THE EFFECT OF GOVERNMENT SIZE, FOREIGN DIRECT INVESTMENT, ON ECONOMIC GROWTH IN SUB-SAHARAN AFRICA

BY

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JULY, 2019
DECLARATION

I, JOHN ABDULAI do hereby declare that this dissertation is based on my own research work under the supervision of my supervisor, Dr. Saint Kuttu. No part of this work has been submitted to this university or any other university for an academic award. All references used in this work are duly acknowledged.

JOHN ABDULAI

DATE
CERTIFICATION

I hereby certify that this dissertation was supervised according to the laid down procedures of the University of Ghana.

Dr. Saint Kuttu

(Supervisor)
DEDICATION

I dedicate my dissertation work to my family and many friends. A special feeling of gratitude to my loving wife, Mrs. Josephine Wusah whose words of encouragement and push for tenacity ring in my ears. My mother, Alice Atchulo and father, Buipe-wura Jinapor II who have never left my side and are very special.

I also dedicate this dissertation to my many friends and church family who have supported me throughout the process.
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<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>GMM</td>
<td>Generalized Method of Moment</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>OLS</td>
<td>Ordinary Least Squares</td>
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ABSTRACT

It has long been argued that a country cannot develop without government. However, researchers have diverse opinions with regards to the impact of government size on economic growth. While some researchers (Ahuja, 2013; Zareen & Qayyum, 2014) argue that large government size is most likely to enhance economic growth, other researchers (Armey, 1995; Vedder & Gallaway, 1998) believe that higher government expenditure has a tendency to harm economic growth. The third group of researchers believes that the full presence or total absence of government has its own consequences.

The contributions of Foreign Direct Investment (FDI) in an economy, especially, emerging economies cannot be overemphasised. As argued by some scholars (Odozi 1995; Makki & Somwura, 2004) FDI is a key driver of an economy. FDI is a significant source of development financing which contributes extensively to growth. The effect of government size and FDI on economic growth has, however, received less attention in sub-Saharan African (SSA) countries.

This study empirically explores the impact of government size and FDI on economic growth in SSA. Data for this study was sourced from World development indicators, for 42 SSA countries covering the period 2000-2016. The model for the study was estimated
using the panel regression techniques. The study considered unobserved country heterogeneity and corrected for heteroscedasticity and autocorrelation. The study found that government size and FDI both have a positive significant effect on the economic growth of SSA countries. The study, therefore, recommends that governments of SSA countries invest significantly in infrastructure, health and education to increase its spending and consequently attract FDI to spur economic growth.
CHAPTER ONE

INTRODUCTION

1.0 Background to the study

It has long been argued that no economy has ever prospered without government; the absence of government brings about disorder and inefficiency. The absence of government reduces the level of economic activities and eventually reduces total economic output. Despite the fact that the presence of government is not a sufficient condition, it is a necessary condition of prosperity (Vedder & Gallaway, 1998). However, in instances where the government exerts monopoly power in economic decisions and resource allocation, economic prosperity is slowed (Vedder & Gallaway, 1998). An economy does not make progress in the total absence and full presence of government (Ram, 1986; Armey, 1995; Vedder & Gallaway, 1998; Chen, Yang & Jiang, 2005). This is to say that even though the presence of government is necessary to help in the allocation of resources and decision making, the full presence of government will lead to the misallocation of resources (Chen et al., 2005). This emphasises the assertion made by Vedder & Gallaway (1998) that too much government suffocates the spirit of enterprise and reduces the economic growth rate.

There are differences in opinions among researchers with regards, to how government size affects economic growth. Researchers that subscribe to the Keynesians view believe that large government size is most likely to enhance economic growth. Thus increasing demand for both private and public goods and services that enhances the production of goods and services is linked to a high level of government consumption (Ahuja, 2013;
Zareen & Qayyum, 2014). The role of government is key in eliminating conflicts of interest between the public and private sector because it has the power to control and address negative externalities.

The assertion that higher government expenditure has tendencies to harm economic growth is hinged on the observed cases of inefficiencies associated with government institutions. Economic theory uses the “crowding-out” effect to explain how the presence of government gradually drives out the private sector, leading to a decline in private investments and ultimately retards growth due to a decline in the rates of capital accumulation. With the view of the continual presence of the government, most people prefer to lend to the government as compared to the private sector. Hence, in the event where the government and the private sector compete for funds to enable expansion and growth, the private sector is least likely to have access to a wide pool of funds. In view of this, although the private sector is identified as effective in the allocation of limited resources, their inability to raise funds from the public may cause their performance and growth to be stalled. This notwithstanding, some researchers believe that the total absence and full presence of government is an economy has its own consequences. This argument is made on the basis of the Armey curve relationship which posits an inverted U curve relationship between government size and economic growth. Hence, it is believed that the presence of government promotes economic growth up to a certain point beyond which economic growth begins to decline (Armey, 1995; Vedder & Gallaway, 1998).

Government size and its impact on economic growth have also been argued out in a developed and developing country perspective. For developed countries, it is argued that
government size has an inverse relationship with GDP growth rate because of its perceived association with higher taxes and interest payment, and its ability to crowd out private investment. Given that higher government size is associated with higher spending, to finance the increased spending of government, it becomes necessary to generate a wider pool of revenue by imposing higher taxes on citizens. The upsurge in tax rates leads to a decline in economic activities and private investment that eventually affect economic growth rates negatively (Barro, 1990). In the case of developing countries, however, researchers have argued that government size positively impacts economic growth through its role in boosting private investment. Lin (1994), Vedder and Gallaway (1998) maintain that a significantly large government is likely to result in huge investments in economic infrastructure and technology.

The contributions of FDI to an economy, especially in emerging economies, cannot be overemphasised. Some scholars (Odozi 1995; Makki & Somwura, 2004) argued that FDI is a substantial booster in promoting the rates of economic growth in a given economy. Odozi (1995) opined that foreign investment, which involves the transfer of resources which include management and technology, capital, and marketing expertise, is the most crucial component of capital inflows. Odozi (1995) further argues that these resources mostly widen the production abilities of the recipient country. According to the World Bank, in 2006, world FDI inflows stood at US$1.1trillion whiles FDI inflows into emerging economies continue to increase at a significant rate. FDI is a significant source of development financing which contributes extensively to growth. This is done by increasing the gains of productivity through managerial skills, technology and also the increase in total investment in the recipient country.
1.1 Problem Statement

Sub-Saharan Africa (SSA) can be found in the south of the Sahara Desert in the African continent. It is made up of 48 countries with a population of over one billion. The countries differ specifically both in size and economic history. The region has a number of geographically small countries and some relatively large countries such as South Africa and Nigeria. The region has four sub-regional blocks namely South, West, East and Central Africa.

