth. In particular, for the subsample including OECD countries, there is evidence that the average growth rates of the countries with low debt to GDP ratios (lower than 30%) are similar to those of countries with high debt ratios (higher than 90%).

The result is inconsistent with Cohen (1993) who studied low investment and less developed countries (LDC) debt in the 1980s. He estimated the investment equation of 81 developing countries using ordinary least square method for three different periods: 1965-1973, 1974-1981 and 1982-1987. The result showed that the level of debt cannot explain the decrease in investment in the highly rescheduling countries. Again, he further reported that external debt did not affect the GNP growth rate of the 81 countries.

Results of the control variables in the model assessing the relationship between external debt and economic growth in SSA countries

The control variables in Table 5, model 1 shows the relationship between secondary school enrollment, total natural resources and economic growth. The result shows that secondary school enrolment and total natural resources has a significant positive relationship with economic growth. It shows that at significant level of 1%, secondary school enrollment and total

50

natural resources has a significant positive relationship with economic growth. It shows that a unit increase in secondary school enrolment and gross capital formation leads to 0.336 and 0.033 increase in economic growth respectively in Sub-Saharan African countries.

Model 1 again indicates that gross capital formation has a significant positives relationship with economic growth. It shows that at a significant level of 5%, gross capital formation has a significant positive relationship with economic growth. The results shows that units increase in gross capital formation will lead to 0.048 increase in economic growth.

Table 5, model 1 also presents that, trade openness and population growth has a significant negative relationship with economic growth. It shows that at a significant level of 1%, trade openness and population growth has a significant negative relationship with economic growth. The results shows that a unit increase trade openness and population growth will lead to 0.272 and 0.18 decrease in economic growth. Model 1 shows an insignificant relationship between inflation rate and economic growth.

Country-level Governance and Economic Growth

Under this section, the regression results for the relationship between country-level governance and economic growth is being discussed.

The results in Model 2 of Table 5 show that, the coefficient of the composite of country level governance is insignificant. The result shows that country level governance in Sub-Saharan Africa is not strong enough and therefore in isolation may not really matter in enhancing economic growth in Sub-Saharan African countries..

Model 3, 4, 5, 6,7 and 8 in Table 5 further explains the effect of each of the governance indicators thus control of corruption, government effectiveness, political stability and absence of violence/tourism, regulatory quality, rule of law and voice and accountability on economic growth to see how each of the indexes affects economic growth. Table 5, Model 2 presents the relationship between country level governance and economic growth for the 38 sampled Sub-Saharan African countries used in the study. The results show that, the coefficients of the indicators are significant apart from the coefficient of control of corruption which is insignificant. Regulatory quality and rule of law have a negative significant coefficient whiles political stability and absence of violence, government effectiveness, voice and accountability has a positive significant coefficient.

This result is consistent with Alesina (1996) who found a negative effect of political instability on growth by demonstrating that institutional quality, as measured by bureaucratic efficiency, absence of corruption, protection of property rights, and the rule of law, is important for growth.

Furthermore, the results is consistent with Barro (1996) who argued that once the maintenance of the rule of law, free markets, small government consumption, human capital, and the initial level of real per capita GDP are held constant, the overall effect of democracy on growth is weakly negative.

The results is also inconsistent with Mauro (1995) who argued that subjective indexes of corruption are negatively linked with investment and economic growth but finds that corruption affects primarily the volume of investment rather than its efficiency. More specifically, high levels of corruption affect the quantity of investment by increasing the uncertainty and

instability in the economic environment. He also finds efficient bureaucracies and rule of law positively influence growth.

Results of the control variables in the model assessing the relationship between country-level governance and economic growth in SSA countries.

Table 5 presents the relationship between economic growth in Sub-Saharan African countries and the control variables that is, trade openness(TO), secondary school enrollment(SCHOOLX), inflation rate(INF), gross capital formation(GCFP), total natural resources(TNR) and population(POP). The results in model 2, 4,5,6,7 and 8 shows that, trade openness has a significant negative relationship with economic growth. It shoes that, at 1% significant level, trade openness has a significant negative relationship with economic growth. This indicates that, a unit increase in trade openness lead to 0.263, 0.269, 0.255, 0.288, 0.272, 0.236 and 0.222 decreases in economic growth respectively.

The results in Table 5 again indicate that, model, 2,3,4,5,6,7,8 signifies a significant positive relationship between secondary school enrolment and economic growth. The result shows that, at 1% significant level, secondary school enrollment has a significant positive relationship with economic growth. This indicates that, a unit increase in secondary school enrollment leads to 0.210, 0.214, 0. 189, 0.205, 0.229, 0.216 and 0.209 increase in economic growth respectively in Sub-Saharan Africa countries. This means that, increase in secondary school enrollment will help improve economic growth in Sub-Saharan African countries. Therefore countries in Sub-Saharan Africa should encourage secondary school enrollment in order to enhance economic growth.

Furthermore, Table 5, model, 2, 3, 4,6,7,8 shows that inflation rate has a significant positive relationship with economic growth. Model 6 shows that at 1% significant level, inflation rate has a significant positive relationship with economic growth. This indicates that a percentage increase in inflation rate will lead to 0.011 increases in economic growth. Model 3 and 7 shows that at 5% significant level, inflation rate has a significant positive relationship with economic growth respectively in Sub-Saharan African countries. This indicates that a percentage increase in inflation rate will lead to 0.006 and 0.007 increase in economic growth respectively in Sub-Saharan African countries. Model 2, 3 and 5 shows that at a significant level of 10%, inflation rate has a significant positive relationship with economic growth. This shows that a percentage increase in inflation rate will lead to 0.006, 0.006 and 0.006 increase in economic growth respectively in Sub-Saharan African countries. Model 5 shows an insignificant relationship between inflation rate and economic growth.

