UNIVERSITY OF CAPE COAST

FINANCIAL DEVELOPMENT, INSTITUTIONS AND ECONOMIC GROWTH IN SUB-SAHARAN AFRICA

JOSEPH KWASI ASAFO

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BY

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Thesis submitted to the Department of Economic Studies of the School of Economics, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy Degree in Economics

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DECLARATION

Candidate's Declaration

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

Signature……. Date……

Candidate's Name: Joseph Kwasi Asafo

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.

Signature……. Date……

Principal Supervisor's Name: Dr. Emmanuel Ekow Asmah

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Co-Supervisor's Name: Dr. Adams S. Y. Adama

ABSTRACT

This study analyses the effect of financial development on economic growth in SSA and the moderating role played by institutions. The study employed system General Methods of Moments (GMM) approach on 36 SSA countries over 18-year period. The study revealed that using narrow-based financial development indicators as a proxy for financial development may lead to underestimation of the effect of financial development on economic growth. Financial market development is the aspect of financial development that is found to be efficient and effective in affecting economic growth. Again, all the institutional variables are effective in playing the moderating role of institutions on financial development to affect growth but political stability appeared to be the driving force among the institutional variables in SSA. Based on the results, the study recommends that researchers must consider the multidimensional measures for financial development when analysing the effect of financial development on any macroeconomic or policy variable. Also, resources and policies must be directed towards financial market development by various governments and their central banks anytime they desired to stimulate the financial development to affect growth. In addition, the study recommends that, attention should be given to all the institutional variables but political institutions need to be given more priority within the SSA region by various governments.

KEY WORDS

Financial development

Institutions

Economic growth

Development

Financial Sector

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DEDICATION

To my parents.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS/ABBREVIATIONS

AERC	African Economic Research Consortium
AR (2)	Arellano-Bond Test for Serial Correlation
ARDL	Autoregressive Distributed Lag
BMGDP	Broad money (M2+)
CON	Control of corruption
DD	Gross Domestic Savings
DCPS	Domestic credit to the private sector
EAC	East African Communities
ECCAS	Economic Community of Central African States
ECM	Error Correction Model
ECOWAS	Economic Community of West African States
FD	Financial Development
FDI	Foreign Direct Investment
FI	Financial Institution Indicator
FINSAP	Financial Sector Adjustment Programme
FINSSP	Financial Sector Strategic Plan
FM	Financial Market Indicator
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation

GFDB	Global Financial Development Database
GMM	General Method of Moment
GOV	Government Effectiveness
GS	Government Final Consumption
ICRG	International Country Risk Guide's
IMF	International Monetary Fund
MENA	Middle East and North African
NFDI	Broad-Base Indicator for Financial Development.
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
PABs	Pan-African Banks
POP	Annual Growth Rate of Population
REG	Regulatory Quality
RGDP	Real Gross Domestic Product
RULE	Rule of Law
SADC	Southern African Development Community
SSA	Sub-Saharan Africa
TOT	Openness to International Trade
VECM	Vector Error Correction Model
VOICE	Voice and Accountability
WB	World Bank
WDI	World Development Indicators
WGI	World Government Indicators

CHAPTER ONE

INTRODUCTION

Background to the Study

Sub-Saharan Africa (SSA) is a region blessed with vast opportunities and resources, yet many challenges such as poverty persist within the region. Currently, the region is said to be hosting the four fast-growing economies in the world in 2019, namely Ghana, Ethiopia, Rwanda and Cote d'Ivoire (Leke, Signé & Initiative, 2019). Economic growth simply refers to the sustained increase in the real gross domestic product (GDP) of a country. Economic growth in Sub-Saharan Africa was estimated at 3.2 percent in 2019 and projected to be 3.6 in 2020, as compared to the 3.1 percent, 2.7 percent, 1.3 percent growth rate recorded in 2018, 2017 and 2016 respectively (Abebe, 2019). A cursory look at these figures shows that over the years, there has been much growth in GDP within the region. However, rapid population growth rate in most of the economies within the region has been identified as one of the factors retarding the expected impact of GDP growth on poverty reduction.

In the regional outlook reports 2019 by International Monetary Fund on sub-Saharan Africa, the growth rate within the region is expected to vary greatly from 2019 and beyond but non-natural resources dependent countries are expected to have strong growth rate about 6 percent yearly (Abebe, 2019). The resource-dependent countries are projected to have a slow growth rate of about 2.5 percent.

For example, the three largest economies within the region (Nigeria, Angola and South Africa) are facing various challenges that are negatively affecting the overall growth of the region. To be specific, Nigeria is experiencing close to zero growth in the non-oil sector, while the growth of the oil sector growth in Angola is very weak. In South Africa, investment is so weak to the point of dragging economic growth downward. With exception of these three economies, growth in most of the economies is expected to be robust in the coming years. Inflation and other macroeconomic variables are expected to be stable going forward (Abebe, 2019).

For the SSA region to maintain a strong growth rate above the world's average, there is the need to build a resilient economy against health, weather-related and security challenges. This can be achieved if much revenue is mobilized domestically, but this requires a well-developed financial system, minimization of efficiencies in the public sector, improvement in public financial management and removal of unproductive subsidies.

The main objective of every economy is to achieve sustained economic growth, which can translate into economic development through improvement in production techniques and levels of goods and services production. To achieve this, policy-makers and various governments have tried implementing a number of fiscal, monetary, and exchange rate policies. Researchers right from the days of Adam Smith tried to identify the main drivers of economic development and the potential wellsprings of development differentials crosswise over existence from both theoretical and empirical points of view. One of the variables identified to have effectively affected economic development is financial development

(Schumpeter, 1911). Schumpeter was of the view that countries that achieve a higher degree of financial development are able to make different forms of financial services accessible to their citizenry that enables higher savings mobilizations hence makes funds available for investment. This made the International Monetary fund (IMF) and World Bank to convince most of the developing countries to liberalize their financial sector to achieve financial development and economic growth.

Financial development refers to a multidimensional process that involves improvement in depth, access and efficiency (Svirydzenka, 2016). There are two aspects of financial development, namely; financial institution development and financial market development (Svirydzenka, 2016). In sub-Saharan Africa, the financial institutions consist of the banks, pension funds, mutual funds and insurance companies. Financial markets, are used in reference to the development of the stock and the bond market. The development of the financial institutions and markets are assessed using depth, access and efficiency. Depth measures the liquidity and size of the financial institutions and markets. Access measures the number of individuals that have access to the financial services; and efficiency, which measures the ability of the financial institution and market to provide services to customers at lower cost with sustainable revenue (Svirydzenka, 2016).

Prior to the financial sector reforms and liberalization, most Sub-Saharan countries have their financial sector relatively shallow and was purposely towards international trade financing at the time of independence (Gelbard & Leite, 1999). Financial development suffered much even after independence since most of the

countries have their banking sector purely nationalized and the provision of credit was seen as a powerful tool to fasten growth and development. This was done by subsidizing credit for selective sectors, which show signs of growth, and allowing for selective credit allocation. These activities resulted to inefficient allocation of financial resources, inflation and high non-performing loan, which rather worsened the rate of growth attained during these periods.

Since the mid-1980s, most of the developing countries especially the Sub-Saharan African countries mostly as part of the structural adjustment programmes proposed by International Monetary fund (IMF) and World Bank, started using financial liberalisation as a relevant tool or way to improve the financial sector as well as the growth of their economy. Some of the activities that took place include the restructuring of state-owned banks, thereby creating an enabling environment for foreign banks to operate within the banking industry, granting the domestic banks the permission to acquire foreign assets, removal of credit ceilings, liberalization of interest rates (Moyo, Nandwa, Council, Oduor, & Simpasa, 2014; Otchere, Senbet & Simbanegavi, 2017). According to Moyo et al. (2017), there is a shred of strong evidence that developing countries especially those in Sub-Saharan Africa that had high transparency in their financial regimes coupled with financial sector reforms have made greater advancement in growth and development compared to their counterparts that lack transparency. This technically means that the success of the reform depends on the scope, speed and the sequence of the reforms.

The financial sector in most sub-Saharan African countries has made much progress over the past three decades (Mlachilaet al., 2016). Despite the progress made (with the exception of the middle-income countries), most of the countries found within the region are still behind in terms of financial institutions development and financial market development compared to their counterparts in other developing regions such as the Middle East and Asia. Taking a close look at the region, it could be realised that the financial sector within the region is largely dominated by the banking sector which has the largest share of total financial assets in most countries within the region. For example, it accounts for about 100 percent of financial assets in South Sudan, Gabon, Congo Republic, Equatorial Guinea, Niger, Benin and a lot more (Mlachila et al., 2016). Mlachila et al. (2016) argued that the banking system within the region is largely dominated by foreign-owned banks, especially fragile countries such as Madagascar, Guinea and Guinea-Bissau. In terms of the non-banking financial assets, the pension funds have the largest asset whereas stock market assets are underdeveloped and not present in about 60 percent of the countries within the region as at 2016.

Much improvement has been made in terms of depth in the financial sector especially the financial institution depth within the region but could not be compared to its peers in other regions, which are also developing countries. For instance, the ratio of credit to the private sector to GDP has increased from 10 percent in 1995 to about 21 percent in 2014. However, this is just about half of the size made in the Middle East, Caribbean, North Africa and East Asia (Mlachila et al., 2016). In exception of South Africa, Nigeria and Ghana, most of the financial

markets are now coming up but some remarkable achievement made within the regions that need to be acknowledged. Although about 90 percent of total domestic debt issued in the depth market are government securities, there is a great improvement in the bond market in reference to financing infrastructure investment within the region. Another remarkable improvement made within the region is the increase in the maturity date of instruments issued within the region and several of the low-income countries such as Mali, Tanzania, Benin and others are able to issue instrument with maturity up to 10 years or even more. The region has also achieved improvement in the share of instruments that are marketable compared to those that non-marketable debt Asia (Mlachila et al., 2016). In the recent decade, Pan-African Banks (PABs) have expanded so rapidly with their subsidiaries being strengthen enough to compete with traditional European and American banks.

For sub-regional analysis, Mlachila et al. (2016) demonstrated that while the middle-income countries such as South Africa, Namibia, Seychelles and Mauritius have attained rapid financial development from 1980 to 2016, some of the countries in the conflict and civil war zones are better in term of their financial development in the 1980s compared to now. Nevertheless, taking the region as a whole, much improvement in the area of financial development to an extent.

Using Ghana as a case study, the Financial Sector Adjustment Programme (FINSAP) begun in 1988 as part of the Economic Recovery Programme initiated by International Monetary Fund (IMF) and the World Bank (WB). The main goal for liberalizing the financial system is to help overcome problems such as; shallow financial system, decreased savings and private investment, and low economic

growth created by the repressive policies of the 1960s to the mid-1980s (Aryeetey, Nissanke & Steel, 2000). Some of the important reforms were restructuring of state-owned banks, structural reforms example fiscal and monetary operations, private involvement, development of short-term and long-term financial markets (Bawumia, 2010). After the FINSAP, the Financial Sector Strategic Plan (FINSSP) was also implemented from 2001 to further develop the financial system of the country. The results from both the FINSAP and FINSSP gave some encouragement since the financial sector and economy seems to be growing. The number of banks increased from 10 in 1988 (Bawumia, 2010) to 29 in January 2013 (Quartey & Afful-Mensah, 2014) with both Ghanaian and foreign ownership. Also as indicated by Bawumia (2010), the total asset of financial sector increased from 0.31 percent of GDP to 0.66 percent by 2008, which shows an expansion in the financial sector compared to the pre-reform era. He further noticed a significant improvement in some important indicators such as capital adequacy, deposit mobilisation, sectoral credit allocation, and interest rate liberalisation.

For development to take place, especially financial development, institutions are key. The term institution has been used differently by different disciplines, which makes the provision of a single definition for the term very difficult. For instance, in sociology, institutions refer to regulatory, cultural cognitive and normative rules (Scott, 2014). By this, institution refers to how we direct policies; our mind-set and understanding of how the world should influence our choice and decisions; and what we classified as good or bad. In socio-technical transition studies, institution refers to the governance and decision-making

(Turnheim,et al., 2015). According to Turnheim,et al. (2015), institution refers to the role of government, organizations and social-structures in making decisions and their effect on societal processes.

In this study, the concept of institution follows the economic perspective, which defined institutions as rules that assist the market to function efficiently (Acemoglu, Johnson & Robinson, 2005). Acemoglu and Robinson (2010) argued that the region is currently the poorest basically because of the institutions that have developed over the years and they believe geographical and cultural factors only have a little impact. In most economies within the region, property rights are not well established and insecure, markets are not effective and efficient, states and political systems are weak in providing public goods. Acemoglu and Robinson (2010) in their paper on "why Africa is poor" argues that, our institutions are performing badly due to colonization that created a structure of governance and institutions that was extractive instead of developmental in nature. Therefore, there is the need to put in much effort and attention to reforming the political and economic institutions which should be all-inclusive so as to promote growth and development.

Statement of the Problem

The deregulation and liberalization of the financial sector, coupled with advancement in technology use in conveyance of financial services, makes the financial sector and its players more relevant than has ever appeared in history. Studies have shown that most of the developing countries that have made much

improvement in their financial sector also achieve significant improvement in their economic growth and development (Ibrahim & Alagidede, 2017; Valickova, Havranek,& Horvath, 2015; Hermes, & Lensink, 2013; Durusu-Ciftci, Ispir & Yetkiner, 2017).

Researchers have tried over the years to examine the causal relationship between economic growth and financial development. A review of the literature showed four different outcomes. Economists such as Schumpeter (1911), McKinnon (1973), Ibrahim and Alagidede (2017), Ofori-Abebrese, Becker and Diabah (2017), Erataş-Sönmez and Sağlam (2019) and Matadeen and Fauzel (2019) support the view that financial development leads to economic growth through technological innovations and the provision of the needed funds to entrepreneurs or investors. In contrary, economists such as Robinson (1952), Meier and Seers (1984) and recent works by Agbetsiafa (2003) and Odhiambo (2009) hold the view that it is economic growth and expansion in the real sectors that necessitate the need for financial service and hence drive financial development. Also, economists such as Greenwood and Jovanovic (1990), Wood (1993), Luintel and Khan (1999), Abu-Bader and Abu-Qarn (2008), Shahbaz, Khan and Tahir (2013) and Yirdaw (2019) suggested that the relationship between finance and growth is bicausal. Lastly, Lucas (1988) and Stern (1989) postulated that there is no significant relationship between financial development and economic growth hence the importance of financial development is overstretched.

It is clear from the above arguments that no consensus has been reached on the causal relationship between financial development and economic growth. This

notwithstanding most of the recent works favour the finance-led growth hypothesis and with a few others support the bi-causal relationship between financial development and economic growth. This presupposes that financial development is key and necessary if sub-Saharan African countries, wish to achieve economic growth and development. In addition, the endogenous growth model provides further credence to the important role of financial development in the development of a nation (Romer, 1994). Empirically, Levine (2004) asserted that financial development results in efficient information on investment opportunities, diversification of funds and risk management, good corporate governance, efficient mobilization of savings, and exchange of goods and services. This role played by financial development would result in large sums of savings which makes funds available for capital investment and hence growth and development.