There has been both theoretical and empirical argument over the years on the apparent effect of government size on economic growth. Nonetheless, literature directed at investigating the effects of government size on economic growth in SSA remains sparse. Again, the studies that have attempted to investigate the said relationship in SSA have yielded inconclusive results. Researchers that subscribe to the constructs of Keynesian economists argue that improvements in aggregate demand could be triggered by a large government size, which may, in the long run, promote overall economic growth rates and other macroeconomic indicators. Quite contrary to this view, some researchers are of the view that economic sluggishness may be caused by significant increases in government spending.

Empirical literature provides diverse opinions and findings on the government size-economic growth nexus. True to the argument of Whajah, Kuttu & Bokpin (2019), no clear consensus exists among researchers on the nature of the relationship between government size and economic growth. While some researchers posit a positive
relationship between government size and economic growth (Muritala & Taiwo, 2001; Gupta, Clements, Baldacci, & Mulas-Granados, 2002), others establish that government size has a negative or no effect on economic growth (Kweku et al., 1999; Nketiah-Amponsah, 2009). Based on the aforementioned, there is a need for an investigation into the effect of government size on economic growth in SSA.

FDI has long been recognized as a key driver of economic growth in emerging economies. Private capital flow in the form of FDI was remarkable in the era of globalization in the 1990s. FDI from multinational firms serves as a major avenue for least developed countries to acquire more knowledge and adopt better technology that will lead to growth. Jalilian and Weiss (2002) studied the influence of FDI on the growth of ASEAN regional economy and concluded that FDI inflows lead to economic growth improvements. The macroeconomic policies of emerging economies are however key in attracting higher rates of FDI inflows from the developed economies.

Some studies on FDI and economic growth have focused on African as a whole and others on individual countries (Makki & Somwura, 2004; Alexiou & Tsaliki, 2007; Gui-Diby, 2014). SSA has, however, received less attention in terms of how FDI effects economic growth.

Against the backdrop of sparse literature on the relationship between government size and economic growth on one hand, and FDI and economic growth on the other, in addition the tendencies of higher government spending to promote an enabling environment that attracts FDI, this work investigates the relationship between
government size, FDI and economic growth in SSA and it’s disaggregating the effect on the sub-regions.

1.2 Research Objectives

The overarching aim of the study is to investigate the effect of government size and Foreign Direct Investment on the economic growth in Sub-Saharan Africa.

The specific aims of the study are:

1. To investigate the effect of government size on economic growth in Sub-Saharan Africa.
2. To examine the effect of government size on FDI inflows in Sub-Saharan Africa.
3. To examine the effect of FDI on economic growth in Sub-Saharan Africa.

1.3 Research Questions

Based on the foregoing, the following research questions arise:

1. What is the effect of government size on economic growth in Sub-Saharan Africa?
2. How does government size affect FDI inflows in Sub-Saharan Africa?
3. What is the extent of FDI impact on economic growth in Sub-Saharan Africa?
1.4 Significance of the Study

This study seeks to unearth the effects of government size and FDI on economic growth in SSA. It further investigates how FDI impacts on economic growth. The findings from this study will inform policymakers to effectively understand the dynamics of government size on economic growth in SSA. This will enable policymakers to enact growth-enhancing policies in their respective economies. The findings of this study will also inform policymakers on which sub-regions government size positively impact on economic growth. Thus, policymakers will be guided as to which sub-region they need to invest more of their limited resource into in order to boost economic growth in Sub-Saharan Africa.

Finally, the study will serve as a guide for further research as it adds up to the literature on economic growth, government size and FDI.
1.5 Limitations of the Study

The study is limited to SSA for three reasons. First, as noted earlier, the literature on government size and economic growth in SSA is scant. Also, finding from previous studies indicates that FDI impact on economic growth on SSA differs from other regions (see Asiedu, 2002). Finally, SSA differs significantly, in terms of structures (thus composition, policies and political ideas), from the rest of the world. In fact, many Most SSA policymakers believe that lessons from Latin America or East Asia are not applicable to SSA because of the varying economic environments and situations surrounding these regions. This study, therefore, focuses on SSA to bring greater credibility among SSA policymakers.

1.6 Organization of the Study

The study is structured into five (5) chapters. Chapter one details the background to the study, problem statement, research objectives, research questions, limitations as well as the significance of the study. Chapter two provides a comprehensive review of the literature. Specifically, it focuses on the theories of economic and the empirical findings of materials related to this subject. The third chapter presents the theoretical framework and methodology underpinning the study. It also outlines the approach or research design and data sources. Chapter four provides analysis of data and a discussion of the analyzed data whilst chapter five provides a summary, conclusion and recommendation of the study.
CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of theoretical and empirical literature in relation to the study. It highlights literature on FDI economic growth and government expenditure. It begins with the theoretical literature followed by empirical studies. Some sub-topics in the empirical literature includes FDI in SSA, FDI and economic growth as well as government expenditure.
2.1 Theoretical Review

The theorization of economic growth usually begins with Robert Solow’s neoclassical growth model (Solow 1956). The theory basically concentrates on diminishing marginal productivity of capital, constant returns to scale, the ability to substitute capital for labour and technological progress which is determined exogenously. Based on the aforementioned assumptions, short term economic growth is mostly driven by savings or investment. The contribution of technological progress to economic growth cannot be overlooked in the long run, however, this variable is exogenous and as such the model does not place much emphasis on it. Convergence in growth rate is predicted by the model, the theory postulates that poor nations will grow faster than their rich counterparts. Some theoretical (endogenous growth theories) studies have argued on the role of technological progress as a significant factor in the long term economic growth. These theories highlight the fact that the new accumulation factors such as innovation, knowledge and ideas will lead to economic growth (Grossman & Helpman, 1991; Barron, 1990; Lucas, 1988; Romer, 1986). The proponents of the endogenous model argue that there exist increasing returns to scale which means that convergence will never occur.

In the late 1950s, there was the development of the cumulative causation growth theory by Gunnar Myrdal (Myrdal 1956). The theory argued that economic growth of places is determined by initial conditions in a way and manner that is incremental and self-sustained (Myrdal, 1957; Kaldor, 1970). This then results in varying levels of inequalities among economies. In the event that market forces are left to operate on their own, the systems are most often in disequilibrium despite the fact that there is a trickling
down effect of growth rate improvements from more advanced economies to less advanced economies. This means that economic policies are required to help bridge the economic gaps and bring balance.