Table 5 also shows the relationship between economic growth and gross capital formation. The results in model 2,3,4,5 shows that at 1% significant level, gross capital formation has a significant positive relationship with economic growth. This shows that a percentage increase in gross capital formation will lead to 0.057,0.061, 0.064, and 0.064 increase in economic growth respectively in Sub-Saharan African countries. Model 6 shows that at a significant level of 5%, gross capital formation has significant positive relationship with economic growth. It shows that a percentage increase in gross capital formation leads to 0.059 increase in economic growth. Model 7 shows that at a significant level of 1%, gross capital formation has a

significant positive relationship with economic growth. This shoes that a percentage increase in gross capital formation will lead to 0.036 increase in economic growth. This shows that, increase in gross capital formation enhances economic growth.

Table 5, model 2, 3, 4, 5, 6, 7, 8 shows that at a significant level of 1% total natural resources has a significant positive relationship with economic growth. This indicates that a unit increase in total natural resources leads to 0.056, 0.057, 0.053, 0.061, 0.055, 0.044 and 0.057 increase in economic growth respectively in Sub-Saharan African countries. This shows that total natural resources actually boost economic growth in Sub-Saharan African countries. Therefore Sub-Saharan African countries need to give particular attention to its natural resources.

Table 5 again presents the relationship between population and economic growth. Model 2,3, 4,5,6,7,8 shows that, population growth has a significant negative relationship with economic growth. Mode 2, 4, 6, 7, 8 shows that at a significant level of 1%, population growth has a significant negative relationship with economic growth. This shows that a percentage increase in population growth will lead to 0.106, 0.109, 0.108, 0.127, 0.118 decrease in economic growth in Sub-Saharan Africa. This indicates that as population growth in Sub-Saharan African countries increases, economic growth decreases. It shows that a country with low population has high economic growth than countries with high population growth in Sub- Saharan African countries.

Diagnostics test on the models assessing relationship between external debt and economic growth and the relationship between country-level governance and economic growth in SSA countries.

The results in Table 3 indicate that, p-values of AR (1) of all the models reject the null hypothesis of no autocorrelation at 5% significance level. The null hypothesis of no autocorrelation was failed to be rejected by the p-values of AR (2) of all the models in Table 3. The results of the AR (1) and AR (2) p-values show the nonexistence of autocorrelation in all the models. Moreover, the null hypothesis that states that, the coefficient of all the independent variables are simultaneously zero was rejected by the p-values of the Wald test. The rejection of the null hypothesis by the Wald test shows that, all the independent variables describes the dependent variable effectively. The p-values of the sargan test failed to reject the null hypothesis that states; the groups of instruments are exogenous. The hypothesis illustrates that, the instruments used in all the models are acceptable.

Moderating effect of country-level governance in the relationship between external debt and economic growth.

The subsection presents the results on the moderating role of country level governance in the relationship between external debt and economic growth into Sub-Saharan African countries. Model 1 in Table 6 shows the effect of the moderating variable in the relationship between external debt and economic growth into Sub- Saharan African countries.

The introduction of the interaction term between external debt and country-level governance as shown in model 1 results explains a motivating phenomenon. First, the coefficient of external debt decreases to -0.1588 as

56

compared to the first model -0.2288. Also the interaction term had a positive coefficient of 0.0887 which is significant at 1%. External debt is significant at 1% and coefficient of -0.1588 whilst the interaction term had a coefficient of 0.0887. This means that the presence of good governance influences external debt and leads to its reduction. It also positively influences the growth performance of Sub-Saharan African countries.

The result shows that the interaction term between external debt and country-level governance has a significant positive effect in the relationship between external debt and growth in Sub-Saharan African countries. This indicates that the moderating variable gives support to the relationship between external debt and economic growth. This means that country level governance indicators influences growth performance in Sub-Saharan African countries through the effective use of external debt.

With respect to country level governance, the results suggest a negative effect of governance on economic growth. This is as a result shows how governance structures affect growth in sub-Saharan Africa. However, the interaction term between external debt and institutions causes a reduction in the in the adverse effect of external debt and economic growth.

The interaction term is positive and significant. This means although country level governance structures in Sub-Saharan Africa may not be strong enough to enhance economic growth, but it will lessen the misuse of external debt so that it will be channeled productively into economic growth.

The results is consistent with the findings of This results is in consistent with Presbitero (2008) who investigates the relationship between external debt and economic growth, focusing on the role played by the policy

57

and institutional framework for a panel of 114 developing countries. His results show that the debt growth nexus depends on institutions and policies. They found out that the connection between debt and growth is determined by institutional quality and only countries with good institutions are expected to experience strong debt relief.

Also the result is also consistent with Jalles (2011) who conducted a study on the impact of democracy and corruption on the debt-growth relationship in developing countries. He found out that, corruption and weak governance, specifically affect the debt-growth relationship in these countries. His results indicated that in countries with lower levels of corruption have both positive and negative effects of debt on growth when modeled with a non-linear debt specification and are significant. Moreover, he recorded negative effect of debt on growth as significant in countries with higher levels of corruption.