Even though from the theoretical and empirical point of view, the importance of financial development in affecting economic growth is undeniable, some of the measures used as proxies for financial development in empirical studies do not truly capture the actual effect of financial development on economic growth. By definition, financial development is a multidimensional process that involves an improvement in depth access, stability and efficiency with which financial institutions and the financial market provide financial services (Cihak, Demirgüç-Kunt Feyen & Levine, 2012). From the definition, it could be seen that financial development is multidimensional. Thus, using a single financial sector measurement such as credit to the private sector as a percentage of GDP or broad money as a percentage of GDP might not actually give the actual impact of financial

development on economic growth. This could result to underestimation or overestimation of the impact of financial development on economic growth over the years. To resolve the problem of using a single financial sector measure for financial development, in 2016, the International Monetary Fund (IMF) introduced a new broad-based index for financial development and this index account for the multidimensional nature of financial development (Svirydzenka, 2016).

According to North (1990), development does not occur in a vacuum, but depends on the prevailing institutional environment. North (1990) was of the view that, for an economy to grow into maturity and translate into development, economic agents must be assured the laws of the land will protect property right and enforce contracts. This provides the basis for savers, consumers and investors to put their trust into the market and make rational decision for the benefit of the entire economy. Once there are strong institutions to enforce contracts, the cost of borrowing and lending reduce since moral hazard and information asymmetry problems are minimized. This will lead to an increase in investment, paving way for growth and development. In view of this, it could be speculated that financial development in sub-Saharan African countries might depend on the cultural, political and the economic institutional factors that prevail over time to affect growth. Although the cultural factors do not change frequently, countries can reform their judicial system by emphasizing the rights of investors, providing more efficient contract enforcement and by creating well functioning institutions that will improve financial development.

Studies such as Ngongang (2015), Effiong (2016), Berhane (2018), and Ibrahim and Alagidede (2018) analysed the effect of financial developemnt on economic growth within Sub-Saharan Africa while Effiong (2016), Berhane (2018) further examines the moderating role of institutions on financial development to affect economic. All these studies came to the conclusion that financial development affect economic positively but major weakness in their analyses is the measurements of financial development, data span and cross-sectional units, and the estimation technique. For example, Effiong (2016) conducted a study on 21 Sub-Saharan African countries from 1986 to 2010, using a panel analysis to investigate the effect of financial development on economic growth and institution as a moderating variable. The result showed that once institutions are accounted for in the model, financial development cease to have impact on growth within the region. This evidence suggested that the institutional environment within the region is not playing its mediating role as proposed by the institutional theory. However, their findings could not be generalized in that the 21 countries used for the study is not a fair representation of SSA region. The second critique to the result is that, the variables used as indicators for financial development only give a partial measurement for financial development. This is because financial development is a multidimensional phenomenon, therefore findings and recommendations made using a single financial sector indicators should be taken with caution since it does not fully account for the entire impact of financial development within the SSA region.

Likewise, Berhane (2018) in an attempt to solve the problem associated with the proxy used for financial development, used a broad-based financial development index developed by IMF to assess the short and long-run relationship between financial development, globalization and economic growth in 40 African countries form 1980 to 2014. Using Pedroni (1999, 2004) and Westerlund (2007) co-integration test, the result demeonstrated that, there exists a long-run relationship between economic growth, financial development institutional quality and globalization. Based on the dynamic commonly correlated effect estimator, the result suggested that financial development and institutional quality individually are positive and significant in affecting growth in the long-run. This study raised three main critiques. First, the researcher makes it clear that the study expands between 1980 to 2014. And the institutional variables used for the study were drawn from World Governance Indicators (WGI) of the World Bank, a data set that was started only in 1996. This presupposes that there were so many missing data points that might affect the result. Secondly, the study used an average of the institutional variable, which may be estimated using different techniques and under different assumption. Hence, the result cannot be trusted. Finally, for a result with an interaction term to be valid, the study must include both variables with their interactive term into the model but the researcher failed to do so and this may impact the result. These reasons justifies the need to conduct a new study to analyze the effect of financial development on economic growth and the moderating role institutions in this relationship correcting for financial development measurement, data problems and methodological problems.

Based on Interational Monetary Fund (IMF) classification of financial development, there are six main pillars of financial development namely, financial markets depth, financial institutions depth, financial markets access, financial institutions access, financial markets efficiency and financial institutions efficiency. These pillars were regrouped into two aspects of financial developemnt which include; financail institutions development and financial markets development. Since resources are very scarce and must be put to efficient use, it is also important to know the aspect of the financial development that is affecting growth in a desired manner within the sub-Saharan Africa region so that policies and resources could be devoted towards that sector for higher growth and development.

This study adopts the broad-based index for financial development developed by IMF in 2016 and the two main single financial sector indicators to assess and compare the effect of financial development on economic growth in sub-Saharan Africa (SSA). This will help ascertain whether there is underestimation or overestimation in the measurement of financial development over the years. Also, the study seeks to examine the aspect of financial development (financial institutions development or financial market development) that is significantly affecting economic growth within the SSA region. Lastly, the study took a step

further to examine how the institutional environment moderate the effects of financial development on economic growth within the SSA region.

Purpose of the Study

The purpose of this study is to investigate the effect of financial development on economic growth using the broad-based index of financial development and explore how the institutional environment moderate this effect in sub- Saharan Africa over the period 2000 to 2017. Specifically, the study seeks to:

1. compare the effect of financial development on economic growth using a broad-based index of financial development and other narrow- based financial indicators in sub-Saharan Africa.

2. examine the relative importance of financial institutions development and financial market development in affecting economic growth within the SSA region.

3. examine how the institutional environment moderates the effects of financial development on economic growth within the region using the broad-based index of financial development.

Research Hypotheses and Question

To achieve the objectives of the study, research hypotheses were formulated for objectives one and three while a research question was formulated for objective two.

Research hypotheses

1. H_0: Financial development does not affect economic growth using the different financial development indicators in sub-Saharan Africa.

H_1: Financial development does affect economic growth using the different financial development indicators in sub- Saharan Africa.

2. H_0: Institutional factors do not moderate the effect of financial development on economic growth using the broad-based index of financial development within the sub- Saharan Africa.

H_1: Institutional factors moderate the effect of financial development on economic growth using the broad-based index of financial development within the sub-Saharan African region?

Research question

- What is the relative importance of financial institutions development and financial market development in affecting economic growth within the SSA region?

Significance of the Study

The role of financial resources in the development of a nation cannot be underemphasis; this provides the justification for us to know the actual contribution the financial sector is making toward the growth of the sub-Saharan African region. This contributes to the body of empirical literature because it does not only confirm

the importance of financial development as proved by earlier researches but also establish the basis that, over the years the actual contribution of the financial sector to growth has been underestimated using the single financial sector indicators. This study provides the basis for further studies on the relationship between financial development and growth within the region.

This research is relevant to policy-makers because the findings provides policy direction anytime they wish to stimulate the financial sectors to affect growth because it provides empirical prove to the sector that would respond appropriately to achieve the desired goal. Again, for policy decision, it reinstates the importance of strengthening the institutional environment if the countries within the region wish to develop at a faster speed.

Delimitations

This study examines the effect of financial development on economic growth, the aspect of financial development contributing significantly to economic growth and how the institutional environment moderates this effect in sub-Saharan Africa over the period 2000 to 2017. Out of the 48 sub-Saharan Africa countries, 36 of them were used for the analysis reason purely attributed to data availability over the study period stated above.

Limitations

The main limitation of the study is data unavailability for some of the countries within the Sub- Saharan region. This made us to drop 12 countries from the analysis. The data span also limits us from employing other techniques such as

ARDL panel to serve as robust checking mechanism. Secondly, the International Monetary Fund (IMF) data was not able to capture some of forms of financial payment such as mobile banking, credit and direct debit as well as financial sector stability. Despite these limitations, the results and the conclusions of the study are valid and consistent.

Organization of the Study

This study has five chapters. Chapter one, serves as the introduction of the study and is made up of the background to the study, statement of the problem, the purpose of the study, objectives, hypotheses and research questions of the study, significance of the study, delimitations, limitations and organization of the study. Chapter two presents the review of both theoretical and empirical literature related to the subject of financial development, institutions and economic growth. In Chapter three, the research methodology used for the analysis is discussed. The results and discussions are presented in Chapter four with the outcome discussed in the context of literature. Chapter five summarized the key findings, conclusion, recommendations and areas for further research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter presents a review of both theoretical and empirical literature related to the subject of financial development, institutions and economic growth. The chapter first looked at the theoretical review and was followed up by the empirical review. With regards to the theoretical review, theories on growth, financial development and institutions were reviewed from which the appropriate theories that fit the study were selected. In the empirical section of the literature review, the study reviewed literature on economic growth and financial development, followed by works on economic growth and institutions. The chapter also looked at studies on financial development and institutions, and lastly works done on financial development, economic growth and institutions.

Theoretical Review

In this section, discussions were made on various theories related to economic growth, financial development and institutions. Theories on economic growth were reviewed first followed by theories on the financial sector and institutional theory.

Growth theories

The study reviewed four main theories of growth, which are classical growth theory, Harrod-Domar growth model, neoclassical growth theory and endogenous growth theory.

Classical growth theory

The main proponents of the classical growth theory are Adams Smith, David Ricardo and Thomas Malthus. This theory focused on explaining factors that determine growth over time. Despite few disagreements, they conclude that growth is not fully determined by only the inputs of production thus land, capital, labour and technology but also, social, political and economic structures also have a major part to play (Ucak, 2015). They went further to explain that for any economy to achieve its desired growth, the surplus value from production must be invested. They point to the fact that not all economic activities produce surplus value (Liu, 2011). Smith(1776) argues that a nation needs to pay attention to division of labour and international trade to fully exploit the optimal benefit of production for long term growth of the economy.

Harrod-Domar growth model

This version of growth model was developed by Harrod (1939) and Domar (1946) who postulated that, the development of a nation largely depends on its savings and investment. Harrod and Domar hold the view that, anytime an economy increase its level savings, funds are made available for investment and the increase in investment does not only increase aggregate demand or national income but also aggregate supply which reenforce further investment. It is expected that the initial

increase in investment should boost output, resulting in an increase in income. When the additional income is spent, aggregate demand further increases. If the multiplier effect is strong enough, the aggregate demand increases in the long term. Both Harrod (1939) and Domar (1946) strongly argued that economic growth largely depends on the marginal savings rate and capital-output ratio hence capital accumulation is a necessary condition for growth. To this effect, they recommended interventions by the government to supplement the deficit capital and also macroeconomic environment management to promote growth.

Neoclassical growth theory

One of the main proponents of the neoclassical growth model is Robert Solow and he was of the view that growth does come from adding more labour and capital but only temporal because the marginal product of capital will start to decline shortly as the economy moves to long-run growth path (Solow, 1956). At steady-state labour, capital and output will all grow at the same rate. According to Solow (1956), the difference between countries in terms of growth is explained by technological differences. The model treats the improvement in growth as exogenous and independent of capital investment.

Endogenous growth theory / the new growth theory

The endogenous growth theory was developed by Paul M. Romer (1994). He postulated that, economic growth is generated from forces within the system or the economy hence an internal phenomenon as opposed to the neoclassical view. Increase in productivity and growth is directly the end product of innovation,

improvement in human capital and investment capital rather than unknown external forces. Economists who support the endogenous growth point of view, advocate for the state and private institutions to support innovations and provide incentives and secured property to encourage innovation through setting up research and development fund.

The growth model selected for the study

This study adopts the endogenous growth theory as the theoretical underpinning of the study due to the failures in the predictive power of growth in the classical growth model, Harrod-Domar growth model and the neoclassical growth model. For example, while the neoclassical growth model attribute growth to an external force, the endogenous growth model emphasises the fact that growth in the end is caused by creativity rather than only capital accumulation and can be internally sourced. Endogenous growth model emphasises the need for investment in research and innovations, physical and human capital which are necessary conditions for growth but where does the funds require for such investments comes from, this provides the justification for the importance of the financial sector into current and future growth of an economy.

A well-developed financial system promote growth through technological advancement and this proves the fact that financial development has both growth and level effects. Financial development leads economic growth, first by increasing the ratio of savings that can transform into investment hence raise the level of capital accumulation which explains the level effect of growth just as other growth models. Secondly, financial development promotes technological progress by

improving capital efficiency through evaluation of projects, making funds available for such projects and monitoring to ensure that the funds are put to right use and risk are diversified.

Financial Development Theories

The study reviewed the following theories to provide better understanding to what financial development means from a theoretical perspective. The theories reviewed include McKinnon-Shaw's financial theory and asymmetric information model.

Mckinnon-Shaw's financial theory

Mckinnon (1973) and Shaw (1973) financial theory on financial depressions was developed separately but then, the central view of the two proponents were that financial repression negatively affects the growth of an economy since it does not make funds available for investment. Financial repression refers to a situation where interest ceiling, higher reserve requirements, quantitative credit controls and selective credit allocation programmes, barriers of entry into financial sectors and other activities are used by governments to channel funds to themselves. When governments in most developing countries are unable to raise the revenue needed for the management of their economy, they turns to implement policies of this nature to raise funds to finance budget deficits. The advantages associated with eliminating financial repression outway the benefit of keeping them; therefore, if it is impossible to eliminate financial repression, efforts must be made by governments to reduce it (Mckinnon-Shaw) argued.

In addition, McKinnon (1973) and Shaw (1973) stated that, setting an interest rate ceiling leads to a reduction in savings and capital accumulation which is a necessary condition for growth. Mckinnon asserted financial repression may result in financial dualism where the sector favoured by the policy enters into capital-intensive technologies while the sector at disadvantage gets involve in only high yielding projects that has short maturity. Due to the selective credit allocation, state-owned enterprises with low yielding projects are favoured and the enterprises with a high yielding project may not have access to the needed capital which may affect the long-run growth of an economy. When governments use interest rate ceiling as a policy to reduce lending rate and promote investment, in the face of inflation as the case of most developing countries, the financial institutions use non-market approaches to clear the market, the evidence is seen in terms long ques, nepotism and corruption.

Due to the disadvantages listed above, Mckinnon-Shaw advocate for financial liberalization, especially liberalization of the interest rate to stimulate savings which may result in investment, hence higher growth and development.

Asymmetric information model

This model was developed by Montiel (2003) with the view that, information generation in the financial market always suffer from information asymmetry and high cost of information. The model contends that the existence of imperfect information and moral hazard or opportunistic behaviour makes financial intermediation costly to operate since the players in the market need to overcome adverse selection and principal-agent-problems. One of the most important reasons

for the existence of financial intermediary is to minimize transaction cost and risk. The existence of information asymmetry and moral hazard makes the financial sector devoid of optimal functioning to finance investment and this may result to a bank run, fraud, inefficient credit and capital allocation. This model maintains that even though financial development has a positive impact on growth, information asymmetry might not allow an economy to enjoy the benefit of financial development. And so, policies must be put in place to deal with any set back that may pop up. The problem of asymmetry information is a prove that institutions are important in dealing with issues of contract enforcement, moral hazard, adverse selection and principal-agent-problem.

Institutional theory

In this study, the concept of institution follows the economic perspective which defined institutions as rules that assist the market to function efficiently (Acemoglu, Johnson & Robinson, 2005). The theory of institution implies that the long-run growth differences between economies are as a result of institutional differences (Acemoglu, et al., 2005). An institution can be divided into two main sub-groups, namely; informal and formal institutions. Informal institutions are norms, beliefs, culture and customs that influence the behaviour of agents in the economic market. Formal institutions are rules set up and documented to guide, regulate and control the behaviour of economic agents (Acemoglu et al., 2005). There are two main types of formal institutions and they are political institutions and economic institution. Political institutions refer to institutions that shape the policy-making decisions of decision-makers by setting a limitation on choices

available to them, normally referred to as constraints (Acemoglu et al., 2005). Economic institutions are institutions that perform functions such as property right protection, granting a permit to an organization and economic co-operations and oversight economic transactions ((Acemoglu et al., 2005).