The cumulative causation theories are perceived to be medium term in nature. They are therefore deficient in advance mathematical specification and hence are usually known as soft growth theories. There are however some similarities between the endogenous growth theories and the cumulative causation theories.

Krugman, (1991) argued that economic growth is an unbalanced process that favors the economies with the initial advantage, that is the New Economic Geography (NEG). This NEG is similar to the cumulative causation theory. Nonetheless, the literature on the NEG attempts to model and describe a formalized economic system characterized by zero transportation cost, the existence of market power and non-decreasing returns to scale.

The theory is premised on the assumption that economic activities are relatively concentrated in some regional blocks, which may be characterized by high demand. This high demand reinforces the concentration of economic activities in such regions. The theory adds that the high density and distribution of economic activity may be due to dispersion and agglomeration forces. NEG is therefore focused on the location of economic activity, specialisation and agglomeration, at the expense of economic growth.
Nonetheless, the theory provides some information on growth outcomes.

From the macro point of view, some theories have focused on the significant role of non-economic factors in economic growth. Subsequently, institution economics has emphasised the contributions of institutions in economic growth (North, 1990; Matthews, 1986). Economic sociology has also heightened the need to look at socio-cultural factors as a determinant of economic growth (Granovetter, 1985). According to political scientists, political drivers of economic growth cannot be left out in the economic growth argument (Brunetti, 1997). Some researchers have also highlighted the demographic and geographical contribution to economic growth (Kalemli, 2002; Gallup et al., 1999).

2.2 Empirical Review

2.2.1 Government Expenditure and Economic Growth

The effect of government size on economic growth has brought about a surfeit of empirical studies due to the number of theories on the likelihood of government activities to impact growth.

Arpaia and Turrini (2008) assessed the impact of government expenditure on potential output for fifteen (15) European Union countries using pooled mean group estimation technique from 1970-2003. The results from the regression revealed that there exists a long-run positive relationship between government expenditure and economic growth for all countries. However, in the United Kingdom, although a positive effect was found,
government expenditure was noted to be growing at a less than proportionate rate relative to economic growth in the 1980s. This was ascribed to the restructuring of the government sector at the time. The same pattern was also realized in Belgium, Greece, Austria, Denmark, Ireland, Spain, Italy, Germany, Netherlands, Finland, France, and Portugal in terms of government expenditure growth and potential output in the 1980s. The study explained that the reason for the slower pace in expenditure growth for Belgium, Denmark, and Ireland was the stabilization of debt-GDP ratios.

Alexiou (2009) empirically conducted a study on the link between economic growth and government spending in some countries in southern Europe for the period 1995 to 2005. Applying pooled OLS and GLS estimation techniques, empirical results obtained revealed that government spending had a positive and significant effect on economic growth. The introduction of control variables like development assistance, trade-openness, private investment and capital formation to the model also revealed a positive and significant impact of government spending on economic growth. The study, however, revealed that although population growth rates positively affect growth, the effect was statistically insignificant.

Antonis (2013) empirically tested the link between government spending and economic growth in Greece from 1833 to 1938. Employing an Autoregressive Distributed Lag (ARDL) Co-integration method of analysis, Antonis (2013) established that government spending affects economic growth positively in the long run. The result was statistically significant. This result reinforces Wagner’s hypothesis that “there exists a positive relationship between state activities and public expenditure. Another study consistent with Wagner’s law was done by Akitoby et al. (2005) in which economic growth
positively impacted government expenditure for some developing countries using Co-integration method of analysis. Henrekson (1993) carried out a study in Sweden and no evidence of a long-run positive relationship was found to exist between economic growth and government spending using Co-integration method of analysis. Similarly, Huang (2006) conducted a study on China and Taiwan and found no relationship between economic growth and government spending using the Bounds Test estimation technique. The period for his study was 1979-2002.

Calderón and Servén (2008) studied the effect of infrastructure expenditure on economic growth using infrastructure supply as a proxy for public spending in sub–Saharan African countries. The study estimated growth and inequality equations, as well as a standard set of control variables augmented by infrastructure quality and quantity indicators, whiles controlling for potential endogeneity of the latter. Empirical results revealed that infrastructure development and a better quality of infrastructure services affected growth positively in the long-run but had a negative impact on income inequality. Folster and Henrekson (2001) in another study were quick to add that the share of infrastructure to government expenditure is less than one-fifth for OECD countries and more than half for less developed countries.

Yasin (2011) examined the effect of public spending on economic growth for SSA for the period 1987 to 1997. The study employed both fixed and random effect estimation techniques. Results from this study revealed that government spending impacts economic growth positively and significantly. Control variables like private investment, the growth rate in population, trade-openness and foreign development assistance included in the model positively and significantly affected economic growth.
Sobhee (2010) empirically estimated the effect of globalization on public spending in sub-Saharan Africa after controlling for idiosyncrasies. The study sought to fill the gap by providing a more robust econometric estimate using Kaufmann et al.’s (2005) six measures of institutional quality. The study revealed that globalisation has an impact on public spending, hence making it susceptible to external risks like a fall in both investment and export prices. Furthermore, economic growth was found to influence public expenditure; which confirms Wagner’s hypothesis. The study also indicated that institutional quality, Political Instability (PI) and Regulatory Quality (RQ), significantly affect public spending. From the results of the study conducted by Sobhee (2010), it may be concluded that state control enhancement over market imperfections may expand the public sector spending base.

Kweka et al. (1999) investigated the effect of government spending on economic growth in Tanzania from 1965-1996. The Error Correction Model and Engle-Granger Cointegration methods of analysis were employed in the study. Total government expenditure was observed to have no impact on growth. Total government expenditure was thus disaggregated into human capital investment, physical investment expenditure and consumption spending. An increase in physical investment (productive expenditure) negatively impacted economic growth. Consumption expenditure was positively related to growth, mainly due to its contribution to private consumption and incomes, and this was particularly associated with improved private consumption. Public investment was however observed to impact negatively on growth. The observed insignificance of human capital on growth could be attributed to the fact that any attempt to improve human capital to ultimately influence enhanced growth rates would have very long time lags.
The result of this study is inconsistent with the view (Musaedah, 1997) that government consumption spending reduces growth but confirms the view in Tanzania that public investment has not been productive. There was also evidence that aid and export positively impact growth, especially the reforms in the mid-1980s Kweka et al. (1999).