The study showed additional tests following the results in model 1, Table 6 to assess the moderating role of the individual country-level governance indicators; control of corruption, regulatory quality, political stability, rule of law, voice and accountability and government effectiveness play on the relationship between external debt and economic growth. Models 2, 3, 4, 5, 6 and 7, Table 6 are the additional test conducted.

Model 2 demonstrates moderating effect of control of corruption in the relationship between external debt and economic growth (dependent variable) in Sub-Saharan African countries. The model evaluates whether control of corruption support the relationship between external debt and economic growth in Sub-Saharan African countries. Model 2 in table 6 shows that, after

the introduction of the interaction term between external debt and control of corruption, external debt variable obtains a coefficient of -0.1756 as compared to a coefficient of -0.2288 in Table 5 model 1. Furthermore, the coefficient of external debt is significant at 1%. The interaction term between external debt and control of corruption had a positive coefficient of 0.0411 and its significant at 5% this means that control of corruption gives support to enhance the utilization of external debt to boost economic growth in Sub-Saharan African countries.

Model 3 demonstrates moderating effect of regulatory quality in the relationship between external debt and economic growth (dependent variable) in Sub-Saharan African countries. The model assesses whether regulatory quality support the relationship between external debt and economic growth in Sub-Saharan African countries. Model 3 in Table 6 shows that, the introduction of the interaction term between external debt and regulatory quality, gives external debt variable a coefficient of -0.1575 as compared to a coefficient of -0.2288 in Table 5 model 1. Also, the coefficient of external debt is significant at 1%. The interaction term between external debt and regulatory quality had a positive coefficient of 0.0739 and it's significant at 1% .the results implies that the moderating variable improves economic growth. The results indicate that regulatory quality aids to increase economic growth.

Model 4 presents moderating effect of voice and accountability in the relationship between external debt and economic growth (dependent variable) in Sub-Saharan African countries. The model evaluates whether voice and accountability improves the relationship between external debt and economic

growth in Sub-Saharan African countries. Model 4 in Table 6 shows that, the introduction of the interaction term between external debt and voice and accountability makes external debt variable significant at 1% with a coefficient of -0.1756 as compared to a coefficient of -0.2288 in table 5 model 1. The interaction term between external debt and voice and accountability had a positive coefficient of 0.0497 and it's significant at 5% .the results imply that the moderating variable improves economic growth. The result shows that voice and accountability assist to promote economic growth. It explains that if there is a sense of collective obligation and commitment among citizens in relation to the welfare of a country, there will be effective use and accountability of external debt which will enhance economic growth in Sub-Saharan Africa countries.

Model 5 presents moderating effect of rule of law in the relationship between external debt and economic growth (dependent variable) in Sub-Saharan African countries. The model evaluates how rule of law affects the relationship between external debt and economic growth in Sub-Saharan African countries. Model 5 in Table 6 shows that, the introduction of the interaction term between external debt and rule of law makes external debt variable significant at 1% with a coefficient of -0.1528 as compared to a coefficient of -0.2288 in table 3 model 1. The interaction term between external debt and rule of law had a positive coefficient of 0.0955 and it's significant at 1% .The results imply that the moderating variable improves economic growth. The results show that rule of law aids in the efficient usage of external debt to increase economic growth.

Model 6 presents moderating effect of political stability and absence of violence/terrorism in the relationship between external debt and economic growth (dependent variable) in Sub-Saharan African countries. The model evaluates how political stability and absence of violence/terrorism influence the relationship between external debt and economic growth in Sub-Saharan African countries. Model 6 in Table 6 shows that, the introduction of the interaction term between external debt and political stability and absence of violence/terrorism makes external debt variable significant at 1% with a coefficient of -0.1693 as compared to a coefficient of -0.2288 in table 3 model 1. The interaction term between external debt and political stability and absence of violence/terrorism had a positive coefficient of 0.0667 and it's significant at 1% .The results imply that the moderating variable improves economic growth. The result shows that political stability and absence of violence/terrorism contribute the use of external debt to foster economic growth. It shows that without violence and terrorism, external debt can be channeled directly into productive activities to boost economic growth in Sub-Saharan African countries.

Model 7 presents moderating effect of government effectiveness in the relationship between external debt and economic growth (dependent variable) in Sub-Saharan African countries. The model evaluates how government effectiveness affects the relationship between external debt and economic growth in Sub-Saharan African countries. Model 7 in Table 6 shows that, the introduction of the interaction term between external debt and government effectiveness makes external debt variable significant at 1% with a coefficient of -0.1779 as compared to a coefficient of -0.2288 in table 3 model 1. The

interaction term between external debt and government effectiveness had a positive coefficient of 0.0504 and it's significant at 1% .The results imply that the moderating variable has a positive effect on economic growth. The result shows that external debt coupled with government effectiveness will help to enhance economic growth.

The result is consistent with Presbitero (2008) who studied the extent to which external debt affect economic growth, focusing on the role played by the policy and institutional framework. The found that, the debt growth nexus depends on institutions and policies. The result is also consistent with Asghar, Awan and Rehman (2012) who studied the impact of governance on external debt burden in Pakistan. They found that that political stability may help to forecast burden of external debt whereas voice and accountability (VA) appears to be an insignificant variable. Sustained efforts on political, economic and institutional fronts can help the economy to overcome the problems which have emerged because of high burden of external debt. The further reported that political instability appeared to be one of the major determinants which deters the process of economic growth in the country and is also responsible for huge burden of external debt. Political instability negatively and significantly affects the external debt accumulation.