In most empirical works, economic institutions normally overlap with governance since it is sometimes very difficult to differentiate between the two; hence, in this study, economic institution and governance are considered to be synonyms. Political institutions normally determine the scope and breadth of economic institutions (Acemoglu & Robinson, 2010). The political institution in most cases, highly determine the growth and development of various economies. This is because the group or individuals in power determine which economic institutions to set up, their scope and power (Acemoglu et al., 2005). Acemoglu et al. (2005) noted that changes in the institutional environment were the main variable that explained the growth difference between Western Europe, Eastern Europe and Africa. They maintained that when political power shifts from autocracy to monarchy to democracy, there is reformation of economic institutions; and since economic agents entrust their property right to the economic institutions, which are likely to remove barriers on trade, establish and protect property rights leading to sustainable economic growth. As economic agents have trust in the economic institutions to protect their property right, they turn to invest more in both capital and innovations, which lead to sustainable economic growth. However, while countries that have extractive institutions find it very difficult to develop,

those with progressive institutions are always on the path of greater development (Chung, 2014).

This provides a good explanation to the expected relationship between financial development, institution and economic growth. A positive relationship between growth and institution, implies that institutions are playing their expected roles to affect growth or the vice versa. It is possible for the relationship between growth and institution to be positive. However, the moderating role of institution between financial development and growth might take a different sign depending on the impact, the institution is having on the financial sector to affect economic growth.

Empirical Review

The study reviewed literature on economic growth and financial development, followed by works of economic growth and institutions, the study also looked at studies on financial development and institutions, and lastly works done on financial development, economic growth and institutions.

Financial development and economic growth

A study was conducted by Rosalia (2013) to analyze the impact of financial development on economic growth for 18 Latin America countries from 1980 to 2011 using broad money and domestic credit as a measure of financial development with fixed effect estimation technique, there was no evidence of impact of financial development on economic growth within the Latin American region. After correcting for endogeneity, there was a piece of evidence in support of growth

impacting financial development. This result might not reflect the actual impact of financial development in the region. This is because the use of those indicators gives a partial analysis of the actual impact of financial development.

A study was carried out by Adu, Marbuah. and Mensah (2013) to examine the long-run relationship between financial development and economic growth in Ghana from 1961 to 2010 using Autoregressive Distributed Lag (ARDL). The outcome of the study showed that the effect of financial development on economic growth depends largely on the proxy used as a measure for financial development. They therefore urged researchers to be very careful in selecting an indicator as a measurement for financial development.

Eryılmaz, Bakır and Mercan (2015) investigated the role of financial development in explaining growth in 23 Organisations for Economic Co-operation and Development (OECD) countries using annual panel data from 1980 to 2012. Using random effect estimation technique, they showed that financial development played a major role in the economic development of the countries within the region. They further recommended that countries within the region and their policymakers should formulate policies that will affect the financial sector positively to prove economic growth within the region.

Ngongang (2015) examined the relationship between financial development and economic growth using data from 21 sub-Saharan African countries, based on a systems GMM estimation and found that financial development affect growth positively. The proxies used as a measure for financial development were banking

credit to the private sector relative to GDP and stock market capitalization relative to GDP per head. These proxies did not capture the full information on financial development within the region and at the same time using less than half of the region for analysis makes it less representative to justify for the entire region.

Bist (2018) analyzed the long-run effect of financial development on economic growth on 16 low-income countries from 1995 to 2014. Using fully modified OLS and a Pedroni panel cointegration analyses, the result showed that financial development has a positive effect on economic growth. For robustness check, the researcher conducted a time series analysis for the selected countries and the result proved similar. The indicator used for financial development was credited to the private sector, which is a limited measure of financial development and this may not capture the entire impact of financial development on growth.

Ibrahim & Alagidede (2018) examined the growth effect that will result if a country experiences growth in its financial and real sector using data of 29 sub-Saharan African countries. And based on the system generalized methods of moments (GMM). It was revealed that financial development support growth but the extent to which financial development affect growth depends on the simultaneous growth from the real and financial sector. They also noted that excessive growth in credit may affect growth by posing the risk of unsustainable investment and high-level consumption leading to inflation. This result still points back to the need for effective and efficient institutions to manage the feedback effect from financial development.

Prowd (2018) studied the relationship between financial development and economic growth in Liberia from 1960 to 2016 using Autoregressive Distributed Lag (ARDL) and error correction model (ECM). The result indicated that financial development affects growth in the long-run but it is insignificant in the shortrun. The study therefore posits that policymakers must pay attention to policies and reforms that will make financial development relevant in the short run just as the long-run. The result might not reflect the entirety of financial development on growth since the researcher used only credit to the private sector as a measure for financial development. The indicator lacks the ability to capture the multidimensional nature of financial development.

Yirdaw (2019) analyzed the effect of banking and insurance sector on economic growth in Ethiopia from 1980 to 2018 using the Vector Error Correction Model (VECM) and found that, banking and insurance sector positively influence growth in Ethiopia both in the long run and the short-run. However, the study concluded that the financial sector is still poorly developed and so much effort must be put in to promote the growth of the sector by policymakers.

Economic growth and institutions

The role of institutions in economic growth was investigated by Asghar, Qureshi and Nadeem (2015) in 13 developing countries of Asia form 1990 to 2013. Using panel ARDL, the result indicated that institutional quality has a positive effect on growth, hence the countries within the region of study should continue to improve their institutional environment. However, whether or not their conclusion will hold for sub- Saharan Africa is brain cracking.

Akinlo (2016) studied the relationship between economic growth and institutions in 32 sub-Saharan countries from 1996 to 2013 using pooled OLS and dynamic GMM model estimation technique. The results point to the fact that institutions, physical capital and interest rate within the region have negative impact on economic growth while other controlled variables such as human capital and money supply positively affect growth in the region. Even though the estimation technique used is robust, the conclusion might be different if the study employs other institutional variables.

Ferreira and Ferreira (2016) investigated the impact of institutional quality on 48 sub-Saharan countries' ability to attract foreign direct investment inflows in 2011 using non-linear Tobit model. The results demonstrated that the quality of the institutional environment has a significant positive effect on foreign direct investment inflows into the region. The question for further enquiry is whether institutions in Sub-Saharan African region have the same positive impact on economic growth?

Gori, Kun and Dolfsma (2018) conducted a study to investigate the alternatives, managers would like to go for in the face of weak institutional environment in 35 sub-Saharan African countries from 2006 and 2015 using a sample of 17,757 observations. The results showed that, managers living in high-quality environment spend much time in dealing with regulations and protocols. Knowing that this reduces productivity, they resort informal payments also known as bribery and corruption to navigate the system. This therefore necessitates the

need to work hard on institutions in the sub-region by making them less time consuming.

Financial development and institutions

Law and Azman-Saini (2008), using both banking and stock market indicators, explore the influence of institutional quality on financial development and found out that, some institutional factors matter more than others. Specifically, rule of law, political stability and government effectiveness are very important contributors to financial development. The findings further indicated that regulatory quality has a significant effect on financial development if it exceeds a certain threshold within low-income countries. This demonstrates that to achieve financial development, there is the need for SSA countries to develop their institutional environment to play that mediating role.

Gazdar and Cherif (2014) assessed the effect of institutions on financial development in 18 Middle East and North African (MENA) countries from 1984 to 2007. Using a composite index constructed to represent institutions, the result from the panel and IV estimation shows that institutional quality matters more, when it comes to the financial institutions compared to the financial market. The findings showed that using the institutional variables individually the impact on financial development varies. For example, law and order has much impact on the financial institution's development while corruption and investment profile have little impact. The investment profile is more relevant in determining the development in the stock market. This demonstrates that, when measuring the

impact of institution on any economic variable, researchers should first consider their impact individually before their composite effect.

A working Financial sector is required for effective allocation of capital resources. Cherif and Dreger (2016) examined the role of institutions on financial development in the Middle East and North African (MENA) regions using panel econometric technique with data ranging from 1990 to 2007. Using law and order, bureaucratic quality and corruption as institutional variables, The findings proved that institutional factors appear to be very important even after taking into account the macroeconomic variables and fixed effects. Corruption was very significant in explaining the banking sector development while both law and order, and corruption played a critical role in the stock market. They recommend for better law enforcement and anti-corruption practices to improve financial development.

The study conducted by Fagbemi and Ajibike (2018) to analyse the short and long-run effect of institutional quality on financial development in Nigeria from 1984 to 2015 using an Auto-Regressive Distributed Lag (ARDL) bounds test approach to cointegration. Using two different indicators for financial development (namely credit to the private sector and broad money), the result showed that institutional quality does not affect financial development both in the short and long run. This poses two questions; either the institutions in Nigeria are not strong enough in playing their role or the financial system is not developed enough. The former may be true because institutions are normally not significant in affecting financial development in a poor institutional environment.

Financial development, economic growth and institutions

Effiong (2016) conducted a study on 21 Sub-Saharan African countries from 1986 to 2010, using a panel analysis to investigate the effect of financial development on economic growth and institution as a moderating variable. Using pooled OLS, difference GMM and system GMM, the result showed that once institutions are accounted for in the model, financial development cease to have impact on growth within the region. This evidence suggested that the institutional environment within the region is not playing its mediating role as proposed by the institutional theory. However, their findings could not be generalized in that the 21 countries used for the study is not a fair representation of SSA region. The second critique to the result is that, the variables used as indicators for financial development only give a partial measurement for financial development. This is because financial development is a multidimensional phenomenon, therefore findings and recommendations made using a single financial sector indicators should be taken with caution since it does not fully account for the entire impact of financial development within the SSA region.

Kacho and Dahmardeh (2017) studied the effect of financial development and institutional quality on economic growth within the Organization for Economic Cooperation and Development Countries from 2002 to 2014, using generalized moment method (GMM). Using the credit to the private sector as an indicator for financial development, corruption control, political stability and lack of violence, opinion and response, quality of provisions and legality, and administrative efficiency are the measurement for institutional development. The result showed

that financial development positively affects growth. The interaction between institutions and financial development is also significant. This demonstates the importance of institutions in influencing financial development in affecting growth.

Studying the effect of financial development on economic growth with institution playing as a mediating was conducted by Oussama, Ahmed and Fatma (2017) for Tunisia from the period 1980 to 2014 using s system GMM. Using economic freedom as a measure for institutions, the result indicates that institutions play a major role in economic growth. This is because they were positive and significant in affecting growth and the interaction term between financial development and growth. Despite the fact that institutions influence financial development to affect growth posistively as suggested by theory, using system GMM to analyse a time series data makes the result quetionable and less trustworthy.

Futhermore, Berhane (2018) in an attempt to solve the problem associated with the proxy used for financial development, used a broad-based financial development index developed by IMF to assess the short and long-run relationship between financial development, globalization and economic growth in 40 African countries form 1980 to 2014. Using Pedroni (1999, 2004) and Westerlund (2007) co-integration test, the result demeonstrated that, there exists a long-run relationship between economic growth, financial development institutional quality and globalization. Based on the dynamic commonly correlated effect estimator, the result suggested that financial development and institutional quality individually are positive and significant in affecting growth in the long-run. This study raised

three main critiques. First, the researcher makes it clear that the study expands between 1980 to 2014. And the institutional variables used for the study were drawn from World Governance Indicators (WGI) of the World Bank, a data set that was started only in 1996. This presupposes that there were so many missing data points that might affect the result. Secondly, the study used an average of the institutional variable, which may be estimated using different techniques and under different assumption. Hence, the result cannot be trusted. Finally, for a result with an interaction term to be valid, the study must include both variables with their interactive term into the model but the researcher failed to do so and this may impact the result.

Hamzah., Abdullah and Hamid (2019) did a literature review on the effect of financial development on economic growth and how the institutions interact with financial development to affect economic growth. The study discovered that, most of the researchers used single financial sector indicators from the banking sector, stock market and openness of trade to represent financial development. This raises an issue of concern since financial development is now multidimnesional in nature. They also found out that any interaction of the financial development indicators with institutional quality showed significant results but the magnitude of the effect depends largley on the level of institutional development. This necessitates the need to access the role institutions are playing to mediate the role of financial development on economic growth.

Chapter Summary

In summary, this chapter explored both the theoretical and the empirical literature on economic growth, financial development and institutions to put the present study in perspective and at the frontier of knowledge. From the theoretical models on growth, endogenous model was selected since it gives both level and growth effect importance of financial development. Again, under the theoretical literature, MacKinnon-Shaw model and asymmetric information theories were reviewed explaining the importance of financial sector as having the ability to overcome some weaknesses. Some of these weaknesses include moral hazard and adverse selection, which individuals will find it difficult on their own to overcome. The intuitional theory reviewed gave much importance to institutions on their own to affect growth and the mediating role played by institution to enable financial development to affect growth. The state of the art was also considered by looking at empirical works on the subject and some of the gaps identified are the measurement of financial development and growth, the representativeness of the samples used in the studies and the methodological weakness in some of the studies reviewed.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter presents the various procedures followed to accomplish the research objectives. It begins with the research design and approach (quantitative and qualitative). This chapter also consists of a discussion of the empirical model specification, type and sources of data with their descriptions. The estimation technique and diagnostic tests that were used are also presented.

The Research Design and Approach

This study follows the positivist research approach and quantitative research design specifically the longitudinal research design to achieve the research objectives. Burns and Grove (1993) explained quantitative research as an approach that is objective, efficient and follows a systematic procedure to describe, examine and test relationships between and among variables. According to the positivist paradigm of research, there is already existing truth that can only be known and measured scientifically and only through objectivity. This makes the result and outcome reliable, replicable, valid and generalizable. This study resorts to the use of this approach to give the results reliability, replicability and subjectivity to further empirical tests and verification.

Model Specification

In this study, the endogenous growth model serves as the theoretical basis for studying the determinants of economic growth within the SSA region. The study made use of Cobb-Douglas production for an aggregate economy, which was

augmented to include financial development. This is because labour-augmenting technology (A) is not the only factor that leads to technological improvement but also financial development (Rahman, Shahbaz & Farooq, 2015; Omri, Daly, Rault & Chaibi, 2015). From the theoretical point of view, an improvement in financial development promotes economic growth by increasing the ratio of saving in an economy and transforming it to investment and capital accumulation. Hence, economic growth is referred to as level growth effect in development economics. Secondly, financial development leads to an improvement in capital efficiency by allocating resources to high marginal efficient projects through evaluation of investment projects, spreading of risk, promotion of technological innovations and transfer of technological knowledge, which is known as growth effect in development economics.

To examine the relationship between financial development and economic growth, the study made use of production function with constant return to scale and productivity growth that is fully labour-augmenting (Harrod neutral) for each country, i and t. Given as:

$$Y_{it} = K_{it}^{\alpha}(A_{it}L_{it})^{1-\alpha} \quad (1)$$

$$L_{it} = L_{i0}e^{n_{it}} \quad (2)$$

$$A_{it} = A_{i0}e^{g_{it}+fd_{it}\theta_i}e^{u_{it}} \quad (3)$$

where, Y_{it} is real gross domestic product (GDP) in each country, K_{it} is capital, representing both human and physical capital, L_{it} is the labour force available and

A_{it} is a labour-augmenting factors for assessing the level of technology and efficiency in each country at a point in time. n_{it} and g_{it} are the labour force growth rate and the rate of technological progress in each country at a point in time respectively. A_{i0} is time-invariant country specific technology. fd_{it} is financial development, which can affect the level of technological progress and its efficiency in each country and θ_i is the coefficient of financial development.