Ketema (2006) conducted a research in Ethiopia on the impact of government spending on economic growth. Components of government spending included human capital, investment and consumption. Based on the data analysis, it was concluded that in the long run, human capital expenditure had a positive and significant effect on economic growth while expenditure on consumption and investment showed a negative and insignificant effect on economic growth for the period 1960/61-2003/04. The estimation technique employed was Johanson maximum procedure.

Nketiah-Amponsah (2009) carried out a study in Ghana by looking at the impact of government spending on economic growth for the period 1970-2004 using a time series estimation technique. The study found that aggregated government expenditure had a negative impact on economic growth.

Nurudeen and Usman (2010) also conducted a similar study in Nigeria using a disaggregated approach to determine the components (total capital expenditure, education and health, total recurrent expenditure, transport and communication) of government expenditure that enhances growth. The period for the analysis was 1970-2008 and the estimation procedures used were the error correction and co-integration methods. The results obtained indicated a negative effect of both recurrent expenditures and total capital on economic growth in the long run. Contrary to this view is the result of a study
by Aladejare (2013). Nurudeen and Usman (2010) found that expenditure on education have a declining effect on economic growth. Nurudeen and Usman (2010) explained that these key components had negative impacts on growth due to improper utilisation of allocated funds to the sectors. Surprisingly, allocated funds were embezzled in most cases. However, government expenditure on transport, health and communication had a positive effect on economic growth in the long run.

Twumasi (2012), also carried out a study in Ghana on fiscal policy impact on economic growth for the period 1981-2008. Stationarity of variables was checked using the DF-GLS test and the bounds. Empirical results showed a positive effect of fiscal policy on economic growth. Control variables like Terms of Trade, private investments and labour force were also found to have a positive effect on economic growth. Tax revenue, on the other hand, was found to have a negative effect on economic growth. This finding is consistent with the Armey curve theory.

2.2.2 Foreign direct investments in Sub-Saharan Africa

Most researchers have indicated that investment is key in job creation and promoting formal sector opportunities which have an indirect effect on the informal sector in an economy (Jenkins and Thomas, 2002). The inflows of foreign capital are therefore necessary, especially where there are limited domestic resources to finance investment. Literature in the field of foreign direct investment in SSA needs clarity and specialisation. This study attempts to establish a relationship between FDI and economic growth in SSA.
Alfero et al., (2004) explored the link between FDI financial market and economic growth using 1975 and 1995 data across countries. It was found that FDI plays a significant role in economic growth. Thus, FDI positively influences economic growth. However, economies who have well-developed financial markets benefit from FDI significantly.

Employing secondary data from the central bank of Nigeria, Federal Office of Statistics and the IMF, Ayanwale (2007) examined the relationship between FDI and economic growth and the determinants of FDI inflows into the Nigerian economy. Using data from 1970 to 2002, a model was estimated using OLS and 2SLS. Results from the study indicated that FDI positively affects economic growth and that stable macroeconomic policy, infrastructure development and market size were the determinants of FDI in Nigeria.

Andinuur (2013) conducted a study in Ghana to explore the relationship between FDI, inflation and economic growth. This study employed the Granger causality test and the cointegration approach on a time series data spanning from the year 1980 to 2011. Results from this study show that a positive relationship between economic growth and FDI holds, both in the long run and short run. However, inflation was observed to be inversely related to economic growth, in addition to a bidirectional relationship reported to exist between economic growth and FDI.

Jugurnath et al., (2016) conducted a study on a panel of 32 SSA countries to examine the effect of FDI on economic growth between the years 2008 and 2014. The authors used both a static and dynamic panel model to estimate the model used in the study. Their
findings indicated that there is no significant relationship between FDI and economic growth. Further, the aggregated FDI has a positive and significant effect on economic growth. Similarly, Tsatsaridis (2017) used data from the World Bank on forty-three SSA countries from 1996 to 2016 to investigate the impact of FDI on the growth of GDP. In this study, the OLS regression was employed with country fixed effect and cointegration tests on the series. Results from the study showed a positive significant impact of FDI inflows on GDP growth and an inverse relationship between education and inward FDI investment.

Udoh and Odo (2017) found in Nigeria that FDI has a strong positive impact on economic growth. Data used in this study covered the period 1981 to 2013 from the World Bank Statistical Data, National Bureau of Statistics and CBN Statistical Bulletins (2013) to estimate the results of the study.

Adams (2009) investigated how FDI inflow and domestic investment affect economic growth in Sub-Saharan Africa using data from 1990-2003. The author found a positive trend between FDI and economic growth. However, the initial result indicated a crowding out of domestic investment in the process.

Ndambiri et al. (2012) used the Generalized Methods of Moments panel estimation technique on 19 countries and found that foreign aid negatively impacts economic growth. However, control variables such as physical capital formation and exports were found to affect economic growth positively. This study is consistent with Keynes’ assertion that economic growth is positively affected by the levels of export.

From the above review, it is observed that quite a substantial number of researchers
consider FDI as significant bedrock of development, which is mostly observed through the impacts of FDI on GDP and labour of host countries. From the above review of literature, it is observed that studies with regards to FDI and economic growth have produced mixed results.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discusses the statistical techniques used in estimating the effect of government size and FDI on economic growth. This chapter is made up of four (4) sections. Section 3.1 discusses the source of data. The model specification is described section 3.2 whilsts description of variables are presented in section 3.3. Section (3.4), the final section in this chapter discusses the estimation technique.

3.1 Source and Description of Data

This study employs data from the World Bank’s 2016 World Development Indicators (WDI) on 42 SSA countries covering the period of 2000 to 2016. Availability of data on the variables employed necessitated the selection of the period of study. Five hundred and thirty-eight (538) data points were used in estimating the models for this study.
3.2 Model Specification

3.2.1 Empirical Model

The impact of government size and FDI on economic growth is explored using a panel regression model. Tsatsaridis, (2017) used this model to estimate the impact of FDI on economic growth. Following Tsatsaridis, (2017), this study extended the model to capture the level of external debt, gross fixed capital formation and inflation. Based on the abovementioned, the implicit model adopted in this study to show the various determinants of economic growth and the relationship between them is shown in equation (1).

\[
EGROWTH = f (GOVSIZE, FDI, EDEBT, CAPFORM, LFPR, ODA) \tag{1}
\]

Where,

EGROWTH = nominal value of gross domestic product, GOVSIZE = government size, CAPFORM = gross fixed capital formation, EDEBT = external debt, LFPR = labour force participation rate, FDI = foreign direct investment, ODA = net development assistant received.