Furthermore, the result is consistent with the study on Foreign aid, external debt and economic growth Nexus in low-income countries: The Role of Institutional Quality conduct by Qayyum and Haider (2009). They found that, good governance and foreign aid affect the economic growth positively while that of external debt has a negative impact. The results is consistent with Jalles (2011) who found that in countries with lower levels of corruption there

is both positive and negative effects of debt on growth when modeled with a non-linear debt specification and the results are significant. Moreover they recorded negative effect of debt on growth as significant in countries with higher levels of corruption.

The results is inconsistent with Alesina (1996) who found a negative effect of political instability on growth by demonstrating that institutional quality, as measured by bureaucratic efficiency, absence of corruption, protection of property rights, and the rule of law, is important for growth.

Table 6 : The moderating role of country-level governance in the relationship between external debt and economic growth.

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
lnGDPPC (-1)	0.490***	0.506***	0.495***	0.505***	0.499***	0.485***	0.504***
	[0.019]	[0.227]	[0.016]	[0.029]	[0.022]	[0.021]	[0.012]
LnEDGNI	-0.159***	-0.178***	-0.158***	-0.176***	-0.153***	-0.170***	-0.178***
	[0.009]	[0.012]	[0.008]	[0.011]	[0.010]	[0.007]	[0.010]
GOV	-0.357***						
	[0.062]						
COC		-0.105					
		[0.080]					
RQ			-0.404***				
			[0.038]				
VA				-0.020*			
				[0.085]			
ROL					-0.031***		
					[0.059]		
PSAVT						-0.300***	
						[-0.028]	
W							-0.097**
							[0.042]
Interaction	0.089***	0.041**	0.074***	0.050**	0.096***	0.067***	0.050***
	[0.016]	[0.019]	[0.010]	[0.021]	[0.012]	[0.007]	[0.006]
lnTO	-0.287***	-0.280***	-0.259***	-0.264***	-0.255***	-0.264***	-0.289***
	[0.040]	[0.041]	[0.041]	[0.045]	[0.048]	[0.037]	[0.041]
lnSCHOOLX	0.203***	0.201***	0.217***	0.201***	0.018***	0.177***	0.195***
	[0.018]	[0.203]	[0.019]	[0.016]	[0.016]	[0.014]	[0.023]
lnINF	0.0065	0.0058*	0.0046	0.0045	0.0094**	0.0076*	0.008*
	[0.004]	[0.003]	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]
lnGCFP	0.0575***	0.0561**	0.0623***	0.0474**	0.0504**	0.0392**	0.0486*
	[0.196]	[0.023]	[0.024]	[0.023]	[0.022]	[0.018]	[0.026]

63

lnTNR	0.071***	0.056***	0.069***	0.056***	0.059***	0.074***	0.060***
	[0.015]	[0.018]	[0.016]	[0.018]	[0.018]	[0.017]	[0.021]
			-0.096***	-0.085**	-0.082**	-0.064*	-0.082**
			[0.035]	[0.036]	[0.038]	[0.038]	[0.039]

Table 2, continued

Diagnostics							
Wald chi2(10)	167571.8	156341.8	305700.3	7.10E+06	1.18E+06	1.00E+07	3.03E+05
Prob > chic	0	0	0	0	0	0	0
AR(1):Z	-1.9141	-1.6852	-1.9105	-1.9317	-2.0124	-1.9904	-1.8025
(P-Value)	0.0556	0.0919	0.0561	0.0534	0.0442	0.0465	0.0715
AR(2):Z	-1.7872	-1.4589	-1.5529	-1.4891	-1.8427	-2.4064	-1.5167
(P-Value)	0.0739	0.1446	0.1204	0.4378	0.0654	0.0161	0.1294
Sargan Chi2	28.9082	27.5786	26.9837	27.4871	26.2118	28.1979	27.2332
Prob>Sargan Chi2	0.0365	0.4329	0.1204	0.4378	0.5069	0.4008	0.4513
No.of Obervations	227	227	227	227	227	227	227

Source: Authors Construct, Asante (2019).
Note: lnGDPPC(-1) is the first lag of the log of Economic Growth, lnEDGNI refers to log of External Debt,GOV refers to Country-Level Governance , COC is Control of Corruption, W is Government Effectiveness , PSAV is Political Stability and Absence of Violence, RQ is Regulatory Quality, ROL is Rule of Law, and VA is Voice and Accountability (VA). TO represents Trade Openness. SCHOOLX represents log of Secondary Scholl Enrollment (% of GDP). lnGCFP represents the log of Gross Capital Formation (% of GDP). lnTNR represents the log of Total Natural Resources (% of GDP). lnPOP represents the log of population Growth. lnINF represents the log of Inflation. Interaction represents the interaction of Trade Openness and Institutional Quality variables. Apart from the diagnostics section, all values in bracket are the standard errors of the coefficients values and values other than those in bracket represent the coefficient values; *** represents significant at 1%, **represents significant at 5%, * represents significant at 10%. The diagnostics section presents the values of the wald test, probability values of the Wald test, z values of AR(1), probability of z values of AR(1), , z values of AR(1), probability of z values of AR(1), probability of the Sargan test and the number of observations in order as shown in diagnostics section of table 6.