Writing equation (1) in an intensive form gives: $y_{it} = k_{it}^{\alpha}(A_{it})^{1-\alpha}$ (4)

Taking the log of both sides of the equation (4) gives:

$$lny_{it} = \alpha lnk + (1-\alpha)lnA_{it} \quad (5)$$

Taking the log transformation of equation (3) yields:

$$lnA_{it} = lnA_{i0} + g_{it} + fd_{it} + u_{it} \quad (6)$$

Substituting equation (6) into equation (5) gives:

$$lny_{it} = \alpha lnk + lnA_{i0} + (1-\alpha)g_{it} + (1-\alpha)fd_{it} + u_{it} \quad (7)$$

Let z_{it} represent other control variable that affect economic growth and substituting x_{it} into equation (7) yields:

$$lny_{it} = \alpha lnk + lnA_{i0} + (1-\alpha)g_{it} + (1-\alpha)fd_{it} + x_{it} + u_{it} \quad (8)$$

Equation (8) indicates that economic growth is a function of growth in capital stock (k) and other determinants such as technological progress, financial development

and improvement efficiency of labour. Financial development serves as sources of technological progress and efficiency within an economy.

Equation (8) in the functional form gives Y_{it} = f(K, FD, X), where K is capital (human and physical capital), FD is financial development. Based on the theoretical review, the study follows the endogenous model, which postulates that financial development leads to both level and growth effects.

From the empirical literature, the specification of our empirical model follows Effiong (2016), Ofori-Abebrese, Becker and Diabah (2017), Oussama et al., (2017), Ibrahim and Alagidede (2018) and Bist (2018). The empirical model is given as:

$$lnRGDP_{i,t} = \beta_0 + \beta_1 lnRGDP_{i,t-1} + \beta_2 FD_{i,t} + \beta_3 \mathbf{X}_{i,t} + \eta_i + \mu_t + \varepsilon_{i,t} \quad i = 1, 2, 3, \ldots, 36; \ t = 1, 2, \ldots, 18 \quad \ldots\ldots (9)$$

Where lnRGDP; represents log Real Gross Domestic Product (RGDP), which is proxy for economic growth. FD, represents all the indicators for financial development used in this study, which include; Credit to private sector as a percentage of GDP, Broad Money as a percentage of GDP, and the Broad-Base index for measuring financial development by IMF. X is a vector of control variables. The control variables include GFCF, which is proxy for gross fixed capital formation; POP is the annual Growth Rate of population; TOT indicates Trade Openness as percentage of GDP, and GS represents Government expenditure as percentage of GDP, μ_t is dummy for time-specific effects and η_i is country-

specific unobserved effect and $\varepsilon_{i,t}$ idiosyncratic error term. The subscripts *t* and *i* denote country and time period respectively.

To achieve the second objective, which examines the relative importance of financial institutions development and financial market development on economic growth and development in general within the SSA region, the study made use of the multi-dimensional index developed by IMF. The study decomposes financial development into two-component based on Global Financial Development Database (GFDB) and IMF classification. This gives rise to equation (10) as stated below:

$$lnRGDP_{i,t} = \beta_0 + \beta_1 lnRGDP_{i,t-1} + \beta_2 FM_{i,t} + \beta_3 FI_{i,t} + \beta_4 \mathbf{X}_{i,t} + \eta_i + \mu_t + \varepsilon_{i,t}$$

i =1, 2, 3,…, 36; t =1, 2,…,18 …….(10)

Where FM is the financial market indicator and FI is financial institution indicator. All other variables remain as defined earlier.

To achieve objective three that seeks to examine the moderating role of institutional environment on financial development to affect economic growth; the researcher specifies equation (11) as shown below;

$$lnRGDP_{i,t} = \beta_0 + \beta_1 lnRGDP_{i,t-1} + \beta_2 FD_{i,t} + \beta_3 \mathbf{X}_{i,t} + \beta_4 INS_{i,t} + \beta_5 (FD_{i,t} * INS_{i,t}) + \eta_i + \mu_t + \varepsilon_{i,t}$$

i =1, 2, 3,…,36; t =1, 2,…,18 …….. (11)

Where institutions are proxied using voice and accountability, control of corruption, government effectiveness, rule of law, regulatory quality, polity2 and also overall index to represent institution generated using principal component

analysis, which are standard measures for institutions in the growth finance literature.

INS represents various institutional variables and all other variables remain as explained earlier, β_0 represents the intercept term. $\beta_1, \beta_2, \beta_3, \ \beta_4 \ and \ \beta_5,$ are the parameters of interest and ε_t is the error term in the model.

Data Source and Expected Signs

The study made use of panel annual data for the period of 2000 to 2017. The dataset was sourced from the World Development Indicators (WDI) of the World Bank, Polity IV Project, and World Governance Indicators (WGI) of the World Bank. Due to the unavailability of data, some countries within the Sub-Saharan African region were selected for this study. They include Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Cote d'Ivoire, Kingdom of Eswatini, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Tanzania, Togo and Uganda. In all, there were 36 countries with data spanning for 18 years. Except for real Gross Domestic Product, population and the institutional variables, all the other variables are expressed as a percentage of GDP.

With respect to the theoretical and empirical literature reviewed, the variables used in the study are presented in Table 1

Table 1: Variables, data source and expected signs

Variable	Description	Source	Expected sign
RGDP	Real Gross Domestic Product	WDI	
DCPS	Domestic credit to the private sector as a % GDP	WDI	Positive
BMGDP	Broad money(M2+) as % of GDP	WDI	Positive
NFDI	New broad-base indicator for financial development.	IMF	Positive
CON	Control of corruption	WGI	Positive
VOICE	Voice and accountability	WGI	Positive
RULE	Rule of law	WGI	Positive
REG	Regulatory quality	WGI	Positive
GOV	Government effectiveness	WGI	Positive
Polity2	Polity2 score	Polity IV Project.	Positive
GFCF	Gross fixed capital formation as a % GDP	WDI	Positive
TOT	openness to international trade, defined as the sum of imports and exports as a % of GDP	WDI	Positive/ negative
POP	the annual growth rate of population	WDI	Positive
FDI	FDI is the net inflows of investment as a % of GDP	WDI	Positive / negative
GS	Government final consumption as a % of GDP	WDI	Positive

Source: Author's compilation, 2020

Detail explanation of the chosen variables

Economic Growth (RGDP): This study used Real Gross Domestic Product as a measure of economic growth, which is consistent with Herzer (2012), Bist (2018) and Yirdaw (2019). Real Gross Domestic Product refers to the inflation-adjusted value of all goods and services produced within a given year. Real GDP is

expressed mathematically as: nominal GDP divided by GDP deflator (inflation). Real Gross Domestic Product (RGDP) is the proxy for economic growth used in this study and it serves as the dependent variable for our analysis.

Financial Development Indicators: For the purpose of this study, two indicators mostly used in the growth-finance literature were used as measures of financial development in comparison to the broad-based indicator developed by IMF, which is able to take into consideration the multidimensional nature of financial development. The first indicator mostly used in the literature is Credit to Private sectors as a percentage of GDP (DCPS). It is defined as all financial resources made available to the private sector by financial institutions. For example, loans, trade credits, non-equity securities and others that serve as a claim for payment. Some of the studies that made use of Credit to Private sectors as a percentage of GDP as a measure of financial development include Cherif and Dreger (2016), Prowd (2018), Bist (2018), Ibrahim and Alagidede (2018) and Fagbemi and Ajibike (2018). The second indicator used as a proxy for financial development is Broad money as a percentage of GDP (BMGDP). It measures the level of financial depth of a nation by considering all financial intermediations across the country and all financial institutions including the central bank, deposit-taking financial institutions and other financial institutions (Effiong, 2016; Ofori-Abebrese et al., 2017; Fagbemi, & Ajibike, 2018). All the indicators explained above are mostly known in literature to have a positive effect on economic growth (Effiong, 2016; Kacho & Dahmardeh, 2017; Bist, 2018).

The final measure of financial development is the new broad-base (NFDI) measure of financial development developed by IMF in 2016. This new index is one of the best measures of financial development because it takes into consideration the multidimensional nature of financial development compared to the conventional ones used in literature as discussed earlier (Svirydzenka, 2016; Berhane, 2018). It is a six-based index that measures the financial institution and financial market depth, access and efficiency. These six indexes were regrouped into two forming the financial institution index and financial market index, which serve as a measure for financial institutions and financial market development. The final stage is where the two indexes are put together to represent the multidimensional measure of financial development. The financial development index ranges from zero (0) to one (1), where zero represent the lowest financial development and one represent the highest level of financial development. This applies to all the sub-indexes. This index is expected to have a positive relationship with growth and development earlier (Svirydzenka, 2016; Berhane, 2018).

Indicators used as proxy for the Institutional Variable in the Model

Voice and Accountability: It refers to perception of how citizens of a country are free and allowed to take active part in selecting their governments, the extent of freedom of expression, freedom of association and the independence of the media. Once this freedom is given, it allows the citizens and the media to participate in political processes and entrenchment of civil rights. This study used the estimate of voice and accountability constructed by World Governance Indicators of the World Bank. It ranges between -2.5, indicating weak voice and

accountability and 2.5 indicating strong voice and accountability. It is expected that an increase in voice and accountability will have a positive effect on growth (Asghar, Qureshi & Nadeem, 2015; Effiong, 2016; Berhane, 2018).

Government Effectiveness: This measures the quality of public service, the competence of civil servants, the degree to which a government is free from political pressure, quality of bureaucracy, quality of public policy and government's commitment ability to policies. Government policies and decisions influence the decisions of economic agents in an economy. For example, government decisions and policies on minimum wage, prices, trade openness, tax policies, regulations on capital account and international trade may influence financial sector development. This study, made use of the estimate of government effectiveness constructed by World Governance Indicators of the World Bank. It ranges between -2.5, indicating weak government effectiveness and 2.5 indicating strong government effectiveness. It is expected that an increase in government effectiveness should have a positive effect on growth and financial development (Asghar, Qureshi & Nadeem, 2015; Effiong, 2016; Berhane, 2018).

Rule of Law**:** It measures the perceptions of people about the quality of contract enforcement, protection of property rights, societal respect for rules and regulations, the ability of the police and court to execute their duties in a free and fair manner as well as the probability of violence and crime. Since financial system is prone to a lot of information asymmetry, the efficiency and the effectiveness of the court in dealing with contract enforcement and protection of property rights are very necessary for financial development and economic growth in general. The

study made use of an estimate of rule of law constructed by World Governance Indicators of the World Bank. It ranges between -2.5 indicating weak adherence to rule of law and 2.5 indicating strong adherence to rule of law. It is expected that the rule of law will have a positive effect on growth and financial development (Asghar, Qureshi & Nadeem, 2015; Effiong, 2016; Berhane, 2018).

Control of Corruption: This measures the extent to which politicians, leaders and other people in public positions used power for their personal gains. Corruption takes many forms, not limited to bribes, favouritism, misuse of influence for personal gains and embezzlements. Corruption limits development in most economies within the sub-region because it lowers the trust of investors to invest in these economies. The estimate of control of corruption constructed by World Governance Indicators of the World Bank was used for this study. It ranges between -2.5, indicating a high degree of corruption and hence weak institutions and 2.5 indicating strong institution. Higher control of corruption is expected to have a positive effect on financial development and growth (Asghar, Qureshi & Nadeem, 2015; Effiong, 2016; Berhane, 2018).

Regulatory Quality**:** It measures people's assurance and trusts that the government will formulate and implement sound policy regulations and activities that would promote private sector development. Regulatory quality is more of how government formulates policies to regulate the private sector to ensure it yields the expected growth. This may include formulating policies on market entry, how new businesses are registered, government fees and licenses as well as hiring of workers. In this study, the researcher used the estimate of regulatory quality constructed by

World Governance Indicators of the World Bank. It ranges between -2.5 indicating weak regulatory quality and 2.5 indicating strong regulatory quality. Regulatory quality is expected to have a positive relationship with economic growth and financial development (Asghar, Qureshi & Nadeem, 2015; Effiong, 2016; Berhane, 2018).

Polity 2 Score**:** The last but not the least measure of institution used in this study is polity 2 score developed by the Polity IV project. It is a combination of democratic and autocratic indexes used to measure how democratic or autocratic a nation is at a point in time. It is a 21-point scale ranging from -10 to 10 where the negative 10 indicate strong autocratic state and positive 10 indicating a strong democratic state. It serves as country's measure of democratic institutions. It is expected that the level of polity2 score to have a positive relationship with financial development and economic growth(Asghar, Qureshi & Nadeem, 2015; Effiong, 2016; Berhane, 2018).

Control variables in the model

Gross Fixed Capital Formation as a percent GDP (GFCF)**:** The present study just like other studies such as Effiong (2016), Ofori-Abebrese et al. (2017) and Prowd (2018) used GFCF as a proxy for domestic investment. GFCF was used to proxy for investment because it is very efficient in capturing both the government and private sector investment in terms of physical capital in any economy. Investment promotes growth, by making physical capital available to labour in the form of machines and technology thereby improving the efficiency of labour hence reducing the cost of production. From the empirical review and theoretical

perspective, gross fixed capital formation as a percentage of GDP (GFCF) is expected to have a positive relationship with economic growth (Effiong, 2016; Ofori-Abebrese et al., 2017; Prowd, 2018).

Population Growth Rate (POP): This measures the rate of growth in the labour force. Population is expected to have either negative or positive effect on growth. On one hand, an increase in population growth rate puts pressure on the little available physical capital, hence reduces output. On the other hand, an economy with an idle physical capital increased population growth will lead to an increase in human capital needed for production, hence growth. Therefore population increases could have a positive or negative effect on growth (Akinlo, 2016; Ferreira & Ferreira, 2016; Ofori-Abebrese et al., 2017; Prowd, 2018).

Openness to International Trade (TOT): openness to international trade refers to the sum of imports and exports as a percentage of GDP. It shows how an economy opens up its borders to international trade in terms of trade volumes and laws that support export and import. From both theoretical and empirical point of view, the effect of trade openness of economic growth could be positive or negative (Ferreira & Ferreira, 2016; Effiong, 2016; Prowd, 2018; Ibrahim& Alagidede, 2018).

Foreign direct investment (FDI) as percentage of GDP: this measures the amount of direct investment in an economy by a foreign national or group of foreign nationals. It is a type of cross border investment where a resident of one counrty has control over a significant enterprise and its management in another country. It

is measured by dividing total amount of foreign invetment by gross domestic product(GDP). FDI is expected to have either positive or negative relationship with economic growth depending on the type of investments done and the conditions present in those countries (Assefa & Mollick, 2017; Herzer, 2012; Kotey, 2017; Michael, 2018; Jugurnath, Chuckun,&Fauzel ,2016; Oussama, Ahmed and Fatma, 2017).

Government Expenditure (GS) as percentage of GDP: Government consumption expenditure covers all government expenditure on the procurement of goods and services including benefits for employees, amount of transfer payments to households and interest on transfer payments. These investments have an impact on economic growth so we have to control for it so that it does not affect the effect our performance. The researcher expects a positive relationship between government consumption and economic growth (Prowd, 2018).