A model date econometric model is used to estimate equation 1.

\[x\]
\[x \ i = 0, 1,\ldots,6 \text{ are parameter estimates, } x \text{ is the random term.}\]

In a panel regression model, the error term can be divided into two as follows:

\[x\]
Where \( x \) is the unobservable country specific effect, \( x \) is the unobservable time effect, and \( x \) is a new stochastic error term. Thus equation 2 can be rewritten as

\[
x
\]

Where \( x \) is the intercept term, and \( x \ldots \) is the associated unknown parameters of the independent variables. Equation 4 is the panel model employed in this study.

3.3 Description and Measurement of Variables

3.3.1 Dependent Variable

Economic growth is the dependent variable that is considered in this analysis. This is measured as the log of GDP per capita.

3.3.2 Independent Variable

The explanatory variables selected for this study is based on economic theory and existing literature. Government expenditure, Foreign Direct Investment (FDI), Labour force participation rate, external debt, gross fixed capital formation, and official development assistant are variables that are empirically considered most essential for economic growth in Sub-Saharan Africa. These variables are discussed below in relation to economic growth. All the variables are measured in US current currency terms as published by the World Bank.

**Government Size:** In recent time much attention has been focused on the link between Government Spending and economic growth. Economic literature has it that government expenditure could crowd out interest-sensitive investment. The level of savings in an
economy reduces as a result of government spending (savings plus consumption makes up income so as consumption increase savings will fall) and this may lead to high interest rates. Such high-interest rates discourage investment hence reduces the total output produced in an economy. Some scholars are of the view that government spending will not lead to improvement or increase in economic growth (see Ghura, 1995; Nketiah-Amponsah, 2009). Government spending can, however, stimulate growth if they are channelled into the productive sectors of the economy (Calderón & Servén, 2008). Despite the ambiguity in both empirical and theoretical literature in relation to the effect of government spending on economic growth, the expectation of this study is that the coefficient of government size should be positive. General government final consumption expenditure (government spending) would be used as a proxy for government size.

**Foreign Direct Investment (FDI):** There have been inconclusive findings in the literature concerning the relationship between Foreign Direct Investment and economic growth. Most Sub-Saharan African countries have put in measure to attract the inflows of FDI in order to take advantage of the general rise in the rates of FDI inflow into Africa. Aside from FDI inflows, Sub-Saharan African countries also benefit from the knowledge and technological transfer from developed countries. All things being equal, the expectation is that the knowledge that is transferred would be learnt and used by the locals or residents of the host nation. This will help bridge the knowledge gap as well as improve productivity in the host nation. According to Alfaro et al, (2004), sporadic capital resources are made available to countries that have limited supply as a result of FDI flows between countries. There have been arguments that for FDI to induce growth,
the domestic financial market must be effective and adequately developed. Again, the labour force in the domestic country must have high education to be able to exploit the spillovers of FDI. Some economists (Makki, & Somwaru, 2004; Tsatsaridis, 2017) have argued that openness to trade is a major factor in gaining FDI induced growth. Nonetheless, there is a crop of researchers that believe that the flow of FDI will distort the financial market, thereby leading to an obstruction of the efficient allocation of resources and sluggish growth (Blomstrom et al., 1994; Carkovic & Levine, 2002). Theoretically and empirically, the actual effect of FDI on economic growth remains ambiguous. This notwithstanding this study expects that FDI will be positively related to economic growth. Net FDI inflow is used as the measure of FDI.

**Gross Fixed Capital Formation:** The stock of capital in an economy contributes immensely to economic growth. A capital formation level that addresses depreciation issues (capital deepening) and also increases existing capital stock (capital widening) is required to grow the economy. Ceteris paribus, a larger gross fixed capital formation grows an economy faster. Gross fixed capital formation is expected to have a positive relationship with economic growth and is measures as gross fixed capital formation at constant US prices.

**External Debt:** These are monies owed by a domestic country to a foreign country. According to the International Monetary Fund (IMF) (IMF Working Paper No. 03/249, December 2003), a country with a heavy debt burdens stands a very low chance of escaping poverty. A country that is highly lumbered with foreign debts increases its debt servicing ratio and finds it difficult to attract enough foreign exchange to grow its economy (Kasidi et al, 2013). This goes to mean that, a high foreign debt, ceteris paribus,
will lower economic growth. The study looks forward to an inverse relationship between external debt and economic growth. Debt to GDP ratio is used as a proxy for external debt.

**Labour Force Participation Rate:** Labour force participation rate is very crucial to economic growth. Economic theory, specifically the Solow growth model, have made it clear that active labour force is a major contributing factor to economic growth. A country’s labour force comprises the section of the population 15 years and older who are active economically and supply their services in a particular period. A country with a more active labour force is likely to produce more, this higher productivity if well sustained, all things being equal will lead to economic growth. The study expects the labour force participation rate to be positively related to economic growth.

**Official Development Assistant (ODA):** This has to do with all resources (technical know-how, financial grants and physical goods) given to a recipient government by a donor (Riddell, 2007). ODA is a form of foreign aid that is usually received by developing countries. The aid has a tendency of promoting economic development and improving the welfare in the recipient country. The level of ODA of a given country can impact its economic growth rates. It is expected that ODA will have a positive effect on economic growth.

**Table 3.1: Variables, indicators and expected signs.**
<table>
<thead>
<tr>
<th>Variable</th>
<th>Proxies/Indicators</th>
<th>Expected relationship with economic growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Size</td>
<td>Government final consumption expenditure</td>
<td>Positive</td>
</tr>
<tr>
<td>FDI</td>
<td>Net inflows of FDI</td>
<td>Positive</td>
</tr>
<tr>
<td>External Debt</td>
<td>External debt stock</td>
<td>Negative</td>
</tr>
<tr>
<td>Gross Fixed Capital Formation</td>
<td>Gross Fixed Capital Formation</td>
<td>Positive</td>
</tr>
<tr>
<td>Labour Force Participation</td>
<td>Labour Force as a percentage of the population</td>
<td>Positive</td>
</tr>
<tr>
<td>Official Development Assistant</td>
<td>Net official development assistance received</td>
<td>Positive</td>
</tr>
</tbody>
</table>

### 3.4 Estimation Techniques

To ensure that the estimates are free from all form of biases and for robustness checks, the study employed three different panel data techniques. First of all, the model is estimated using the standard pooled OLS estimators. This model ignores the country effects. The study further employs the Fixed and Random effect panel estimations techniques. This model solves the problem arising from the pooled OLS estimation and controls for all unobserved effects that are not captured by the pooled OLS estimation. The three-panel estimation employed in the study is discussed below.
3.4 Advantages of a Panel Data

There are several advantages associated with the use of panel data for economic analysis (Gujarati, 2009; Green, 2008). First, panel data comprises of a combination of time series and cross-sections, which allows for more degrees of freedom which is usually not the case when a time series or cross-sectional model is used for analysis. Also, the availability of a higher number of observations allows more variability in the data and multicollinearity is also reduced. Second, panel data uses the individual-specific variables in its analysis; thus, it is able to take into account the problem of heterogeneity among the cross-sections.