Results of control variables in the model assessing the moderating role of country-level governance in the relationship between external debt and economic growth in SSA countries.

The study evaluated the relationship between several microeconomic indicators and the dependent variable, that is, economic growth in Sub-Saharan African countries. Table 6 shows the results of the relationship between economic growth into Sub-Saharan African countries and the control variables, that is, trade openness(TO), secondary school enrollment (SCHOOLX), inflation rate(INF), gross capital formation(GCFP), total natural

resources(TNR) and population(POP). Model 1 in table shows the effect of external debt on economic growth. Model 1,2,3,4,5,6,7 shows that at a 1% significant level, trade openness has a significant negative relationship with economic growth in Sub-Saharan African countries. The results shows that a unit increases in trade openness will lead to 0.287, 0.280, 0.259, 0.264, 0.255, 0.264 and 0.289 decrease in economic growth respectively in Sub-Saharan African countries. The results shows that a unit increase in trade openness will lead to 0.287, 0.280, 0.259, 0.264, 0.255, 0.264 and 0.289 decrease in economic growth respectively in Sub-Saharan African countries and vice versa.

Also, model 1, 2,3,4,5,6,7 shows that at a significant level of 1% secondary school enrollment has a positive significant effect on economic growth. This shows an increase in secondary school enrollment leads to an increase in economic growth in Sub-Saharan African countries.

Table 6, model 2, 6 and 7 shows that at 10% significant level, inflation rate has significant positive relationship with economic growth. It shows that at a unit increase in inflation rate leads to 0.006, 0.008 and0.008 increases in economic growth respectively in Sub-Saharan African countries. Model 5 shows that at 5% significant level, inflation rate shows a significant positive relationship with economic growth. It shows that a unit increase in inflation rate leads to 0.009 increase in economic growth in Sub-Saharan countries. This means that countries with low inflation rate in Sub-Saharan Africa can boost its economic growth steadily. Model 1, 3 and 5 shows no significant relationship between inflation rate and economic growth in Sub-Saharan African countries.

Table 5 again shows the relationship between gross capita formation and economic growth. Model 1 2, 3, 4, 5, 6, 7 shows a significant positive relationship between gross capital formation and economic growth in Sub-Saharan African countries. Model 1 and 3 shows that at a significant level of 1%, gross capital formation has a significant positive relationship with economic growth. Model 3, 4, 5, 6, shows that at 5% significant level, gross capital formation has a significant positive relationship with economic growth. Model 7 shows that at 10% significant level, gross capital formation has a significant positive relationship with economic growth. This means that a unit increase in gross capital formation will lead to increase in economic growth which means that countries with high gross capital formation will experience high economic growth.

Moreover, Table 5 once again shows the relationship between total natural resources and economic growth. Model 1,2,3,4,5,6,7 shows that at total natural resources has a significant positive relationship with economic growth. Model 1,2,3,4,5,6,7 shows that at 1% significant level, total natural resources have a 0.071, 0.056, 0.069, 0.056, 0.074, and 0,060 significant positive relationships with economic growth. This indicates that a unit increase in total natural resources will cause 0.071, 0.056, 0.069, 0.056, 0.074, and 0,060 increases in economic growth in Sub-Saharan African countries. This shows that, total natural resources positively affect economic growth in Sub-Saharan Africa. Therefore Sub-Saharan African countries need to protect and increase its total natural resources to boost economic growth.

Additionally, Table 6 presents the relationship between population growth and economic growth. Model 3, 4, 5, 6, 7 shows a significant negative

relationship with economic growth. Model 3 shows that, at 1% significant level, population growth has a significant negative relationship with economic growth. Model 4, 5 and 7 shows that at 5% significant level, population growth has a significant negative relationship with economic growth. Model 2 shows that at 10% significant level, population growth has a significant negative relationship with economic growth. The results shows that a % increases in population growth decrease economic growth in Sub-Saharan Africa.

Diagnostics test on models assessing the moderating role of country-level governance in the relationship between external debt and economic growth in SSA countries.

The results in table 6 indicate that, p-values of AR (1) of all the models reject the null hypothesis of no autocorrelation at 5% significance level. The null hypothesis of no autocorrelation was failed to be rejected by the p-values of AR (2) of all the models in Table 6. The results of the AR (1) and AR (2) p-values shows the nonexistence of autocorrelation in all the models. Moreover, the null hypothesis that states that, the coefficient of all the independent variables are simultaneously zero was rejected by the p-values of the Wald test. The rejection of the null hypothesis by the Wald test shows that, all the independent variables describes the dependent variable effectively. The p-values of the sargan test failed to reject the null hypothesis that states; the groups of instruments are exogenous. The hypothesis illustrates that, the instruments used in all the models are acceptable.

Lag of Economic Growth

The existing study argue that, previous years' economic growth given by GDPPC (-1) has the propensity of influencing economic growth in the

67

present year. Models 1, 2, 3, 4, 5, 6, 7 and 8 of Table 5 indicates that GDPPC (-1) has a significant positive relationship with economic growth. The models show that, a percentage increase in the lag of foreign direct investment inflows, GDPPC (-1) leads to a 44%, 51%, 51%, 53%, 50%, 52%, 53%, and 56% increase respectively in economic growth in Sub-Saharan African countries. This implies that a level of economic growth in Sub-Saharan African countries within a particular year has a positive effect on the levels of economic growth in the succeeding years.