Preliminary Analyses

In order to select the appropriate estimation technique and procedure to attain the purpose of the study, some preliminary analyses were carried out to understand the nature of the data set. These include; summary statistics, correlation analysis, a graph of the dependent variable and some key explanatory variables.

Estimation Procedure

To analyse the relationship between economic growth, financial development and institutions, there is the need for an estimation technique that will take care of the endogeneity problem associated with economic growth and

country-specific heterogeneities. In performing panel analysis, there are two main options available namely, static panel and dynamic panel analysis. Based on the nature of the dependent variable (economic growth), which normally creates the problem of endogeneity and necessitates the statement of the empirical model in a dynamic form because the current year's growth would be explained by previous year's growth. This requires us to include lagged dependent variable as an explanatory variable in the model.

The dataset used for this study consists of 36 SSA counties over a period 18 years, the best estimation technique suggested in literature to be suitable for a dataset with large cross-sectional unit, and short time is generalized methods of moments (GMM) (Arellano & Bond, 1991: Arellano & Bover, 1995; Blundell & Bond, 1998; Blundell & Bond, 2000). Generalized methods of moments (GMM) is suitable due to the following advantages over other methods of estimations. First, GMM estimation technique is able to address the endogeneity problem associated with most growth regressions. Meanwhile the previous growth normally determines the current level of growth, omitted variable bias, measurement error and unobserved country-specific effects (Beck, 2009). Secondly, GMM relaxes the normality assumption required under the ordinary least square (OLS) estimation approach; this enables us to estimate the effect or impact of variables on others even if the error term is not normally distributed. In addition, GMM estimation technique is very appropriate in a situation where there is a smaller time span and a large cross-sectional unit (Beck, Levine & Loayza, 2000).

From Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond, (2000) the researcher took the first difference of equation (11) to remove the constant term and the country-specific unobserved effects. This gives equation (12)

$lnRGDP_{i,t} - lnRGDP_{i,t-1} = (\beta_0 - \beta_0) + \beta_1(lnRGDP_{i,t-1} - lnRGDP_{i,t-2}) + \beta_2(FD_{i,t} - FD_{i,t-1}) + \beta_3(\mathbf{X}_{i,t} - \mathbf{X}_{i,t-1}) + (\eta_i - \eta_i) + (\mu_t - \mu_{t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1})$ i =1, 2, 3,…,36; t =1, 2,…,18 …………………………..(12)

$lnRGDP_{i,t} - lnRGDP_{i,t-1} = \beta_1(lnRGDP_{i,t-1} - lnRGDP_{i,t-2}) + \beta_2(FD_{i,t} - FD_{i,t-1}) + \beta_3(\mathbf{X}_{i,t} - \mathbf{X}_{i,t-1}) + (\mu_t - \mu_{t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1})$ i =1, 2, 3,…,36; t =1, 2,…,18 ………………………………………………………… (13)

We can rewrite equation (13) as

$\Delta lnRGDP_{i,t} = \beta_1(\Delta lnRGDP_{i,t-1}) + \beta_2(\Delta FD_{i,t}) + \beta_3(\mathbf{\Delta X}_{i,t}) + \Delta\mu_t + \Delta\varepsilon_{i,t}$ i =1, 2, 3,…,36; t =1, 2,…,18 …………………………………….. (14)

Taking the first difference solves the problem of country specific unobserved heterogeneity but introduces another problem known as endogeneity bias since the new error term $(\varepsilon_{i,t} - \varepsilon_{i,t-1})$ as in equation (13) would correlate with $lnRGDP_{i,t-1} - lnRGDP_{i,t-2}$. In addition, all the explanatory variables correlate with the lagged error term $\varepsilon_{i,t-1}$. To solve this challenge, the difference GMM estimator allows for the use of lagged values of the explanatory variables as instruments once they fulfil two assumptions or moment conditions: that is, the

error term does not serially correlate with instrument and the explanatory variable are weakly exogenous.

$$E\left[lnRGDP_{i,t-s},\ \left(\varepsilon_{i,t} - \varepsilon_{i,t-1}\right)\right] = 0\ for\ all\ s \geq 2;\ \text{t=3,…,18}\ \text{ and}$$

$$E\left[\boldsymbol{X}_{i,t-s},\ \left(\varepsilon_{i,t} - \varepsilon_{i,t-1}\right)\right] = 0\ for\ all\ s \geq 2;\ \text{t=3,…,18}\quad \ldots\ldots\ldots\ldots\ldots\ldots\ (15)$$

Once the instruments used, fulfil the moment conditions, the estimation technique is called difference GMM.

Blundell and Bond, (1998) argued that the difference GMM suffers from weak instruments when the explanatory variables persist over time. Arellano and Bover (1995), and Blundell and Bond, (2000) suggested an estimator that allows the reseacher to combine a system of equations in difference and levels. Blundell and Bond, (2000) argued for the use of lagged difference dependent variable as instruments for the level equation in addition to the lagged explanatory as an instrument in the difference equation. The system GMM estimator is said to be more efficient estimator compared to the difference estimator. For the additional instruments to be valid, there could be a correlation between the explanatory variables and the country-specific effect in levels. But there should be no correlation between the difference of these variables and country-specific effect. This requires additional moment condition for the level equation we need to fulfil to allow us to use the system GMM;

$$E\left[(lnRGDP_{i,t-s} - lnRGDP_{i,t-s-1})\left(\eta_i + \varepsilon_{i,t-1}\right)\right] = 0\ for\ all\ s = 1; t = 3, \ldots,18$$

and $E\left[\boldsymbol{X}_{i,t-s} - \boldsymbol{X}_{i,t-s-1}\right)\left(\eta_i + \varepsilon_{i,t-1}\right)\right] = 0\ for\ s = 1;\ \text{t = 3, ….,18}\ \ldots\ldots\ldots\ (16)$

In this study, we used system GMM to estimate equations 17-19.

To achieve objective one, the GMM estimator is used and specified as follows:

$$\Delta lnRGDP_{i,t} = \beta_1(\Delta lnRGDP_{i,t-1}) + \beta_2(\Delta FD_{i,t}) + \beta_3(\mathbf{\Delta X}_{i,t}) + \Delta\mu_t + \Delta\varepsilon_{i,t}$$

i =1, 2, 3,…,36; t =1, 2,…,18 …….. (17)

For objective two, the GMM model estimator will be:

$$\Delta lnRGDP_{i,t} = \beta_1(\Delta lnRGDP_{i,t-1}) + \beta_2(\Delta Fm_{i,t}) + \beta_3(\Delta FI_{i,t}) + \beta_4(\mathbf{\Delta X}_{i,t}) + \Delta\mu_t + \Delta\varepsilon_{i,t}$$

i =1, 2, 3,…,36; t =1, 2,…,18 …….(18)

The GMM model estimator for objective three becomes

$$\Delta lnRGDP_{i,t} = \beta_1(\Delta lnRGDP_{i,t-1}) + \beta_2(\Delta FD_{i,t}) + \beta_3\Delta INS_{i,t} + \beta_4(\Delta FD_{i,t} * \Delta INS_{i,t}) + \beta_5(\mathbf{\Delta X}_{i,t}) + \Delta\mu_t + \Delta\varepsilon_{i,t}$$

i =1, 2, 3,…,36; t =1, 2,…,18 …….(19)

Model Diagnostic Test

To ascertain the validity and consistency of the system GMM estimator, two conditions must be fulfilled: (i); the error term must not be serially correlated and (ii) the instruments must be valid. The following tests are used for these verifications.

Hansen test for over-identifying restrictions

Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998) suggested that for the result of the GMM estimator to be consistent, the instruments used for the analysis must be valid. The null hypothesis states that

the instrumented variables are exogenous and not correlated with the error term. The failure to reject the null, validate the instruments.

Arellano-Bond test for serial correlation

This test helps us to examine the assumption that the errors in the first difference regression are not serially correlated. The AR (2) test for serial correlation is based on the residual of the estimation and it is done by using the standard covariance matrix of the coefficients. The null states that the errors in the first difference exhibit no second order serial correlation.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The main objective of this study is to investigate the effect of financial development on economic growth using broad-based index of financial development as well as the two main single financial indicators. In addition, the study explores how institutional environment moderates this effect in sub- Saharan Africa from 2000 to 2017. This chapter is divided into two sections. The summary statistics and correlation analyses are contained in the first section with the second section detailing out results from the generalized methods of moments (GMM) and their discussions

Descriptive Statistics

Table 2 presents the descriptive statistics on the variables used for this study, which allows us to assess the distribution of the data. The descriptive statistics shows the number of observations, mean, standard deviation, minimum and maximum values of variables used for the study. The mean value gives the average value of the variables and the standard deviation measures how close or dispersed the values are from the mean. The maximum and minimum indicate the range of the values used for the study.

Table 2: Summary statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
LnRGDP	648	18.08696	1.53527	14.62261	22.17806
RGDP	648	2.85E+08	7.26E+08	2241394	4.28E+09
NFDI	648	0.138619	0.102031	0.001585	0.626662
BMGD	648	28.08701	17.35624	2.857408	114.1911
DCPS	648	20.05394	25.36176	0.402581	160.1248
FI	648	0.237377	0.14107	0.003136	0.738624
FM	648	0.04495	0.088759	0.00000	0.501291
GFCF	648	20.88811	8.228272	1.09681	60.0183
TOT	648	68.5548	32.86174	19.1008	311.354
GS	648	13.82001	5.148586	0.951747	28.73091
FDI	648	4.431328	8.627444	-6.05721	103.337
Pop	648	2.575667	0.787508	0.068723	5.604957
CON	648	-0.65793	0.551513	-1.56283	1.216737
GOV EFF	648	-0.73267	0.587657	-1.88415	1.056994
REG	648	-0.58133	0.544785	-2.02745	1.12727
RULE	648	-0.68179	0.592176	-2.00851	1.07713
VOICE	648	-0.53716	0.646338	-1.83945	0.982518
polity2	648	2.439815	4.966605	-9	10
INSTI	648	-2.42E-10	1.000002	-1.95945	3.045427

Source: Author's computation, 2020

On the average for the period (2000 to 2017), the mean value of Real Gross Domestic Product (RGDP) for the 36 Sub-Saharan countries used for the study is 28,500,000 US dollars. The annual minimum value was 224,1394 US dollars and maximum value of 428,000,000 US dollars with average variation of 72,600,000

US dollars among the SSA countries used for the study. For the Broad-Based Financial Index (NFDI), the maximum within the region is 0.626662 and the minimum is 0.001585 with an average value of 0.138619. The extent to which the NFDI deviates from the mean is 0.102031 within the region. Broad money as a percentage of GDP (BMGD), which is another measure used for financial development on average has a mean value of 28.08701 as a percent of GDP and 17.35624 as the variation from the mean within the region. The highest level of broad money as a percentage of GDP within the SSA region is 114.1911 and the minimum of 2.857408 within the region. With domestic credit to private as a percentage of GDP (DCPS), also a measure of financial development on average has the minimum and maximum values of 0.402581 and 160.1248 respectively within the SSA countries used for the study. The mean value for domestic credit to private as a percentage of GDP is 20.05394 and the variation within the region from the mean is 25.36176.

The new financial development index provides the opportunity to assess the growth in financial sector development from financial institutions and the financial market. With the 36 SSA countries used for the study, the average mean value for financial institutions development is 0.237377 with variation of 0.14107 within the region. The maximum value for financial institutions development is 0.738624 and the minimum is 0.003136 among the SSA countries. This indicates that each of the countries within the sample has at least one form of financial institution. For financial market development, the maximum within the region is 0.501291 and the minimum is 0, which is an indication that some countries do not have the financial

market at all. The mean value recorded for financial market development is 0.237377 and a variation of 0.088759 within the SSA countries. This is a clear indication that most countries within the region are doing well in terms of financial institutions development compared to financial market development.

In this study, investment is proxied using the gross fixed capital formation as a percentage of GDP. The mean value for the countries within the SSA region is 20.88811 and a variation of 8.228272 from the mean. The maximum and the minimum values recorded within the region are 60.0183 and 1.09681 respectively. Openness to international trade (TOT) as a percentage of GDP has a maximum value of 311.354 as a percentage of GDP and a minimum value of 19.1008 within the region. The mean value of trade openness is 68.5548 with a variation of 32.86174 as a percentage of GDP from the mean value.

Government consumption expenditure has an average value of 13.82001 as a percentage of GDP with the maximum and the minimum values of 28.73091 and 0.951747 all expressed as a percentage of GDP respectively. The deviation from the mean value is 5.148586 as a percentage of GDP in the SSA region. The mean value for foreign direct investment as a percentage of GDP within the region is 4.431328 percent and a standard deviation of 8.627444 percent from the mean. With a maximum and minimum value of 103.337 and -6.05721.

Population growth rate (POP) a proxy for rate of growth in the labour force, has a mean value of 2.575667 percent and a deviation 0.787508 of from the mean.

On average, the maximum population growth rate is 5.604957 percent and the minimum is 0.068723 percent for the SSA countries used for the study.

Moving on with the institutional variables, Control of Corruption has a mean value of -0.65793 and a deviation of 0.551513 from the mean. This is an indication that on the average, SSA countries are performing badly in terms of control of Corruption. The maximum and the minimum values are 1.216737 and -1.56283 respectively. For Government Effectiveness, the mean value is -0.73267 and a deviation of 0.587657. The maximum and the minimum values are 1.056994 and -1.88415 respectively. This is another confirmation of low performance in terms of institutional environment within the SSA countries. For Regulatory Quality, the mean value is -0.58133, with maximum and minimum values of 1.12727 and -2.02745 respectively. In terms of Rule of Law, the average value is -0.68179 and a deviation of 0.592176 from the mean. The maximum and the minimum values are 1.07713 and -2.00851 respectively. For voice and accountability as a measure for an institution has a mean value of -0.53716 and a standard deviation of 0.646338 with a maximum value of 0.982518 and a minimum value of -1.83945. Using Polity2 score as the measure of political institution, has a mean value of 2.439815 and a standard deviation of 4.966605. The maximum level of democracy is 10 and the Minimum level of autocracy is -9. From all the variables used as proxies for institutional environment, it can be concluded that the SSA countries are not performing well when it comes to their institutional environment. To confirm the speculation of low institutional performance, the study uses principal composite analysis to generate an index to represent the overall index for

institutional environment. The mean value for the overall index for financial development is -000000000.242 and a deviation of 1.000002. The maximum and the minimum values are 3.045427 and -1.95945 respectively. The above result clearly justifies existence of weak institutional environment in SSA.

Descriptive analysis of the dependent variable and some key independent variables in terms of regional, economic and income groupings within the SSA.

The study proceeds by analysing how real GDP and financial development varies across regional, income and economic groupings within the 36 selected Sub-Saharan African countries from 2000 to 2017.

Real GDP in terms of regional groupings

Figure 1 shows the trends in average real GDP from 2000 to 2017 in 36 Sub-Saharan countries. The bar graph indicates the regional difference in the real GDP. The graph shows that, on the average the Southern African countries have the highest real GDP of 820,000,000 US dollars, followed by West African countries with an average of 310,000,000 US dollars and the least within the SSA region scored North African region with an average of 78,000,000 US dollars. The graph indicates that the Southern African countries are doing greatly well compare to other regions within the Sub-Saharan African region. The level of economic growth and standard of living is higher in most Southern African countries compared to the other regions.