Thirdly, the problem of aggregating data which is usually associated with time series is lessened when a panel data is used for analysis. Further, panel data has an advantage over the conventional time series and cross-sections because of its ability to give a better measurement as well as identify effects that are not usually detected by time series and cross-sectional data. Finally, the panel data is able to give unbiased estimates even when there are missing observations in some time periods or cross-sections. However, such cases in time series will demand the dropping of these missing observations which may lead to biased estimations. This makes the use of panel data for this study very appropriate because of the problem of missing observations which is associated with data on variables among the member countries in SSA.
3.5 Random Effects model and Fixed Effects

Panel data analysis usually makes use of either the fixed effects model or the random effects model (Green, 2008). The random effect model treats the intercept of the model as a random outcome variable. This random outcome variable is a functional combination of a mean value and a random error. Therefore, it implies that the error term of the cross-sectional unit measures the random deviations from the constant to the cross-sectional unit. One very important feature of the random effect model is that the cross-sectional units have their error term being constant over time. Also, the error term of the cross-sectional unit should not be correlated with the errors of the explanatory variables in the random effect model. This model allows time-invariant explanatory variables to be included in the model because of the specification of the intercept in the model.

On the other hand, the fixed effect model is characterized by different intercepts for each entity; however, the slope is constant. The assumption behind the different intercepts in the fixed effect model is the omitted variable effect. The varying intercepts of each cross-sectional unit are to absorb the effects of all omitted variables that do not vary over time but differ across entities. The fixed effect model has its merits and demerits.

The fixed effect model has the advantage of allowing for error terms which correlate with the individual specific effect. There however exist some disadvantages associated with the use of a fixed effect model for panel data analysis. A major disadvantage is the problem of multicollinearity and loss of degrees of freedom that normally occurs when
several dummy variables of many cross-sectional units are used in the model. Additionally, the presence of autocorrelation which is specific to a cross-sectional unit may lead to the failure of the model to predict better estimates for the analysis conducted.

In short, the difference between the fixed effect model and the random effect model is that the random effect has a country-specific error term whereas the fixed effect model rather has a country-specific intercept. The Hausman test is applied to test which of these models is appropriate for this study.

3.6 Diagnostic tests

This study tests for autocorrelation, heteroskedasticity and multicollinearity. Although panel data contain less collinearity.

3.6.1. Heteroskedasticity and Autocorrelation

Heteroskedasticity and autocorrelation are problems associated with cross-sectional and time series data respectively. Panel data is made up of both cross-section and time series features which imply the likelihood of heteroskedasticity and autocorrelation. According to Granger and Newbold (1974), autocorrelation makes coefficient estimate inefficient. Heteroskedasticity violates the assumption of the constant variance of the error term. The presence of heteroskedasticity makes the parameters inefficient. Hence, conclusions from the F and t-tests are unreliable.
The study, therefore, tests for the presence of heteroskedasticity and autocorrelation using Breuch-Pagan (BP) test for heteroskedasticity and autocorrelation. The study corrects for autocorrelation and heteroskedasticity using the robust command in the panel estimation.
CHAPTER FOUR

ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter presents and discusses issues in relation to the panel estimation model specified in chapter three above. The results were estimated using STATA. The analysis of the results started with a descriptive analysis of the variables used in the study, followed by the diagnostic test discussed in chapter three and finally, a presentation and discussion of the actual result of the study.

4.1 Descriptive Analysis

The statistical properties of the variables employed in the model from 2000 to 2016 are discussed. The summary statistics has the standard deviation, mean, the maximum and minimum values for the sample. Details of the summary statistics are captured in Table 4.1.

Table 4.1: Summary Statistics
<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGROWTH</td>
<td>22.58126</td>
<td>1.532323</td>
<td>18.08703</td>
<td>27.06627</td>
</tr>
<tr>
<td>GOVSIZE</td>
<td>20.74525</td>
<td>1.444657</td>
<td>17.28703</td>
<td>25.13861</td>
</tr>
<tr>
<td>FDI</td>
<td>18.86158</td>
<td>2.084574</td>
<td>10.36072</td>
<td>23.01428</td>
</tr>
<tr>
<td>EDEBT</td>
<td>21.41336</td>
<td>1.2338191</td>
<td>18.41955</td>
<td>25.11971</td>
</tr>
<tr>
<td>CAPFORM</td>
<td>21.11682</td>
<td>1.60694</td>
<td>15.75775</td>
<td>25.1747</td>
</tr>
<tr>
<td>LFPR</td>
<td>63.42098</td>
<td>11.56327</td>
<td>42.359</td>
<td>90.34</td>
</tr>
<tr>
<td>ODA</td>
<td>19.59668</td>
<td>1.400973</td>
<td>13.16158</td>
<td>23.15968</td>
</tr>
</tbody>
</table>

Source: Author’s Computation

The dispersion of the variables from their mean is captured by the standard deviation in Table 4.1 above. Large standard errors indicate the presence of outliers. The spread is determined by the difference between the maximum and minimum values of the variables. A large standard deviation of a variable is indicated by a bigger gap of the said variable.

EGROWTH averaged about 22.58. The minimum and maximum values of EGROWTH were 18.09 and 27.07 respectively over the period. GOVSIZE averaged 20.74 for the period with a minimum value of 17.29 and a maximum value of 25.14. The average of FDI net inflows for the period was about 18.86, with about 10.36 minimum and about 23.01 maximum. Breakdown of the rest of the control variables are all shown above in
The correlation between EGROWTH and the variables in the study is shown in Table 4.2 below.