Table 6 also recorded the results for the lag of economic growth in Sub-Saharan African countries. From the Table, models 1, 2, 3, 4, 5, 6 and 7 showed that GDPPC (-1) has a significant positive relationship with economic growth into Sub-Saharan African countries. The results shows that a percentage increase in economic growth in the previous year leads to a , 49% 51%, 50%, 50%, 50%, 49%, 50% increase respectively in the current or succeeding year's economic growth.

Robustness Check

The main objective of the study was to study evaluate the moderating role of country-level governance in the relationship between external and economic growth in Sub-Saharan African countries. The study employed the panel dynamic generalized method of moments (GMM). The study employed other estimation technique to evaluate the robustness of the results obtained because the results attained in the study could be misleading. The study employed another proxy (GDP) for the independent variable (economic growth). As in the study of David-Wayas (2014), he used GDP as a measure of economic growth. The results obtained from employing GDP as a measure

of economic growth is presented in appendix B. After employing another measure for the dependent variable (economic growth), the results were similar to the main results in the study.

As compared to the results in Table 5, model 1, the result in appendix B, model 1 shows that external debt has a significant relationship with economic growth. This shows that a percentage increase in external debt will lead to 0.2408% decrease in economic growth.

As compared to Table 6, model 1, the results in appendix B, model 2 also shows that external debt is significant at 1% and coefficient of -0.1631 whilst the interaction term had a coefficient of 0.0821 and it is significant at 1%. As compared to Model 2 in Table 6, appendix B, model 3 indicates that, after the introduction of the interaction term between external debt and control of corruption, external debt variable obtains a coefficient of -0.1712 in comparism with the coefficient of -0.2408 in appendix B, model 1. Furthermore, the coefficient of external debt is significant at 1%. The interaction term between external debt and control of corruption had a significant coefficient of 0.0605. In contract to Model 3 in Table 4, appendix B, model 4 shows that, the introduction of the interaction term between external debt and regulatory quality, gives external debt variable a coefficient of -0.1648 as compared to a coefficient of -0.2408 in table 3 model 1. Also, the coefficient of external debt is significant at 1%. The interaction term between external debt and regulatory quality is significant at 1% and a coefficient of 0.0582.

In comparison with model 4 in Table 6, the results in appendix B, model 5 shows that, the introduction of the interaction term between external

69

debt and voice and accountability makes external debt variable significant at 1% with a coefficient of -0.1725 as compared to a coefficient of -0.2408 in Table 4 model 1. The interaction term between external debt and voice and accountability had a significant coefficient of 0.0415. As compared to model 5 in table 4, appendix B model 6 shows that, the introduction of the interaction term between external debt and rule of law makes external debt variable significant at 1% with a coefficient of -0.1631 as compared to a coefficient of -0.2408 in table 3 model 1. The interaction term between external debt and rule of law had a positive coefficient of 0.0838 and it's significant at 1%.

Moreover, as compared to model 6 in table 4 as compared to appendix C shows that, the introduction of the interaction term between external debt and political stability and absence of violence/terrorism makes external debt variable significant at 1% with a coefficient of -0.1746 as compared to a coefficient of -0.2408 in table 6 model 1. The interaction term between external debt and political stability and absence of violence/terrorism had a positive coefficient of 0.0663 and it's significant at 1%.

Furthermore, in comparison with model 7 in Table 6 shows that, the introduction of the interaction term between external debt and government effectiveness makes external debt variable significant at 1% with a coefficient of -0.1771 as compared to a coefficient of -0.2408 in Table 5 model 1. The interaction term between external debt and government effectiveness had a positive coefficient of 0.0465 and it's significant at 1%.

Therefore, the study concludes that there is a significant relationship between external debt and economic growth in Sub-Saharan African countries. Additionally, the study concludes that country-level governance moderates the

relationship between external debt and economic growth in Sub-Saharan African countries.

Chapter Summary

The study assessed the role if country-level governance in the relationship between external debt and economic growth in Sub-Saharan African countries. The study was conducted for the period 1996 to 2016. The three (3) hypothesis were tested using dynamic panel system general methods of moments (GMM). The study assessed the relationship between external debt and economic growth in Sub-Saharan Africa countries as presented in table 5, model 1. The results in the study established that external debt has a significant negative relationship with economic growth in Sub-Saharan African countries.

Moreover, the study examined the relationship between country-level governance and economic growth in Sub-Saharan African countries. The results show that the aggregate of country-level governance in isolation may not really for economic growth but all of the individual governance indicators are significant except corruption. Government effectiveness, political stability and lack of violence/tourism and voice and accountability has a significant positive relationship with economic growth. Regulatory quality and rule of law has a significant negative relationship with economic growth.

Furthermore, the study examined the role of country-level governance on the relationship between external debt and economic growth. The outcomes of the study showed that country-level governance provides support to external debt to influence the level of economic growth in Sub-Saharan African countries. The study showed that, the individual governance indicators

71

that is, control of corruption, regulatory quality, political stability and absence of violence/tourism, rule of law, government effectiveness and voice and accountability provides support to influence the use of external debt to boost economic growth in Sub-Saharan African countries. The study concluded that country-level governance moderates the use external debt to increase economic growth in Sub-Saharan African countries.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the major findings obtained from conducting the entire study. The chapter also presents a summary of the findings, conclusions, recommendations as well as the suggestions for further research.