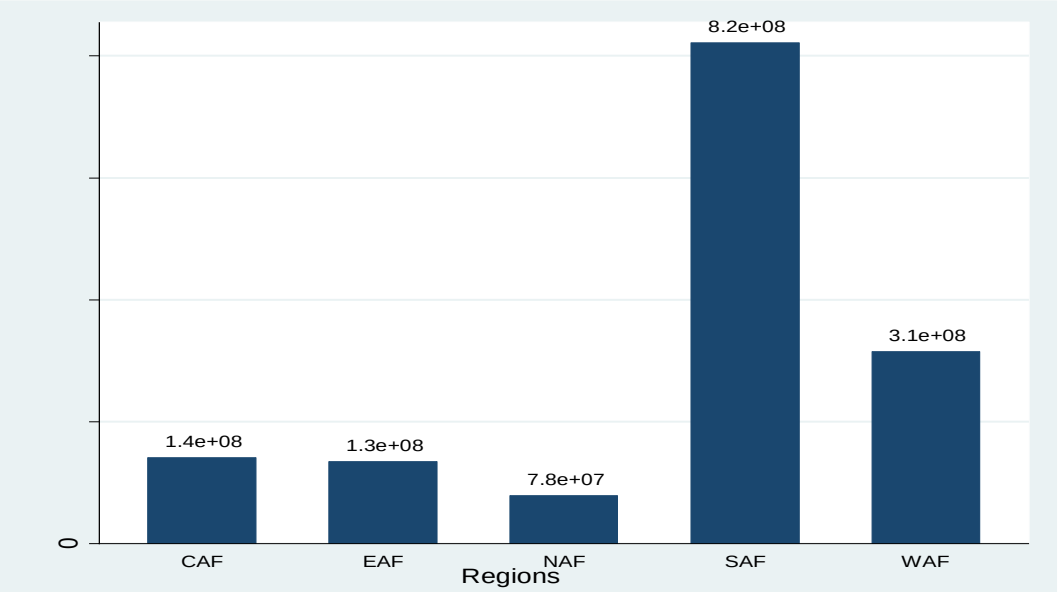

Figure 1: Real GDP in terms of regional groupings

Source: Author's computation, 2020

Real GDP in terms of economic groupings

Figure 2 shows the trend in real GDP in terms of the economic groupings for the SSA countries used for the study. The countries that formed part of the Southern African development community (SADC) are doing better with a mean of 430,000,000 US dollars, followed by the Economic Community of West African States (ECOWAS) with approximately mean value of 320,000,000 US dollars, third was the East African Communities (EAC), the Economic Community of Central African States (ECCAS) and Sudan who is not part of any economic grouping has the least real GDP of 37,000,000 US dollars. This demonstrates that the result for real GDP does not vary in terms of both regional and economic groupings.

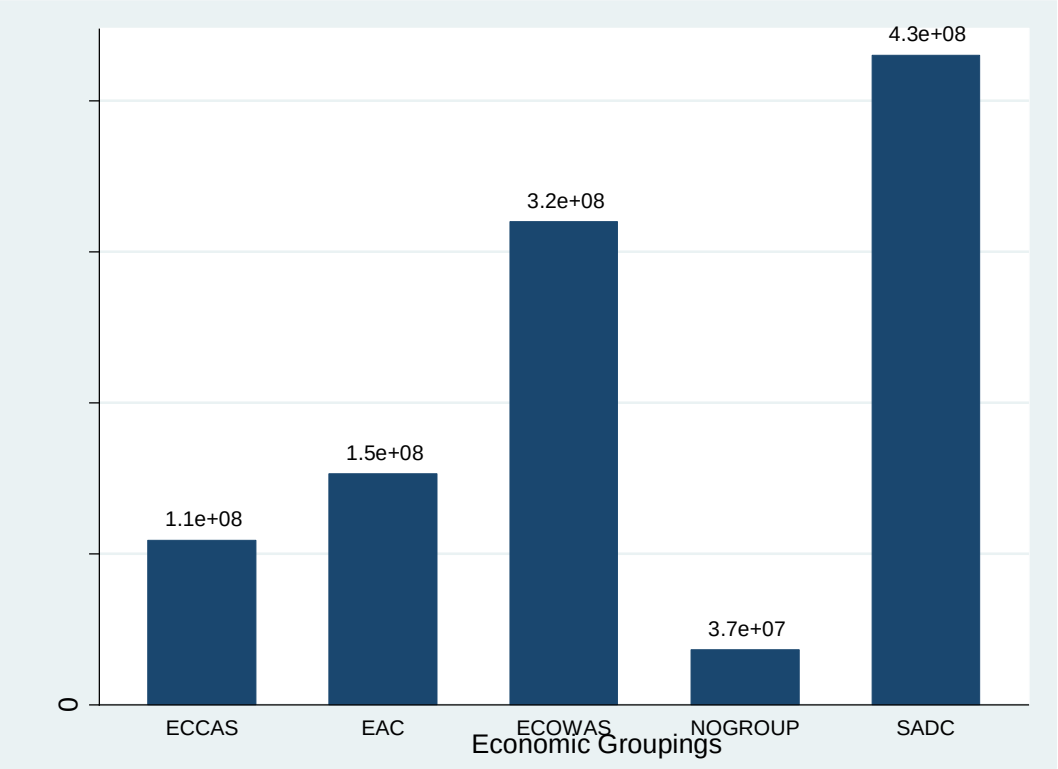

Figure 2: Real GDP in terms of economic groupings

Source: Author's computation, 2020

Financial Development in Terms of Regional Groupings

Figure 3 presents the level of financial development across various regional groups. The study made use of the Broad-Based financial development index developed by IMF in 2016, to assess the variation in financial development across the sub-region. The Southern African region has the highest-level development with an average of 0.320076, followed by the Eastern African states with an average of 0.1311124, and the Northern African state (Sudan) was the least with mean value of 0.089344. This result defies the popular assertion in literature that countries that achieved higher economic growth usually performs well in financial development and vice versa. West African countries are doing far better

than the East African states in terms of real GDP but the opposite is true when it comes to financial development.

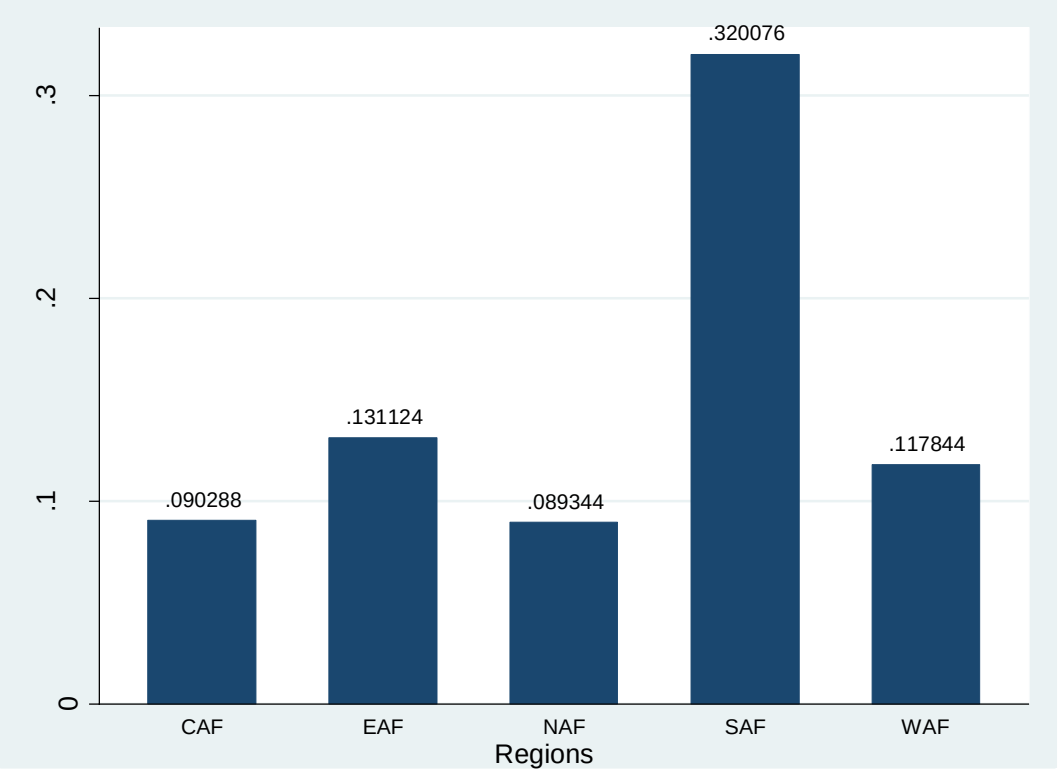

Figure 3: Financial Development in terms of regional groupings

Source: Author's computation, 2020

Financial development index in terms of economic groupings

Figure 4 presents the financial development performance in terms of economic groupings. Southern African Development Community (SADC) took the lead with a mean value of 0.2013 but interestingly the Economic Community of West African States (ECOWAS) bypass the East African Communities (EAC) to be second with average value of 0.12731 and 0.11591 respectively. The result seems surprising but a close look at the data revealed that some of the Eastern African countries such as Malawi, Madagascar, Mozambique and Tanzania joined

the Southern African Development Community (SADC) instead of the East African Communities (EAF). This has affected the performance of EAC in terms of financial development performance. The least performance is put up by countries that are not part of any economic group such as Sudan, Comoros and Mauritania.

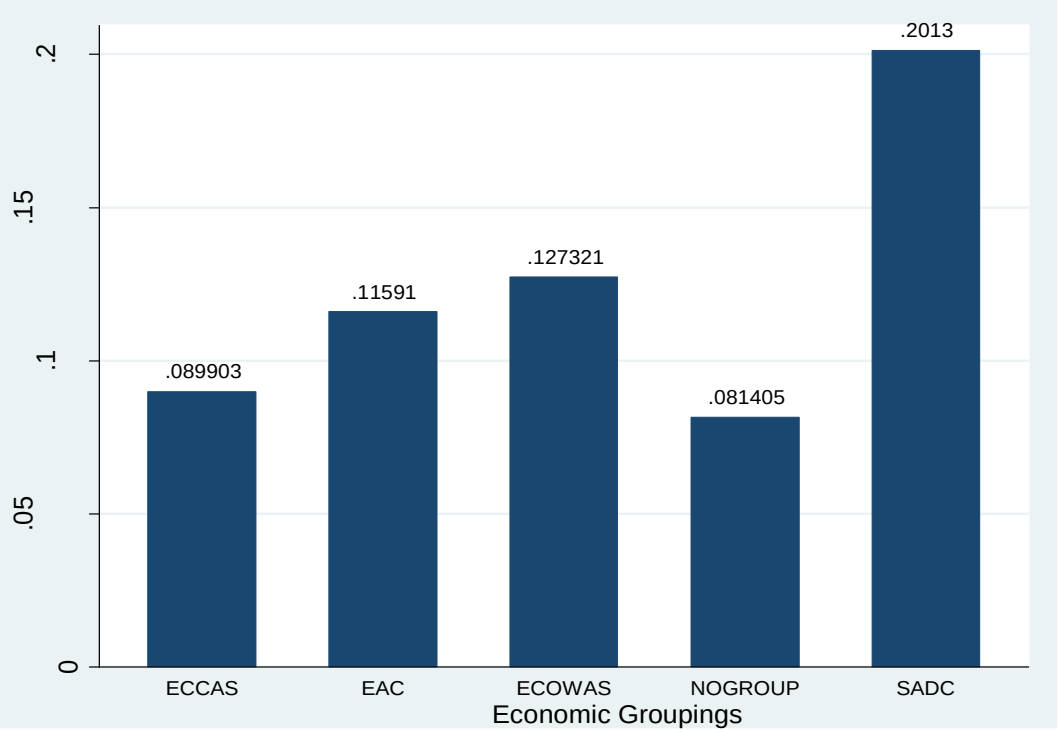

Figure 4: Financial Development in terms of Economic groupings

Source: Author's computation, 2020

Financial development index in terms of income groupings

Figure 5 presents a bar graph on the relationship between financial development and income groupings. This further confirms the earlier claim of a relationship between financial development and economic growth. The graph clearly shows that the upper-middle-income countries have on average 0.310403 level of financial development, followed by the lower-middle-income countries

with 0.151848 and the least position was taken by the lower-income countries with a mean of 0.096325.

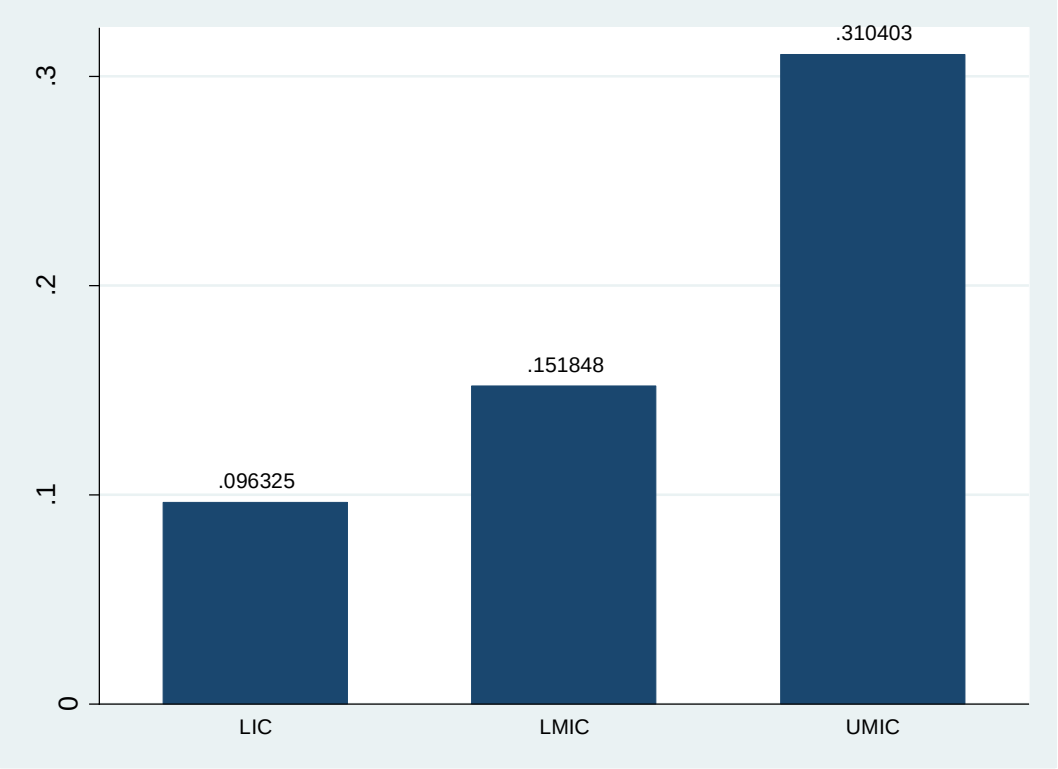

Figure 5: Financial Development in terms of Income groups

Source: Author's computation, 2020

Correlation Analysis

Table 3 shows the correlation between the variables used for the study. The correlation matrix helps to ascertain whether or not there exists multicollinearity between the variables or not. As shown from Table 3, log of real GDP is positively and significantly correlated with the broad-based financial development index, domestic credit to private sector as a percentage of GDP, broad money as a percentage of GDP, gross fixed capital formation as a percentage of GDP, control of corruption, government effectiveness, regulatory quality, rule of law, voice and

accountability, polity2 score and the overall institutional index. This demonstrates that an increase in each of the variables has a positive effect on economic growth. Log of real GDP is negative and significantly correlates with population growth, Foreign direct investment and Openness to international trade. The correlation between government consumption expenditure and log real GDP is positive but not significant. From the correlation table, the result indicates that there exists multicollinearity between the individual institutional variables and the overall index for institution generated using Principal component analysis. Hence the overall index for institution should not be used together with any of the institutional variables in the same model.