Table 4.2: Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>EGROWTH</th>
<th>GOVSIZE</th>
<th>FDI</th>
<th>EDEBT</th>
<th>CAPFORM</th>
<th>LFPR</th>
<th>ODA</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGROWTH</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVSIZE</td>
<td>0.75</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>0.45</td>
<td>0.42</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDEBT</td>
<td>0.48</td>
<td>0.42</td>
<td>0.39</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPFORM</td>
<td>0.59</td>
<td>0.55</td>
<td>0.51</td>
<td>0.40</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LFPR</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.07</td>
<td>-0.07</td>
<td>-0.1</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>ODA</td>
<td>0.48</td>
<td>0.45</td>
<td>0.38</td>
<td>0.45</td>
<td>0.29</td>
<td>0.19</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Source: Author’s Computation

Table 4.2 indicates the relationship between the economic growth variable (EGROWTH) and other variables. The results met the expectation of the study. Generally, there is a low correlation between the variable (below 0.50) with the exception of the correlation between the following EGROWTH and GOVSIZE which recorded about 0.75, Gross Fixed Capital Formation (CAPFORM) and EGROWTH which recorded about 0.59.
Gross Fixed Capital Formation recorded 0.55 with government size, and finally about 0.51 with FDI. The 0.75 correlation between EGROWTH and government size is understandable because the computation of EGROWTH takes government spending into account.

4.2 Hausman Specification Test

In order to use the appropriate model for the study, the study employed the Hausman specification test to help choose between the fixed effect and random model. Table 4.3 below presents the results from the Hausman specification test.

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>(b)</th>
<th>(B)</th>
<th>(b-B)</th>
<th>Sqrt (diag (V_{b-B}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>FE</td>
<td>GOVSIZE</td>
<td>0.6131143</td>
<td>0.6140248</td>
<td>-0.0009104</td>
</tr>
<tr>
<td>RE</td>
<td>FDI</td>
<td>0.0425694</td>
<td>0.0416719</td>
<td>0.0008975</td>
</tr>
<tr>
<td>Difference</td>
<td>EDEBT</td>
<td>0.0938056</td>
<td>0.0996248</td>
<td>-0.0058192</td>
</tr>
<tr>
<td>Standard Errors</td>
<td>CAPFORM</td>
<td>0.1355434</td>
<td>0.136278</td>
<td>-0.0007346</td>
</tr>
<tr>
<td></td>
<td>LFPR</td>
<td>0.0074232</td>
<td>0.003098</td>
<td>0.0043253</td>
</tr>
<tr>
<td></td>
<td>ODA</td>
<td>0.0495584</td>
<td>0.518757</td>
<td>0.0023171</td>
</tr>
</tbody>
</table>

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic
\[
\text{chi2 (6) } = (b-B)'[(V_{b-V_B})^{-1}](b-B) \\
= 7.30 \\
\text{Prob>chi2 } = 0.2937
\]

Source: Author’s Estimation

The results from the Hausman test failed to reject the null hypothesis of no correlation between the regressors and the country heterogeneity error term. This makes the random effect model appropriate over the fixed effects model. This result confirms a similar result obtained by Yasin (2011). The study, therefore, concentrates on results of the random effect (RE) model or an OLS estimate depending on the results from the test for a random effect.

4.3 Diagnostic Test

The study chooses between the random effect and OLS by conducting the Breusch-Pagan Lagrange multiplier (LM) test. It also tests for multicollinearity, heteroskedasticity and autocorrelation to make the appropriate corrections and ensure more robust results.

4.3.1 Test for Random Effect

In order to choose between the random effect and the OLS regression, the study used the Breusch-Pagan Lagrange multiplier (LM). The results from the test are presented in Table 4.4 below.

Table 4.4: Breusch and Pagan Lagrangian multiplier test for random effects
The LM test is based on a null hypothesis that the variance across countries is zero. Thus there is no panel effect. From Table 4.4 the study rejects the null hypothesis of no panel effect and concludes that there is evidence of a cross country difference. This makes the random effect more appropriate for the estimation.

4.3.1 Multicollinearity

The presence of multicollinearity has the effect of making the estimated coefficients unstable. As the degree of multicollinearity increases, it causes the standard errors of the estimated coefficients to be inflated. In instances where multicollinearity is very severe, the coefficient estimates can change signs. The study, therefore, employs the Variance Inflation Factor (VIF) to test for multicollinearity. The result is presented in Table 4.5 below

**Table 4.5: VIF Test for Multicollinearity**
<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPFORM</td>
<td>10.98</td>
<td>0.091039</td>
</tr>
<tr>
<td>GOVSIZE</td>
<td>8.36</td>
<td>0.119615</td>
</tr>
<tr>
<td>FDI</td>
<td>2.62</td>
<td>0.382059</td>
</tr>
<tr>
<td>EDEBT</td>
<td>2.54</td>
<td>0.394327</td>
</tr>
<tr>
<td>ODA</td>
<td>1.87</td>
<td>0.535835</td>
</tr>
<tr>
<td>LFPR</td>
<td>1.21</td>
<td>0.828894</td>
</tr>
</tbody>
</table>

**Mean VIF** 4.60

Source: Author’s Estimation

Results from Table 4.4 indicate that generally, there is a minimal correlation among the independent variables. The general rule is that VIF should exceed 10 (Gujarati and Porter, 2009). The mean VIF of the variables is less than 10. This implies that each of the variables can be considered as a linear combination of the dependent variable (EGROWTH).
4.3.1 Heteroskedasticity

To ensure an efficient regression estimate, homoscedasticity (Equal and constant variance error terms) is required. The presence of heteroskedasticity violates the assumption of constant variance. The study, therefore, employed the Breusch-Pagan to test for the heteroskedasticity. See the results in Table 4.6 below.

Table 4.6: Breusch-Pagan Test for Heteroskedasticity

<table>
<thead>
<tr>
<th>H0: No Heteroskedasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2, 535) = 4948.17</td>
</tr>
<tr>
<td>Prob&gt; F = 0.0000</td>
</tr>
</tbody>
</table>

Source: Author’s Computation

The presence of heteroskedasticity is confirmed in the model, the probability of the Breusch-Pagan test is 0.0000.

4.3.3 Autocorrelation

To arrive at a consistent parameter estimate, the assumption of no correlation between the regressors and the error term must hold. To verify this assumption, the study employed the Wooldridge test. The results are shown in Table 4.6 below

Table 4.7: Wooldridge for Autocorrelation in Panel

<table>
<thead>
<tr>
<th>H0: No first-order autocorrelation</th>
</tr>
</thead>
<tbody>
<tr>
<td>F(6, 538) = 86.360</td>
</tr>
<tr>
<td>Prob&gt; F = 0.0000</td>
</tr>
</tbody>
</table>

Source: Author’s Computation
The probability value of 0.0000 from Table 4.7 rejects the null hypothesis of no autocorrelation. This implies that there is a level correlation between the error term and the regressors.