Summary of the Research

Economic growth in Sub-Saharan Africa over the years has being perceived as substandard as compared to other regions in spite of the fact that Sub-Saharan African countries can also boost its economic growth with the necessary measures. Notwithstanding according to literature, a number of factors can help increase economic growth in Sub-Saharan Africa.

The study looked at the role played by country-level governance in the relationship between external debt and economic growth in Sub-Saharan African countries. Sub-Saharan African countries' economic growth remains low despite the high level of external debt in the region. This is due to the non-utilization of external debt for its purpose. Literature review looked the elucidation of theory supporting the study and empirical literature with regard to the relationship between country-level governance and economic growth in Sub-Saharan African countries. The study employed the new growth theory. The review of empirical literature showed that there is vagueness in the findings of the relationship between external debt and economic growth in Sub-Saharan African countries.

The study employed quantitative and causal research design. The study employed secondary data for 38 Sub-Saharan African countries because of availability of data. The study developed one standard model. The model defined the role of country-level governance in the relationship between external debt and economic growth, the relationship between external debt and economic growth and the relationship between country-level governance and economic growth. The study employed dynamic Generalized Method of Moment as estimation technique for the model.

Summary of Findings

The findings of the study gives profound and notable results which will help Sub-Saharan African countries improve its economic growth. The study focused on three on three objectives. The first objective was to determine the effect of external debt on economic growth in Sun-Saharan Africa. The second objective was to examine the effect of country-level governance on economic growth. The third objective was to test the moderating role of country-level governance in the relationship between external debt and economic growth.

- The study rejected the first hypothesis which states that there is no significant effect of external debt on economic growth. The study signifies that external debt negatively affects economic growth in Sub-Saharan African countries.

- The study failed to reject the second hypothesis which states that country-level governance affects economic growth. This indicates that, country-level governance in isolation does not have an effect on economic growth in Sub-Saharan African countries.

- The study also rejected the third hypothesis which states that there is no moderating effect of country-level governance in the relationship between external debt and economic growth in Sub-Saharan African countries. The study showed that, external debt reduced after the introduction of the interaction term between country-level governance between country-level governance and external debt whiles economic growth increased as well. This means that when country-level governance is taken into consideration in the utilization of external debt, it will cause an increase in economic growth in Sub-Saharan African countries.

Conclusions

The study examined the role of country-level governance in the relationship between external debt and economic growth. There have been several studies (Fiagbe, 2015; Fosu 1999) on assessing the relationship between external debt and economic growth. There is paucity nevertheless, on studies about the role of country-level governance in the relationship between external debt and economic growth. By detecting this fissure, the study relatively aimed to fill the gap in research by examining the role of country-level governance in the relationship between external debt and economic growth. The study used 39 countries in Sub-Saharan Africa for the period covering 1996 to 2016 respectively.

The findings of the study exhibited a number of sensitive, profound and incisive inferences.

- The study established that, external debt affect the enhancement of economic growth in Sub-Saharan African countries. The study found

that external debt in SSA countries is not channeled into income generating activities and developmental projects.

- The study again concluded that country-level governance need to be strengthened in Sub-Saharan African countries in order to have a significant effect on economic growth. The study found that an upswing of country level governance will influence the use of external debt to boost economic growth in Sub-Saharan African countries.

- The study further concluded that country-level governance structures enhance the use of external debt to boost economic growth in Sub-Saharan Africa. However, in order to strengthen the utilization of external debt in Sub-Saharan Africa, there should be a momentous change in the implementation of country-level governance in the region.

Recommendations

The study proposes certain recommendations that emanate from the findings and conclusions derived from the study. The purpose of the recommendations is to strengthen country-level governance structures to reinforce the utilization of external debt with the aim of fostering economic growth in Sub-Saharan African countries.

- The study recommends that, there should proper checks on the utilization of external debt. External debt should be channeled to the right purposes.

- The study established that, the intensity of country-level governance will impact the use of external debt for its equitable purposes in Sub-Saharan African countries.

76

- Policy makers should support and encourage the enhancement and implementation of country-level governance in Sub-Saharan African countries in order to enhance the utilization of external debt to increase economic growth.

Suggestions for Further Research

The areas of this study are thought-provoking and gripping which needs further studies. Other studies can focus on analyzing the role of country-level governance in the individual Sub-Saharan African countries as compared to the existing study. Thus each of the sub-Saharan African countries can be considered. Nevertheless, other studies can also research on the relationship between domestic debt and economic growth as well as domestic debt and country-level governance in the individual Sub-Saharan African countries.

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APPENDICES

A: A list of sample of 38 SSA economies and their Sub Regions

Burundi	Republic of Congo
Comoros	Benin
Kenya	Burkina Faso
Madagascar	Cote D'ivoire
Malawi	Gambia
Mauritius	Ghana
Mozambique	Guinea-Bissau
Rwanda	Liberia
Gabon	Mali
Equatorial Guinea	Mauritania
Tanzania	Niger
Uganda	Senegal
Zambia	Sierra Leone
Zimbabwe	Togo
Cabo Verde	South Africa
Angola	Botswana
Cameroon	Swaziland
Central African Republic	Sierra Leone
Chad	
Democratic Republic of Congo	

B: The effect of external debt on economic growth in SSA and the moderating effect of country-level governance in the relationship between external debt and economic growth.