Table 3: Pairwise Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) lnRGDP	1.000															
(2) NFDI	0.492*	1.000														
(3) DCPS	0.402*	0.899*	1.000													
(4) BMGD	0.216*	0.778*	0.817*	1.000												
(5) GS	0.019	0.368*	0.379*	0.379*	1.000											
(6) POP	-0.107*	-0.497*	-0.498*	-0.525*	-0.140*	1.000										
(7) FDI	-0.123*	-0.02	-0.06	-0.01	-0.099*	0.121*	1.000									
(8) TOT	-0.089*	0.264*	0.139*	0.266*	0.09*	0.089*	0.308*	1.000								
(9) GFCF	0.188*	0.102*	0.055	0.110*	0.194*	0.164*	0.286*	0.296*	1.000							
(10) CON	0.157*	0.547*	0.500*	0.538*	0.454*	-0.447*	0.01	0.215*	0.167*	1.000						
(11) GOV EFF	0.395*	0.640*	0.604*	0.637*	0.416*	-0.398*	-0.06	0.146*	0.222*	0.856*	1.000					
(12) REG	0.345*	0.606*	0.594*	0.646*	0.417*	-0.384*	-0.06	0.139*	0.198*	0.836*	0.933*	1.000				
(13) RULE	0.229*	0.564*	0.525*	0.622*	0.370*	-0.372*	-0.03	0.183*	0.196*	0.880*	0.906*	0.902*	1.000			
(14) VOICE	0.249*	0.558*	0.526*	0.589*	0.315*	-0.235*	0.03	0.134*	0.134*	0.691*	0.718*	0.723*	0.791*	1.000		
(15) polity2	0.107*	0.381*	0.360*	0.406*	0.101*	-0.099*	0.03	0.009	-0.046	0.330*	0.312*	0.311*	0.385*	0.748*	1.000	
(16) INSTI	0.395*	0.640*	0.604*	0.637*	0.416*	-0.398	-0.058	0.147*	0.222*	0.856*	1.000*	0.933*	0.906*	0.718*	0.312*	1

* shows significance at the 0.05 level

Empirical Estimation and Discussions

In this section, the results from the Generalized Methods of Moments (GMM) estimation are presented and discussed in the context of literature. Specifically, Table 4 compares the effect of financial development on economic growth using a broad-based index of financial development and the two main single financial sector development indicators. Table 5 presents the relative importance of financial institutions development and financial market development in affecting economic growth within the SSA region. Lastly, Table 6 and 7 presents the result on how institutional environment moderates the effects of financial development on economic growth within the Sub- Saharan African region.

Table 4: Compares the effect of financial development on economic growth using different financial development indicators

Variable	Model 1	Model 2	Model 3
lnRGDP(-1)	0.739***	0.824***	0.734***
	(0.0663)	(0.0386)	(0.0694)
DCPS	0.00752***		
	(0.00246)		
BMGD		0.00404	
		(0.00262)	
NFDI			2.510***
			(0.738)
TOT	-0.00304***	-0.00110	-0.00263**
	(0.00111)	(0.000901)	(0.00116)
POP	-0.00402	0.00397	0.0618
	(0.0715)	(0.0360)	(0.0414)

Table 4 continued

FDI	-0.00705*	-0.0161*	-0.00678
	(0.00407)	(0.00927)	(0.00675)
GFCF	0.0262	0.0116**	0.0106**
	(0.0194)	(0.00484)	(0.00440)
GS	-0.00991	0.000476	-0.00877
	(0.00872)	(0.00668)	(0.00852)
Time Dummy	Yes	Yes	Yes
Prob > F	0.0000	0.000	0.0000
AR(1)	0.006	0.000	0.001
AR(2)	0.117	0.231	0.105
Hansen test for overid.	0.435	0.776	0.313
No of Obs.	612	612	612

Note: robust standard error option was used; Standard errors are in parentheses; $^{*}p<$ 0.1, $^{**}p<$ 0.05, $^{***}p<$ 0.01 indicates significance at 10%, 5% and 1% respectively. The estimation was done using xtabond2 command stata.

Source: Author's computation, 2020.

From Table 4, the result shows that across the 3 models the lagged value of the log of real GDP, which was used as a proxy for the lagged value of economic growth was significant. This further confirms the need to specify a dynamic model. In model 1, using Domestic Credit to Private as a percentage of GDP (DCPS) as a measure for financial development has a positive coefficient of 0.00752 and statistically significant at 1 percent alpha level. This shows that for every 1 percent increase in Domestic Credit to Private as a percentage of GDP will increase real GDP by 0.00752 percent. This confirmed the findings of Ibrahim & Alagidede (2018), Bist (2018) and Kacho and Dahmardeh (2017), where Domestic Credit to

Private as a percentage of GDP is postulated to have a positive and significant effect on economic growth while the result of Effiong (2016) prove to be positive but no significant effect on growth. In model 2, using broad money as a percentage of GDP as a proxy for financial development, the result indicates that, it does not have any significant effect on real GDP.

In model 3, the study used the broad-based index for financial development (NFDI), where all the different dimensions of financial development captured has a coefficient of 2.510 and statistically significant at 1 percent alpha level. This implies that for every 0.01 (which is equivalent to 1 percent) increase in financial development, real GDP would increase by 2.51 percent. This confirms the assertion by Svirydzenka (2016) that using banking sectors such as credit to the private sector and broad money as a percentage of GDP does not take into consideration the multidimensional nature of financial development hence could bias the result. With time, the financial system has evolved from a simple banking sector to a multifaceted system. Although banks remain the largest, SSA now has investment banks, insurance companies, mutual funds and other non-financial institutions not forgetting that even though, the financial market still at its infant stage, it is still relevant in promoting growth by making capital available to investors. Hence using single banking sector measurements for financial development result in underestimation of the actual effect of financial development on economic growth.

Openness to International Trade as a percentage of GDP (TOT) is negatively related to the log of real GDP in all the models. For instance, in model 1 and 3, the coefficients of TOT are -0.00304 and -0.00263 respectively and

significant at 1 percent alpha level. This could be interpreted that, for every 1 percent increase in trade openness real GDP decrease by 0.003 and 0.0026 percent in model 1 and 3 respectively. The result was just the confirmation of the correlation analysis, where the log of real GDP negatively correlates with trade openness. This result conforms to the findings of Kotey (2017), Ibrahim and Alagidede, (2018) and Jugurnath, Chuckun,and Fauzel (2016), who in their studies conclude that trade openness negatively affect economic growth. This is much expected since import exceeds export levels in most Sub-Saharan African countries where most of the exports are unprocessed raw materials. Also, in most of the countries within the region, the export of unprocessed raw material such as gold, bauxite, manganese and oil are done by some foreign companies located within the region, therefore in the long-run, the little income earned from the export is again repatriated.

In addition, Foreign Direct Investment (FDI) affects economic growth negatively in all the three models. For example, in model 1, foreign direct investment as a percentage of GDP (FDI) has a negative coefficient of 0.00705 and significant at 10 percent. Meaning a 1 percent increase in foreign direct investment as a percentage of GDP would reduce real GDP by 0.00705 percent. In model 2 FDI has a coefficient -0.0161 and significant at 10 percent level of significance. There are some reasons that might contribute to the negative effect of FDI on growth in developing countries as opposed to the positive effect in developed countries. They include the fact that most of the FDIs are merely in the form of mergers and acquisition, which results from transfer of ownership of existing assets from domestic to foreign hands rather than infusion of new capital into the

economy. Even if the FDI takes the form of new capital investment, it usually crowds out domestic investment. Meanwhile most multinational companies in most of the Sub-Saharan African countries mostly invest in consumable goods, which domestic firms can produce since it requires less capital. The repatriation of profit and raising of additional capital from the hosting country further worsen the exchange rate and interest respectively in the host country. This is consistent with the findings of Herzer (2012), Kotey (2017) and Michael (2018) but inconsistent with the works of Jugurnath, Chuckun,and Fauzel (2016), Oussama, Ahmed and Fatma (2017) and Ofori-Abebrese, Becker and Diabah (2017). FDI is negative but not significant in model 3.

There is a positive relationship between gross fixed capital formation as a percentage of GDP and economic growth, which was significant in model 2 and 3 with a coefficient of 0.0116 and 0.0106 respectively. This implies that an increase in the fixed capital formation may promote growth. This finding conforms to the findings of Effiong (2016), Jugurnath, Chuckun,and Fauzel (2016) and Gyamfi, Bokpin, Aboagye and Ackah (2019).

To ascertain the validity and consistency of the system GMM estimator, two conditions must be fulfilled; the error term must not be serially correlated and the instruments must be valid. This necessitates the study to perform Arellano-Bond test for serial correlation AR (2), which is a test for second-order serial correlation with null no second-order serial correlation. The second test is the Hansen test for over-identifying restrictions with the null hypothesis, “The instrumented variables are exogenous and not correlated with the error term”. Rejecting the null, is an

indication of instruments validity. In all the 3 models, both AR (2) and Hansen are not significant in any of the models. Hence the models are valid and consistent.

Table 5: The relative importance of financial institutions development and financial market development in affecting economic growth

Variables	**Coef.**	**Robust Std. Err.**	**P>t**
lnRGDP (-1)	0.86214***	0.044256	0.000
FI	-0.07433	0.220275	0.738
FM	1.534756***	0.51874	0.006
TOT	-0.00079	0.000778	0.315
POP	0.038432	0.02353	0.111
FDI	-0.01474*	0.007832	0.068
GFCF	0.010221**	0.004221	0.021
GS	0.002865	0.005044	0.574
Cons	2.273497	0.784478	0.006
Time Dummy	YES		
Prob > F	0.000		
AR (1)	0.000		
AR (2)	0.143		
Hansen test for overid.	0.519		
No of Obs.	612		

Note robust standard error option used; Standard errors in parentheses; $^{*}p< 0.1$, $^{**}p< 0.05$, $^{***}p< 0.01$ indicates significance at 10%, 5% and 1% respectively. The estimation was done using xtabond2 command Stata.

Source: Author's computation, 2020

The second objective was to examine the relative importance of financial institutions development and financial market development in affecting economic growth within the SSA region. The result of the analysis as presented in Table 5

shows that the lag value of the dependent variable log of real GDP is significant confirming the need to estimate a dynamic model. Again, from the result, the financial market development index was significant at 1% with a positive coefficient of 1.534756 while the financial institution development index was wrongly signed and not significant. From this analysis, it could be said that for every 0.01 increase in financial market development, the result would be 1.534756 percent increase in real GDP. From this analysis, the researcher can conclude that on the average, financial market contributes significantly to economic growth but not financial institutions among the countries selected for this study. This conforms to the result of Alomari (2019), which agrees to the fact that even in the advanced economies, it is the financial market that leads to growth, not financial institutions.

Furthermore, from the results, foreign direct investment (FDI) as a percentage of GDP is significant at 10 percent but negatively affect economic growth with a coefficient of -0.01474. This implies that for every 1 percent increase in foreign direct investment economic growth, it would decrease by 0.01474 percent. This result is consistent with the result in Table 4 on the first objective, where FDI negatively affect economic growth due to extractive nature of FDIs in developing countries, the crowding out effect of FDI on domestic investments and repatriation of profit, normally worsen the exchange rate of hosting countries. This result is consistent with the findings of Herzer (2012), Kotey (2017) and Michael (2018), whose work agreed to the fact that FDI negatively affects the economic growth of the host countries, especially developing countries.

Besides, gross fixed capital formation as a percentage of GDP (GFCF) a proxy for investment was significant at 5 percent and has a positive coefficient of 0.010221. This shows that for every 1 percent increase in GFCF, growth increase by 0.010221 percent. This finding conforms to the findings of Effiong (2016), Jugurnath, Chuckun,and Fauzel (2016) and Gyamfi, Bokpin, Aboagye and Ackah (2019). This suggests that fixed capital formation promote growth and development.

For the post estimations, the researcher conducted the Arellano-Bond test for serial correlation AR (2) and Hansen test over-identifying restrictions. The null hypotheses are no second-order serial correlation and the instrumented variables are exogenous and not correlated with the error term respectively. Since the coefficient of AR (2) and Hansen over-identification test are 0.143 and 0.519 respectively, the study fails to reject the null, which implies our model does not suffer from second-order serial correlation and over-identification.

Table 6: How institutional environment moderates the effects of financial development on economic growth

Variables	Model 4	Model 5	Model 6	Model 7
lnRGDP (-1)	0.762***	0.765***	0.746***	0.741***
	(0.0663)	(0.0553)	(0.0639)	(0.0670)
NFDI	2.081***	1.949***	2.169***	2.742***
	(0.751)	(0.669)	(0.741)	(0.922)
TOT	-0.00248**	-0.00234**	-0.00252**	-0.00286**
	(0.00117)	(0.00105)	(0.00120)	(0.00117)
POP	0.0283	0.0303	0.0120	0.0377
	(0.0333)	(0.0307)	(0.0320)	(0.0351)
FDI	-0.00756	-0.0106	-0.00986	-0.00707
	(0.00758)	(0.00915)	(0.00904)	(0.00717)
GFCF	0.0105**	0.00958**	0.0114**	0.0108**
	(0.00436)	(0.00471)	(0.00495)	(0.00448)
GS	-0.00798	-0.0108	-0.0103	-0.0104
	(0.00775)	(0.00757)	(0.00770)	(0.00819)
CORR	0.222*			
	(0.121)			
NFDI*CORR	-1.616**			
	(0.682)			
GOV'T_EFF		0.298***		
		(0.0974)		
NFDI* GOV'T EFF		-1.522**		
		(0.601)		
RULE			0.277***	
			(0.0986)	
NFDI*RULE			-1.882***	
			(0.579)	

Table 6 (continued)

Variables	Model 4	Model 5	Model 6	Model 7
VOICE				0.193*
				(0.0995)
NFDI*VOICE				-1.319**
				(0.598)
Constant		4.194***		4.447***
		(0.995)		(1.103)
Time Dummy	Yes	Yes	Yes	Yes
Prob > F	0.000	0.000	0.000	0.000
AR (1)	0.003	0.001	0.002	0.002
AR (2)	0.116	0.161	0.105	0.129
Hansen test for overid.	0.576	0.407	0.639	0.535
No of Obs.	612	612	612	612

Note: Robust standard error option was used; Standard errors are in parentheses; *p< 0.1, **p< 0.05, ***p< 0.01 indicates significance at 10%, 5% and 1% respectively.

Source: Author's computation, 2020.