Having confirmed the presence of autocorrelation and heteroskedasticity, the study presents a robust estimation from the random effect and fixed effect models.

4.4 Discussion of Empirical Results

The results in Table 4.8 are obtained from estimating equation (4) using the fixed effect and random effect estimation techniques. The Hausman test in Table 4.3 rejected the null hypothesis of no correlation between the regressors and the country heterogeneity error term, this makes the random effect model appropriate for the estimation. The analysis is focused on the parameter estimate from the random effect estimates.

The results from the random effect model in Table 4.8 revealed that government size significantly affects economic growth in SSA countries. Specifically, a percentage increase in government size increases economic growth by 0.61 percent. This result is statistically significant at 1 percent (see column 2 of table 4.8. This could be due to the fact that government spending on growth-enhancing sectors or activities that drive economic growth. These findings corroborate the results of (Calderón & Servén 2008; Yasin 2011; Antonis 2013). However, the result is inconsistent with the findings of Nketiah-Amponsah (2009) that government spending impact economic growth
negatively. The result of this study implies that government size is necessary to promote economic growth. However, government spending should not be focused on just consumption but also on infrastructure as it is also very critical in promoting growth.

Similar to the findings of (Adams 2009; Nurudeen 2010; Jugurnath et. al. 2016) FDI positively influences economic growth in SSA countries. A percentage change in FDI increases economic growth by 0.04 percent. The result is statistically significant at all levels (see column 2 of Table 4.8). Nonetheless, this result contradicts the findings of Alfaro (2003) who found across countries that FDI decreases economic growth.

Aside from government size and FDI, the other variable in the model also significantly impact economic growth. For example, gross fixed capital formation, external debt and official development assistant (see column 2 of Table 4.8). External debt has a negative and significant effect on economic growth. This implies that as external debt increases by one percent, economic growth will decrease by approximately 0.1 percent. Governments of SSA countries should pay attention to their external debt levels as they stand a chance of reducing economic growth.

Table 4.8: Fixed Effect and Random Effect Estimates
The study also estimated the effect of government size on FDI. Results from this estimation are presented in Table 4.8. It is observed from table 4.8 that increases in government size significantly affect inflows of FDI. Specifically, a percentage increase in government size increases FDI inflows by 0.75 percent. The result is statistically significant at one percent. This result corroborate the findings of (Jugurnath et al., 2016; Udoh & Odo 2017; Tsatsaridis 2017). However, the result contradicts the finding of (Muritala et al. 2011; Ndambiri et al., 2012) who reported a negative relationship between FDI and government spending.
Table 4.8 further revealed that gross fixed capital formation and official development assistance are positive drivers of economic FDI inflows. Specifically, a percentage increase in CAPFORM increases FDI inflows by 0.17 while a percentage increase in ODA increases FDI inflows by 0.21. These results are statistically significant at all levels.
CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a brief overview of the preceding chapters in this study. It also covers the summary of findings, conclusions, policy recommendations, limitations of the study and finally, suggestions for further research.

1.1 Research Summary

The effects of government size on economic growth have been of interest to economists. Government spending has been used as a key instrument to influence aggregate demand in economies. It has also been used as a key strategy in ensuring that essential goods and services that are demanded by the public are produced in countries. Economic growth can be defined as a sustained increase in the GDP over time. GDP growth leads to an increase in employment, income and reduces poverty.

The Keynesian economists believe that aggregate demand can be triaged by a large government size and this will lead to an increase in income in the long run. Despite the increase in spending of governments in SSA countries over the years, the economic growth of these countries has been slow in recent years. Due to the economic size and structure of these economies, sustained growth in their production capacities has the potential of increasing employment, aggregate incomes, as well as reducing poverty.
levels in the sub-region.

However, little research has been done on the effect of government size and FDI on the economic growth of these countries. The few studies conducted in this area are county specific and are therefore not able to provide clear information about the effect of government size and FDI on the growth of SSA countries. This study bridges this gap of country-specific based studies to pooling of the data of the SSA countries and analyzing with them a panel regression model.

Using, panel data 42 SSA countries from 2000 to 2016, the study revealed that out of the six explanatory variables used in the study (government size, FDI, external debt, gross capital fixed formation, official development assistant and labour force participation rate), labour force participation rate was not statistically significant. The remaining variables are statistically significant at all levels. Whereas external debt negatively influences the economic growth of SSA countries, negatively, FDI, government size, gross capital fixed formation and official development assistant positively influence economic growth. Specifically, a percent increase in government size increases economic growth by 0.61 percent. The findings corroborate the results of (Calderón & Servén 2008; Yasin 2011; Antonis 2013). The results also confirm the Keynesians theory that large government spending triggers aggregate demand. This implies that fiscal policies should be enacted to ensure that government spending is focused on productive sectors to sustain the growth levels of SSA countries.
Also, a percentage increase in FDI increases economic growth by 0.04 percent. This finding is similar to the findings of Adams (2009), Nurudeen (2010) and Jugurnath et. al. (2016). FDI positively influences economic growth in SSA countries.

Finally, a percent increase in government size increases the FDI inflows of these countries by 0.75 percent. The result is statistically significant at all levels. The results confirm the findings of Jugurnath et al., (2016), Udoh & Odo (2017) and Tsatsaridis (2017).

5.2 Conclusion

Economic growth is imperative in poverty reduction and income creation. Fiscal policy remains a major policy strategy used by countries in expanding national income. The study concludes that government size significantly the affect economic growth rates of SSA countries. In addition, labour force participation rate, government size, FDI, external debt, official development assistant and gross fixed capital formation affects economic growth significantly SSA countries.
5.2 Policy Recommendations

Based on the foregoing, the following policy recommendations are made:

- Governments of SSA countries should pay attention to their external debt as it stands a chance of reducing economic growth. They are encouraged to develop external debt levels or thresholds to prevent a reduction in economic growth.

- Also, governments of SSA countries through their Economic and Finance Ministries should endeavour to spend on strategic areas such as economic infrastructure, education and health to sustain the inflows of foreign direct investment and sustain economic growth.

- In addition, the study recommends that governments of SSA countries maintain a cordial relationship with their development partners. This will help to attract assistance from their development partners that will inure to the benefit of the economies of SSA countries.

- Finally, the study recommends that SSA countries invest in new capital and replace worn out fixed capital to sustain production and consequently increase economic growth.

5.3 Suggestions for future research

Firstly, future studies could consider doing the analysis with sophisticated panel data models, such as Panel Vector Autoregressive Models. This would help to obtain possibly efficient parameter estimates.
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