Dependent variable: Economic Growth (as a percent of GDP)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
LnGDP	0.5072***	0.5273***	0.5412***	0.5427***	0.5478***	0.5268***	0.5253***	0.541***
	[0.0202]	[0.0146]	[0.0211]	[0.017]	[0.0306]	[0.0235]	[0.0227]	[0.0139]
LnEDGNI	-0.2408***	-0.1631***	-0.1712***	-0.1648***	-0.1725***	-0.1631***	-0.1746***	-0.1771***
	[0.0082]	[0.007]	[0.0106]	[0.006]	[0.0093]	[0.0084]	[0.0078]	[0.01]
INST		-0.358***						
		[0.0462]						
COC			-0.1978***					
			[0.0548]					
RQ				-0.3601***				
				[0.0412]				
VA					0.0102			
					[0.0961]			
ROL						-0.2484***		
						[0.0643]		
PSAVT							-0.292***	
							[0.0298]	
W								-0.1041*
								[0.0568]
INTERACTION		0.0821***	0.0605***	0.0582***	0.0415*	0.0838***	0.0663***	0.0465***
		[0.0126]	[0.0116]	[0.014]	[0.0229]	[0.0158]	[0.008]	[0.01]
LnTO	-0.2494***	-0.2476***	-0.2493***	-0.2639***	-0.2637***	-0.2548***	-0.2446***	-0.2883***
	[0.0200]	[0.0462]	[0.049]	[0.0393]	[0.0388]	[0.0541]	[0.0347]	[0.0267]
LnSCHOOLX	0.3985***	0.3078***	0.311***	0.3218***	0.3092***	0.2974***	0.2873***	0.3067***
	[0.0356]	[0.0239]	[0.0193]	[0.0278]	[0.0266]	[0.0261]	[0.0293]	[0.0265]
LnINF	0.0029	0.0052	0.0059	0.0015	0.0038	0.0056	0.0066	0.0055
	[0.0026]	[0.0039]	[0.0039]	[0.0036]	[0.0042]	[0.0044]	[0.0045]	[0.0043]
LnGCFP	0.0674***	0.0504**	0.0552**	0.0701***	0.0399*	0.0583*	0.0438**	0.051**
	[0.0124]	[0.0233]	[0.0221]	[0.0208]	[0.0273]	[0.0295]	[0.0183]	[0.0245]
LnTNR	0.0310***	0.0618**	0.0486**	0.072***	0.0612***	0.0625***	0.061***	0.0655**
	[0.0105]	[0.0185]	[0.0215]	[0.0185]	[0.0186]	[0.0199]	[0.0187]	[0.0185]
LnPOP	-0.2299***	-0.1064**	-0.1057**	-0.1476***	-0.1197***	-0.1091**	-0.1028**	-0.1132**
	[0.0257]	[0.0462]	[0.0487]	[0.0452]	[0.0437]	[0.0456]	[0.0446]	[0.0473]

DIAGNOSTICS								
Wald Chi(10)	91458.08	135126	915467.3	78243.35	25861.57	137133.3	2.25E+06	277314.8
Prob>Chi2	0	0	0	0	0	0	0	0
AR(1):Z	-1.5782	-2.0272	-1.8353	-2.0568	-2.0628	-2.095	-2.279	-1.942
(P-Value)	0.1145	0.0426	0.0665	0.0397	0.0391	0.0362	0.0227	0.0521
AR(2):Z	-1.9563	-1.8554	-1.5051	-1.5061	-1.4708	-1.8376	-2.5342	-1.5421
(P-Value)	0.0504	0.0635	0.1323	0.132	0.1413	0.0661	0.0113	0.1231
Sargan Chi2	28.1962	26.581	26.4401	26.9941	26.9183	26.892	26.4635	26.6767
Prob>Sargan Chi2	0.8201	0.4866	0.4943	0.4641	0.4682	0.4696	0.493	0.4813
No. of Observations	298	227	227	227	227	227	227	227

Source: Authors Construct, Asante (2019).

Note: lnGDPPC(-1) is the first lag of the log of Economic Growth, lnEDGNI refers to log of External Debt,GOV refers to Country-Level Governance , COC is Control of Corruption, W is Government Effectiveness , PSAV is Political Stability and Absence of Violence, RQ is Regulatory Quality, ROL is Rule of Law, and VA is Voice and Accountability (VA). TO represents Trade Openness. SCHOOLX represents log of Secondary Scholl Enrollment (% of GDP). lnGCFP represents the log of Gross Capital Formation (% of GDP). lnTNR represents the log of Total Natural Resources (% of GDP). lnPOP represents the log of population Growth. lnINF represents the log of Inflation. Interaction represents the interaction of Trade Openness and Institutional Quality variables. Apart from the diagnostics section, all values in bracket are the standard errors of the coefficients values and values other than those in bracket represent the coefficient values; *** represents significant at 1%, **represents significant at 5%, * represents significant at 10%. The diagnostics section presents the values of the wald test, probability values of the Wald test, z values of AR(1), probability of z values of AR(1), , z values of AR(1), probability of z values of AR(1), probability of the Sargan test and the number of observations in order as shown in diagnostics section of table 6.