Table 7: How institutional environment moderates the effects of financial development on economic growth

Variables	Model 8	Model 9	Model 10
lnRGDP (-1)	0.767***	0.841***	0.764892***
	(0.0576)	(0.0772)	(0.055344)
NFDI	1.996***	9.976***	3.063859***
	(0.686)	(3.441)	(0.891167)
TOT	-0.00237**	-0.00210	-0.00234**
	(0.00106)	(0.00139)	(0.00105)
POP	0.0359	-0.0143	0.030278
	(0.0314)	(0.0486)	(0.030661)
FDI	-0.00926	-0.00697	-0.01056
	(0.00853)	(0.0153)	(0.009153)
GFCF	0.00947**	0.0152*	0.009583**
	(0.00448)	(0.00822)	(0.004709)
GS	-0.0109	-0.0598*	-0.01077
	(0.00759)	(0.0328)	(0.007572)
REG	0.287**		
	(0.107)		
NFDI*REG	-1.354**		
	(0.658)		
Polity2		0.143***	
		(0.0497)	
NFDI*polity2		-1.038***	
		(0.0497)	
INSTI			0.175012***
			(0.057218)

Table 7 (continued)

Variables	Model 8	Model 9	Model 10
NFDI*INSTI			-0.89436**
			(0.35334)
Constant		2.394*	3.976175***
		(1.340)	(0.972629)
Time Dummy	Yes	Yes	Yes
Prob > F	0.000	0.000	0.000
AR (1)	0.001	0.006	0.001
AR (2)	0.234	0.213	0.161
Hansen test for overid.	0.553	0.832	0.407
No of Obs.	612	612	612

Note: Robust standard error option was used; Standard errors are in parentheses; *p< 0.1, **p< 0.05, ***p< 0.01 indicates significance at 10%, 5% and 1% respectively.

Source: Author's computation, 2020.

Table 6 and 7, presents the results on how institutional variables moderate the relationship between financial development and economic growth using the multidimensional measure of financial development. Models 4 to 10 presents how each of the institutional variables and the overall index for institution moderates this effect. Before the discussion on the interaction effect, the study first discusses how each of the control variables behaves across all the models.

Across model 4 to 10, the lagged value of the dependent variable remains positive and significant at 1 percent alpha level. This clearly indicates the need to specify a dynamic model, where the endogeneity within the model

could be corrected. This clearly signifies that, growth and development is an add-on process, that is previous growth effect has a significant impact on current and future growth.

The coefficient of trade openness is negatively and statistically significant at 5 percent in all the models except model 9 where it was insignificant. This demonstrates that for every 1 percent increase in trade openness, real GDP decreased by 0.00248, 0.00234, 0.00252, 0.00286, 0.00237 and 0.00234 respectively from model 4 to 10. The possible explanation may be that, import exceeds export levels in most Sub-Saharan African countries and most of the export are unprocessed raw materials, trade openness negatively affects economic growth. This result conforms to the findings of Kotey (2017), Ibrahim and Alagidede, (2018) and Jugurnath, Chuckun,and Fauzel (2016), who in their studies conclude that trade oppenness negatively affects economic growth.

Gross fixed capital formation, a proxy for investment, in the model is statistically significant throughout the entire system from model 4 to 10 at 5 percent alpha level in exception of model 9, where it was significant at 10 percent and it has a positive coefficient of 0.0105, 0.00958, 0.0114, 0.0108, 0.00947, 0.0152 and 0.009583 respectively. An increase in capital formation increases economic growth. This finding conforms to the findings of Effiong (2016), Jugurnath, Chuckun,and Fauzel (2016) and Gyamfi, Bokpin, Aboagye and Ackah (2019), whose studies concluded that increase in fixed capital formation promotes growth and development. This suggests that investment in

fixed capital promotes growth and development, hence governments within the SSA countries should invest more in fixed capital to promote growth.

To assess the moderating role of institution in model, the study examine how each of the institutional variables and the overall institutional index affect real GDP. In model 4, Control of corruption has a positive effect on the log of real GDP with a coefficient of 0.222 and significant at 10 percent alpha level. This implies that an improvement in Control of Corruption results in an increase in real GDP of a country. In model 5, regulatory quality also has a positive effect on economic growth with coefficient 0.298 and significant at 1 percent level of significance. In model 6, Rule of Law is significant at 1 percent and has a positive coefficient of 0.277. This shows that improvement in Rule of Law promotes economic growth. In model 7, where we introduce Voice and Accountability as the institutional variable, the result shows that Voice and Accountability is significant in affecting economic growth at 10 percent and has a coefficient of 0.193. In model 8, the institutional variable used was Regulatory Quality and it significantly affects growth at 5 percent significant level with a coefficient of 0.287. In model 9, polity2 has a positive coefficient of 0.143 and significant at 1 percent. In model 10, the overall index for institutional quality has a positive effect on economic growth with a coefficient of 0.175012 and significant at 1 percent level of significance. From the analysis, the researcher can confidently conclude with North (1990) that development does not take place in a vacuum but it depends on the institutions present in an economy. The result confirms the fact that improvement in institutional environment results into economic growth and development. This conforms to the result of Ferreira and Ferreira (2016), whose study considered institution as

a major driving force for a nation's development, but the result is in contrast to the findings of Akinlo (2016), who speculated that the institutonal environment in SSA rather has a negative impact on economic growth and development.

The study now proceeds by examining the moderating role; institutions are playing between financial development and economic growth within the Sub-Saharan African region. In this analysis, the study considered how each of the institutional variables moderate this relationship.

The researcher first examines how Control of corruption moderate the relationship. Finding the moderating role of Control of corruption from equation (19) gives,

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = \beta_2 + \beta_3 INS_{i,t}$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = \beta_2 + \beta_3 \overline{CORR}$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.081 + (-1.616)(\overline{CORR})$$

Placing the mean value of Control of corruption of -0.65793 from the descriptive statistics gives;

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.081 + [(-1.616)(-0.65793)]$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.081 + 1.063215$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 3.1442$$

This shows that on the average with Control of Corruption, a percentage increase in financial development would increase real GDP by 3.1442 percent. This implies that control of corruption increases the effect of financial development on economic growth. This therefore shows that control of corruption once improved has a significant impact on growth as both a variable on its own and positively influencing financial development to promote growth.

The study moves on to assess how Government's Effectiveness moderates the relationship between financial development and economic growth. From equation (19),

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = \beta_2 + \beta_3\overline{GOV'T\ EFF}$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 1.949 + (-1.522)(\overline{GOV'T\ EFF})$$

Putting the mean value of Government's Effectiveness of -0.73267 from the descriptive statistics gives,

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 1.949 + [(-1.522)(-0.73267)]$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 1.949 + 1.115$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 3.0641$$

From the result, on the average in the face of Government's Effectiveness, a percentage increase in financial development would increase real GDP by 3.0641 percent. The study concludes that government's effectiveness increases the effect of financial development on economic growth.

Again, finding the moderating role of Rule of Law on financial development from equation (19),

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = \beta_2 + \beta_3\overline{RULE}$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.169 + (-1.882)(\overline{RULE})$$

Putting the mean value of Rule of Law of -0.68179 from the descriptive statistics gives

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.169 + [(-1.882)(-0.68179)]$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.169 + 1.29329158$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 3.46229$$

The result indicates that, in the present of Rule of Law, every 1 percentage increase in financial development, economic growth increase by 3.4623 percent. It can be concluded that in the face rule of law, the effect of financial development on economic growth increases.

Similarly, we now assess the moderating role of Voice and Accountability in the growth-finance relationship from equation (19),

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = \beta_2 + \beta_3\overline{VOICE}$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.742 + (-1.319)(\overline{VOICE})$$

Placing the mean value of Voice and Accountability of -0.53716 from the descriptive statistics gives

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.742 + [(-1.319)\ (-0.53716)]$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.742 + 0.7085$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 3.4535$$

This shows that on the average, for every 1 percentage increase in financial development when there is Voice and Accountability, real GDP increase by 3.4535 percent. This demonstrates that an increase in voice and accountability increases the effect of financial development on economic growth.

Now, assessing the moderating role played by Regulatory Quality in the growth-finance relationship from equation (19),

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = \beta_2 + \beta_3\overline{REG}$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 1.996 + (-1.354)(\overline{REG})$$

Placing the mean value of Regulatory Quality of -0.58133 from the descriptive statistics gives

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 1.996 + [(-1.354)(\text{-}0.58133)]$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 1.996 + 0.7871$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 2.7831$$

On the average, from the above analysis, conditioning financial development on Regulatory Quality, a percentage increase in financial development would increase real GDP by 2.7831 percent. The researcher concluded that Regulatory Quality positively moderates the relationship between financial development and economic growth.

The also study examines how Polity2 score which a measure of political stability and absent of violence, moderate the relationship between financial development and economic growth. From equation (19),

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = \beta_2 + \beta_3\overline{POLITY2}$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 9.976 + [(-1.0380)(\overline{POLITY2})$$

Putting the mean value of Polity2 score 2.439815 from the descriptive statistics gives,

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 9.976 + [(-1.0380)(2.439815)]$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 9.976 - 2.53253$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 7.4435$$

The result shows that in the face of Political Stability, financial development would increase real GDP by 7.4435 percent. We conclude that the effect of political stability positively moderates the relationship between financial development and economic growth. Hence most governments within the SSA must strive to maintain political stability.

Lastly, the study evaluates the moderating role of institutional quality on economic growth using the overall index for institutional quality generated using principal component analysis in the growth-finance relationship. From equation (19),

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = \beta_2 + \beta_3\overline{INSTI}$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 3.063859 + [(-0.89436)(\overline{INSTI})$$

Putting the mean value of the institutional quality index -2.42E-10 from the descriptive statistics gives,

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 3.063859 + [(-0.89436)(-0.000000000242)]$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 3.063859 + 0.0000000001788$$

$$\frac{\Delta lnRGDP_{i,t}}{\Delta NFDI_{i,t}} = 3.063859$$

This shows that on the average, for every 1-percentage increase in financial development, real GDP increase by 3.063859 percent. This demonstrates that an improvement in institutional quality increases the effect of financial development on economic growth.

Considering the moderating role played by all the institutional variables and the overall index, the result indicated that all the various aspects of institutional environment are important for an economy to gain the full impact of financial development of economic growth. However, political institution is very important in determining the effect of financial development on economic growth. This is because the political institution largely determines the scope and limit of economic institutions that operate in a country. These results gain support from the works of Kacho and Dahmardeh (2017), Oussama, Ahmed and Fatma (2017)and Berhane (2018), who in their works argued that institutional environment increases the impact of financial development on economic growth. Hence, for the Sub-Saharan region to achieve much in terms of financial development impact on growth, the political institutions must be given greater attention.

The study further conducted the Arellano-Bond test for serial correlation AR (2) and Hansen test over-identifying restrictions. The null hypotheses are no second-order serial correlation and the instrumented variables are exogenous and not correlated with the error term. Since the value of the AR (2) from model 4 to 10 are 0.116, 0.161, 0.105, 0.129, 0.234, 0.213 and 0.161 respectively, the researcher failed to reject the null hypothesis of no second-order serial correlation and conclude that the models do not suffer from serial correlation. The values of Hansen over-identification test are 0.576, 0.407, 0.639, 0.535, 0.553, 0.832, 0.143 and 0.407 respectively, therefore the study failed to reject the null hypothesis of no over-identification restriction. From the post estimations, the researcher can conclude that the results are consistent and valid.

Chapter Summary

In this chapter, the researcher presented the descriptive statistics and correlations analysis, followed by the results and their discussions. The first objective sought to compare the effect of financial development on economic growth using a broad-based index of financial development and the two main single or narrowed-based financial indicators. The results showed that using a single banking sector indicator or any other narrowed-based indicators lead to an underestimation of the effect of financial development on economic growth. The second objective sought to examine the aspect of financial development that is significantly contributing to economic growth within the SSA region. From the result, we can conclude that financial market is the sector that is significantly contributing to growth within the SSA region. The third objective was to assess how institutional environment moderates the effects of financial development on economic growth within the region. The results showed that,

all the six institutional variables positively moderate the effect of financial development on economic growth. However, political institution must be given greater attention since it determines the scope and limit of other institutions.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter discusses the summary, conclusions and recommendations of the study. In the summary section, an overview of the problem statement, objectives, research question hypothesis and methodology were presented. The chapter also provides conclusion and policy recommendation to relevant authorities based on the findings of the study.

Summary

The findings indicate that using single or narrowed financial sector indicators or variables such as domestic credit to private sector as a percentage of GDP and broad money as a percentage of GDP to represent financial development leads to underestimation of the actual effect of financial development on economic growth. It also may lead to wrong conclusion of no effect as shown in the case of broad money as a percentage of GDP. The study also found that financial market development is the aspect of financial development that is significant in affecting growth within the Sub-Saharan African region. Financial institutions development was not significant in affecting growth within the region. This implies that, development in the financial market has both level and growth effects compared to financial institutions development. Lastly, from the interactive effect between financial development and institutions, the study found that, improvement in the institutional environment increased the impact of financial development on growth but political stability seems to play a better role compared to other institutional variables. This is not surprising because political institution

determines the scope and limit of economic and other forms of institutional classifications among the formal institutions.

Conclusions

The purpose of this study was to investigate the effect of financial development on economic growth in sub-Saharan Africa from 2000 to 2017. The study specifically compared the effect of financial development on economic growth using a broad-based index for financial development and other narrow-based financial development indicators in sub- Saharan Africa. The study also examined the relative importance of financial institutions development and financial market development in affecting economic growth within the SSA region. Lastly, the study examined how each of the institutional environment moderates the effects of financial development on economic growth within the SSA region. The study employs the system General Methods of Moments (GMM) approach on 36 SSA countries over the 18 years period. The dataset for the study were obtained from World Development Indicators (WDI), World Governance Indicators (WGI), Polity IV project and International Monetary Fund (IMF).

Based on the first objective, the study concluded that using narrow-based financial development indicators as a proxy for financial development may lead to underestimation of the effect of financial development on economic growth. Therefore, when researchers are analysing, how financial development affects any macroeconomic or policy variable, they should complement the use of the single or narrow-based financial development with the multidimensional measurements. Secondly, the study considered the relative importance financial

institutions development and financial market development in affecting growth in a desired manner within the sub-Saharan Africa region. This is because resources are very scarce and must be put to efficient use. This will help determine the sector towards, which policies and resources could be devoted for higher growth and development. From the result, financial market development is the aspect of financial development that is efficient and effective in affecting growth. Therefore, resources must be allocated to that section of financial development. Lastly, in assessing the moderating role of institutions on financial development to affect growth, the result indicates that institutions are effective in playing this moderating role. However, political stability appeared to be the driving force among the institutional variables, hence, much attention must be given to the political institutions within the SSA region.

In concluding this section, the study confirmed that, financial development affects growth and development but the measurement used for financial development matters in assessing the impact since financial sector has developed over the years. Hence, the multidimensional nature of financial development should be taken into consideration. To achieve growth using the financial sector within the sub-Saharan region, policymakers should consider stimulating the financial market instead of the financial institutions to achieve the desired growth. All the institutional variables are key and important in achieving growth but the political institution must be given special attention.

Recommendations

Considering the findings and conclusions of the current study, the following recommendations are suggested.

First, financial development within the sub-Saharan region has evolved from simple banking sector to multifaceted financial system. Hence, researchers and policy-makers (such as Central Banks and various governments) must complement the use of the single or narrow-based financial development with the multidimensional measurements when assessing the impact of financial development on any macroeconomic variable.

Also, if monetary authorities in any of the countries within the SSA region wish to stimulate the financial sector to achieve growth, the financial market must be considered first since it is more reliable to produce the growth effect that policymakers desired.

Finally, the institutional environment matters, when it comes to development as a whole and financial development specifically. Therefore, various government and political leaders must strive to maintain political stability within the region since political institution affects growth more and many other institutions depend on political institutions to promote growth and development.

Area for Further Research

The study focused on how financial development affects economic growth and the moderating role of institutions on financial development affecting growth. Future studies could consider in disaggregating growth into various sectors and looking at how financial development affect each sector. Also, future studies could consider using different measurements for economic growth to assess how financial development conditioned on institutional environment varies in terms of its impact on growth.

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